

**Phase II Environmental Site
Assessment, Former Military
Site, Cartwright, 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

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Table of Contents

EXECUTIVE SUMMARY	I
ABBREVIATIONS	IV
1.0 INTRODUCTION.....	1
1.1 Background	1
1.2 Site Description	1
1.2.1 Property Description and Land Use.....	1
1.2.2 Geology, Topography, and Drainage.....	2
1.3 Previous Environmental Assessments.....	3
1.4 Project Objectives	3
1.5 Scope of Work.....	4
1.6 Regulatory Framework	4
1.6.1 Petroleum Hydrocarbons.....	4
1.6.2 Other Contaminants	6
2.0 METHODOLOGY.....	8
2.1 Test Pit Excavation and Sampling Program.....	9
2.2 Surface Soil Sampling	9
2.3 Sediment and Surface Water Sampling.....	9
2.4 Vegetation Sampling	10
2.5 Laboratory Analysis	10
2.5.1 Quality Assurance/Quality Control Sampling Program	11
3.0 POTENTIAL EXPOSURE PATHWAYS AND CONCEPTUAL SITE MODEL.....	12
4.0 FORMER U.S. MILITARY CARTWRIGHT SITE – GENERAL AREA	16
4.1 Site Description	16
4.2 Description of Site Work	16
4.3 Results	17
4.3.1 Laboratory Analytical Results.....	17
4.3.2 Summary of Exceedances	21
5.0 FORMER CONTRACTORS VILLAGE (1951 - 1953).....	22
5.1 Site Description	22
5.2 Description of Site Work	22
5.3 Results	23
5.3.1 Laboratory Analytical Results.....	23
5.3.2 Summary of Exceedances	27
6.0 MAIN COMPLEX	29
6.1 Site Description	29



6.2	Description of Site Work	29
6.3	Results	30
6.3.1	Laboratory Analytical Results	30
6.3.2	Summary of Exceedances	36
7.0	FORMER USAF DUMP AREA AND FORMER AMMUNITION STORAGE AREA.....	38
7.1	Site Description	38
7.2	Description of Site Work	38
7.3	Results	39
7.3.1	Laboratory Analytical Results	39
7.3.2	Summary of Exceedances	44
8.0	SUMMARY OF EXCEEDANCES	46
9.0	NCSCS SITE CLASSIFICATION SUMMARY	48
10.0	CONCLUSIONS AND RECOMMENDATIONS	49
11.0	CLOSURE.....	51
12.0	REFERENCES.....	53

LIST OF APPENDICES

- Appendix A – Drawings
- Appendix B – Screening Checklists
- Appendix C – Photos
- Appendix D – Coordinates of Sample Locations
- Appendix E – Symbols and Terms, Test Pit Records
- Appendix F – Laboratory Analytical Summary Tables
- Appendix G – Laboratory Analytical Reports
- Appendix H – NCSCS Evaluation Form

LIST OF DRAWINGS

- Drawing No. 121414915-300-EE-01 – Site Location PlanAppendix A
- Drawing No. 121414915-300-EE-02 – Sample Location and Exceedance Plan
– Former U.S. Military Cartwright Site – General AreaAppendix A
- Drawing No. 121414915-300-EE-03 – Sample Location and Exceedance Plan
– Former Contractors Village (1951 – 1953)Appendix A
- Drawing No. 121414915-300-EE-04 – Sample Location and Exceedance Plan
– Main Complex.....Appendix A
- Drawing No. 121414915-300-EE-05 – Sample Location and Exceedance Plan
– Former USAF Dump Area and Former Ammunition Storage AreaAppendix A



LIST OF TABLES

Table 1.1	Site Inventory.....	2
Table 1.2	Ecological Screening Level Applicability within 200 m of the Site.....	6
Table 2.1	Summary of Field Duplicate Samples Collected.....	10
Table 2.2	Relative Percent Differences in Laboratory Duplicate Samples.....	11
Table 2.3	Relative Percent Differences in Field Duplicate Samples.....	11
Table 3.1	Potential Exposure Scenarios - Ecological Receptors.....	12
Table 3.2	Potential Exposure Scenarios - Human Receptors.....	13
Table 4.1	Summary of Laboratory Work – Former U.S. Military Cartwright Site – General Area	17
Table 4.2	Surface Water Sample Exceedances – Former U.S. Military Cartwright Site – General Area	21
Table 5.1	Summary of Laboratory Work – Former Contractors Village	22
Table 5.2	Soil Sample Exceedances – Former Contractors Village	28
Table 5.3	Sediment Sample Exceedances – Former Contractors Village	28
Table 5.4	Surface Water Sample Exceedances – Former Contractors Village.....	28
Table 6.1	Summary of Laboratory Work – Main Complex.....	29
Table 6.2	Soil Sample Exceedances – Main Complex.....	36
Table 6.3	Surface Water Sample Exceedances – Main Complex	37
Table 7.1	Summary of Laboratory Work – Former USAF Dump Area and Former Ammunition Storage Area	38
Table 7.2	Soil Sample Exceedances – Former USAF Dump Area and Former Ammunition Storage Area	44
Table 7.3	Sediment Sample Exceedances – Former USAF Dump Area and Former Ammunition Storage Area	44
Table 7.4	Surface Water Sample Exceedances – Former USAF Dump Area and Former Ammunition Storage Area.....	45
Table 8.1	Volume Estimates.....	47
Table 9.1	NCSCS Scoring Summary (CCME, 2008, v1.3).....	48
Table D.1	Coordinates of Sample Locations	Appendix D
Table F.1	Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil	Appendix F
Table F.2	Results of Laboratory Analysis of Petroleum Hydrocarbon Fractionation in Soil	Appendix F
Table F.3	Results of Laboratory Analysis of VOCs in Soil.....	Appendix F
Table F.4	Results of Laboratory Analysis of PAHs in Soil	Appendix F
Table F.5	Results of Laboratory Analysis of Available Metals in Soil.....	Appendix F
Table F.6	Results of Laboratory Analysis of PCBs in Soil	Appendix F
Table F.7	Results of Laboratory Analysis of Asbestos in Soil.....	Appendix F
Table F.8	Results of Laboratory Analysis of Petroleum Hydrocarbons in Freshwater Sediment.....	Appendix F
Table F.9	Results of Laboratory Analysis of PAHs in Freshwater Sediment.....	Appendix F
Table F.10	Results of Laboratory Analysis of Available Metals in Freshwater Sediment.....	Appendix F
Table F.11	Results of Laboratory Analysis of PCBs in Freshwater Sediment.....	Appendix F



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Table F.12	Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water	Appendix F
Table F.13	Results of Laboratory Analysis of General Chemistry in Surface Water	Appendix F
Table F.14	Results of Laboratory Analysis of PAHs in Surface Water.....	Appendix F
Table F.15	Results of Laboratory Analysis of Total Metals in Surface Water	Appendix F
Table F.16	Results of Laboratory Analysis of PCBs in Surface Water.....	Appendix F
Table F.17	Results of Laboratory Analysis of Available Metals in Vegetation.....	Appendix F
Table F.18	Results of Laboratory Analysis of PCBs in Vegetation	Appendix F



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 military site located adjacent to Cartwright, Newfoundland and Labrador (NL) (see Drawing No. 121414915.300-EE-01, Appendix A), herein referred to as the “Site”. 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 Cartwright to collect the information necessary to be eligible for Federal Contaminated Sites (FCSAP) funding to further assess and/or remediate the Site as required.

Site Description

The main area of the Cartwright Radar site is located approximately 4 km to the northeast of the community of Cartwright (see Drawing No. 121414915.300-EE-01, Appendix A). The former operational areas of the Site cover a land area of approximately 25 hectares and were operated by the US Military as a General Surveillance Radar Station from 1953 to 1968. As a Ground-Control Intercept and warning station (part of the Pinetree Line), it was used to guide interceptor aircraft towards unidentified intruders detected by the radar. The site formerly contained four troposcatter communication antennas, four (4) radomes, barracks, power plant, garage, dispensary, heating plant, operations room, fire department, and recreational facilities; all located together as an inter-connected complex on the hillside. Near the docks west of the hillside were fuel storage facilities that were connected to the upper POL (petroleum, oils, and lubricants) tank by an aboveground pipeline. Solid waste was historically disposed in an unlined landfill to the east of the site that was covered and graded in 1988. Solid waste was also reported as buried/covered in a ravine located between the main site and the main POL tank. In 1968, the US transferred control of the site to the Canadian Government and it was deactivated/closed shortly afterwards. The site was decommissioned in 1987 with the demolition of the remaining structures. The concrete foundations for many structures remain. A limited soil remediation program for PCBs was carried out in 1988 at the former landfill. Current infrastructure on the site include a Bell microwave station and Canadian Coast Guard Navtex, and MF Rx communication towers (not the responsibility of the provincial government).

Description of Site Work

In general, the project objectives set forth in the Terms of Reference (TOR) prepared by NLDMAE for the former military site in Cartwright, 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); and,
6. Make recommendations for the Site regarding additional work required to complete site characterization and delineation at the Sites (provide recommendations for a detailed testing program (Step 5 of the FACS)).

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. Stratigraphy at the Site consists generally of localized areas of reworked till overlying glacial till or directly overlying bedrock. Reworked material was comprised of loose to compact brown sand with occasional trace organics, gravel, and debris (concrete, metal, wood, glass, and plastic) and generally ranged in thickness from 0.3 m to greater than 1.8 m, which was the maximum depth of excavation during the current investigation.
2. Concentrations of PCBs and asbestos in environmental media were either non-detect or were detected at concentrations below the applicable guidelines in the samples analyzed.
3. Concentrations of TPH in select soil, 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:
 - a. Petroleum hydrocarbon impacts were identified in surface 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 Former Contractors Village (158 m³), Main Complex (237 m³), and Former USAF Dump Area and Former Ammunition Storage Area (39 m³).
 - b. Petroleum hydrocarbon impacts were identified in freshwater and marine sediment in exceedance of the applicable RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life (Typical sediment) at the Former Contractors Village (3 m³) and Former USAF Dump Area and Former Ammunition Storage Area (150 m³).
 - c. Petroleum hydrocarbon impacts were identified in surface water in exceedance of the applicable RBCA Tier I ESLs (freshwater and marine aquatic life) for fuel oil/lube oil impacts at the Former USAF Dump Area and Former Ammunition Storage Area (400 m²).
4. Concentrations of VOCs in select soil samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows:
 - a. VOC impacts were identified in soil in exceedance of the applicable CCME SQGs for the Protection of Environmental and Human Health for Commercial land use at the Main Complex (79 m³).
5. Concentrations of PAHs in select soil and sediment samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows:
 - a. PAH impacts were identified in soil in exceedance of the applicable CCME SQGs for the Protection of Environmental and Human Health for Commercial land use at the Former Contractors Village (79 m³), Main Complex (550 m³), and Former USAF Dump Area and Former Ammunition Storage Area (79 m³).



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

- b. PAH impacts were identified in freshwater sediment in exceedance of the applicable CCME PEL for Freshwater Sediment at the Former USAF Dump Area and Former Ammunition Storage Area (90 m³).
6. Concentrations of Metals in select soil, 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:
 - 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 Main Complex (237 m³) and Former USAF Dump Area and Former Ammunition Storage Area (79 m³).
 - b. Metals impacts were identified in sediment in exceedance of the applicable CCME PEL for Freshwater Sediment at the Former Contractors Village (12 m³).
 - c. Metals impacts were identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life at the Former Contractors Village (20 m²), Main Complex (20 m²), and Former USAF Dump Area and Former Ammunition Storage Area (1,000 m²). Metals impacts identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life were also identified in a pond at the Former U.S. Military Cartwright Site – General Area and the stream connecting Larks Harbour Pond to Sandwich Bay at the Site, but the areal extents of impacts were not assessed as part of the current investigation.
7. Concentrations of General Chemistry in select surface water samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows:
 - a. General chemistry impacts were identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life at the Former USAF Dump Area and Former Ammunition Storage Area (1,000 m²). General chemistry impacts identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life were also identified in the stream connecting Larks Harbour Pond to Sandwich Bay at the Site, but the areal extent of impacts was not assessed as part of the current investigation.

The volumes and areas of impacted material provided herein are estimates generated based on the available site data. Based on the permeability of the soils at the Site, historical land use, and current sample density, additional delineation is recommended to refine the extent of impacts (larger or smaller) at the Site. Based on ecological screening included in Appendix B, further assessment is required to address ecological concerns. In particular, the vertical extent of impacts should be investigated with a borehole/monitor well program and should include a groundwater assessment.



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
FSCAP	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
POL	Petroleum, oils, lubricants
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



Introduction
June 7, 2018

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 military site located adjacent to Cartwright, Newfoundland and Labrador (NL) (see Drawing No. 121414915.300-EE-01, Appendix A), herein referred to as the “Site”. 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 Cartwright to collect the information necessary to be eligible for Federal Contaminated Sites (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

The main area of the Cartwright Radar site is located approximately 4 km to the northeast of the community of Cartwright (see Drawing No. 121414915.300-EE-01, Appendix A). The former operational areas of the Site cover a land area of approximately 25 hectares and were operated by the US Military as a General Surveillance Radar Station from 1953 to 1968. As a Ground-Control Intercept and warning station (part of the Pinetree Line), it was used to guide interceptor aircraft towards unidentified intruders detected by the radar. The site formerly contained four troposcatter communication antennas, four (4) radomes, barracks, power plant, garage, dispensary, heating plant, operations room, fire department, and recreational facilities; all located together as an inter-connected complex on the hillside. Near the docks west of the hillside were fuel storage facilities that were connected to the upper POL (petroleum, oils, and lubricants) tank by an aboveground pipeline. Solid waste was historically disposed in an unlined landfill to the east of the site that was covered and graded in 1988. Solid waste was also reported as buried/covered in a ravine located between the main site and the main POL tank. In 1968, the US transferred control of the site to the



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Introduction
June 7, 2018

Canadian Government and it was deactivated/closed shortly afterwards. The site was decommissioned in 1987 with the demolition of the remaining structures. The concrete foundations for many structures remain. A limited soil remediation program for PCBs was carried out in 1988 at the former landfill. Current infrastructure on the site include a Bell microwave station and Canadian Coast Guard Navtex, and MF Rx communication towers (not the responsibility of the provincial government).

Based on previous environmental reports and field work completed as part of the current investigation, the overall site was divided into four (4) smaller study sites for the purpose of the Phase II ESA investigation. These sites are summarized in Table 1.1 and their locations with respect to the overall site are shown on Drawings No. 121414915.300-EE-01 and 121414015.300-EE-02 in Appendix A.

Table 1.1 Site Inventory

Area	Areas of Interest	Drawing
Former U.S. Military Cartwright Site – General Area	Gravel road, above-ground (a/g) pipeline, former helicopter pad, former pumphouse, small unnamed stream from Larks Harbour Pond to Sandwich Bay, one (1) pond	Drawing No. 121414915.300-EE-02
Former Contractors Village (1951 – 1953)	Former drum-storage area, motor pool, barracks, mess hall, medical dispensary (specific location of each area is unknown), one (1) small pond, remains of a dock along the shoreline of Sandwich Bay	Drawing No. 121414915.300-EE-03
Main Complex	Gravel road, a/g waterline, a/g pipeline, former ASTs (multiple), area of debris burial, former troposcatter communication antennas, area of 1978/1980 PCB spill and remediation, former buildings (multiple), one (1) small pond	Drawing No. 121414915.300-EE-04
Former USAF Dump Area and Former Ammunition Storage Area	Gravel road, former USAF dump area, former ammunition storage, area of PCB cleanup in 1987, two (2) small ponds, area of regrading	Drawing No. 121414915.300-EE-05

1.2.2 Geology, Topography, and Drainage

Based on available surficial geology maps, the native surficial soils at the Site consist of a mixture of discontinuous, non-stratified, poorly sorted silty to sandy diamicton, gravel, and sandy gravel with frequent occurrences of exposed bedrock, often concealed by vegetation (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 Site consists generally of localized areas of reworked till overlying glacial till or directly overlying bedrock. Reworked material was



Introduction
June 7, 2018

comprised of loose to compact brown sand with occasional trace organics, gravel, and debris (concrete, metal, wood, glass, and plastic) and generally ranged in thickness from 0.3 m to greater than 1.8 m, which was the maximum depth of excavation during the current investigation.

Bedrock in the area consists of late Paleoproterozoic granite, quartz, monzonite, granodiorite, syenite, and minor quartz diorite of the Grenville, Nain, and Makkovik provinces (Wardle et. al., 1997). Exposed bedrock is common throughout the Site.

Topography at the Site varies depending on location but generally slopes away from the topographic high at the Main Complex area. From the Main Complex area, the site slopes moderately to the north and west toward the waters of Sandwich Bay, and moderately to the east and south toward Larks Harbour Pond and its brooks that drain west to Sandwich Bay. The Site ranges in elevation from 170 m above sea level (masl) at the Main Complex to 0 masl along the shores of Sandwich Bay at the Former Contractors Village.

1.3 Previous Environmental Assessments

Several environmental assessment reports have been produced since 1981 relating to potential and actual contamination in the vicinity of the former military site. Previous site investigations have been primarily related to two PCB remediation programs in 1980 and 1988. 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 PCBs. Previous environmental reports completed for Cartwright include the following:

- 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;
- BAE Group, 1987. Report on Cartwright PCB Action Plan; and,
- BAE Group, 1988. Final Status Report, Report on Cartwright PCB Action Plan.

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 former military site in Cartwright, 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); and,



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Introduction
June 7, 2018

6. Make recommendations for the Site regarding additional work required to complete site characterization and delineation at the Sites (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 July 11, 2017, included the following:

- Complete Phase II subsurface test pit investigation for the purpose of investigating potential subsurface soil impacts associated with various historical operations and activities;
- Collect representative soil samples from test pits;
- Collect representative surface soil samples in specified areas of the Site;
- Collect representative sediment and surface water samples from potentially impacted ponds and lakes, as identified in Stantec's Proposal;
- Submit selected soil, sediment, and surface water samples for laboratory analysis of COPCs;
- Collect representative vegetation samples; and,
- 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).



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Introduction
June 7, 2018

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. The Site Assessment and Tier I/II checklist is presented in Appendix B. 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 Table B.1, in Appendix B. Based on completion of the protocol, the ecological screening levels (ESLs) applicable for the site are summarized in Table 1.2.



Introduction
June 7, 2018

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 Site is surrounded by shrubbery, forest, and grass. Site hydrocarbons in surface soil may come into contact with terrestrial plants and invertebrates in these areas.
Protection of Wildlife (mammals and birds) and Livestock; Soil and Food Ingestion (Table 1b)*	Yes	The Site is surrounded by shrubbery, forest, and grass. 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 encountered from 0.1 mbgs to greater than 1.8 mbgs. It is possible that there are impacts to shallow groundwater. Groundwater sampling was not included in the scope of work for the current investigation.
Protection of Freshwater and Marine Aquatic Life from groundwater and surface water impacts (Table 3a and Table 3b)*	Yes	The waters of Sandwich Bay surround the northern and western perimeter of the Site and several ponds are scattered throughout the Site.
Protection of Freshwater and Marine Aquatic Life from sediment impacts (Table 4)*	Yes	Freshwater and marine sediments were encountered on the shores of Sandwich Bay and the ponds scattered throughout the Site.
<p>Note: *Table references based on <i>Atlantic RBCA Version 3 User Guidance (Appendix 2)</i>.</p>		

1.6.2 Other Contaminants

In addition to petroleum hydrocarbons, environmental media at the site was analyzed for VOCs, 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.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Introduction
June 7, 2018

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);
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 NLDMAE Request for Proposals (RFP), the CCME CEQGs were given top priority. 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 Health 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.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Methodology
June 7, 2018

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 excavation of test pits, associated soil sampling and analysis, as well as collection of surface soil, freshwater/marine sediment, surface water, and vegetation samples. The field component of the Phase II ESA was completed over two site visits, on October 13, 2017 and November 7, 2017. A detailed description of work completed for each area is provided in Sections 3.2 to 6.2. Field work was conducted by Stantec field technicians in accordance with Stantec's Standard Operating Procedures. Helicopter services were provided by Canadian Helicopters Ltd. of St. John's, NL.

For the purposes of the Phase II ESA, the Site was divided into four (4) areas, as follows:

1. Former U.S. Military Cartwright Site – General Area
2. Former Contractors Village (1951 – 1953)
3. Main Complex
4. Former USAF Dump Area and Former Ammunition Storage Area

Each area is discussed separately herein. Approximate test pit locations were selected by Stantec in target areas of concern. Actual test pit locations were established in the field by Stantec. Drawings showing the layout of each individual area and actual sampling locations are provided in Appendix A (Drawings No. 121414915.300-EE-02 to 121414915.300-EE-06). Photographs of each location are provided in Appendix C.

An existing municipal landfill, two (2) former municipal landfills, two (2) DFO/Coast Guard communication towers, and a Bell communications tower are present within the boundary of the Site but are not the responsibility of the provincial government and were therefore not assessed as part of the current



Methodology
June 7, 2018

investigation. The locations of these features are shown in Drawing No. 121414915.300-EE-02 in Appendix A.

2.1 Test Pit Excavation and Sampling Program

Test pits were excavated using a CAT-305 track mounted excavator supplied and operated by Cartwright Holdings Ltd. under the supervision of Stantec personnel. Test pits were excavated to depths ranging from approximately 0.4 mbgs to 1.8 mbgs 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 and are presented in the Test Pit Records in Appendix E. 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 all 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 frequent intervals over their respective depths, the number of which varied with the test pit depth (one (1) to two (2) per test pit). The soil samples were visually examined in the field for any evidence of impacts and placed in clean glass jars. The samples were placed on ice in sample coolers and returned to the Stantec's office in St. John's, NL for sample selection and submission to the laboratory. Soil samples were submitted to an accredited commercial laboratory for required laboratory analysis.

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 were visually examined in the field for any evidence of impacts and placed in clean glass jars. The samples were placed on ice in sample coolers and returned to Stantec's office in St. John's, NL for sample selection and submission to the laboratory. Soil samples were submitted to an accredited commercial laboratory for required laboratory analysis.

2.3 Sediment and Surface Water Sampling

A sediment and surface water sampling program was carried out as part of the Phase II site investigation. This included the collection of freshwater and/or marine sediment and surface water samples from the shoreline of Sandwich Bay and ponds throughout the Site.

Freshwater and marine sediment samples were collected using bulk sampling methods beneath approximately 0.3 m of water. Samples were collected from the sediment/water interface to 0.15 m below the bottom of the water column. All samples were examined for any field evidence of impacts. The samples were placed in clean glass jars. The samples were placed on ice in sample coolers prior to sample selection and submission to the laboratory. Sediment samples were submitted to an accredited commercial laboratory for required laboratory analysis of the required COPCs.

Surface water samples were collected into clean, new sample bottles. The samples were placed on ice in sample coolers prior to sample selection and submission to the laboratory. Surface water samples were submitted to an accredited commercial laboratory for required laboratory analysis.



Methodology
June 7, 2018

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 as well as clean background areas (i.e., areas where impacts are not likely to be present).

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

2.5 Laboratory Analysis

Laboratory analysis was completed by Maxxam Analytics at their laboratories in St. John's, NL, Bedford, Nova Scotia (NS), and Mississauga, Ontario (ON). Tables 3.1 to 6.1 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 F.1 to F.18 in Appendix F. Methodologies utilized by Maxxam Analytics in analysis of the samples are noted on laboratory reports in Appendix G.

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	CWT-SS7	CWT-SS70	TPH/BTEX, Metals, PCBs
	CWT-TP18-BS1	CWT-TP100-BS1	TPH/BTEX, Metals, PCBs
	CWT-TP26-BS1	CWT-TP101-BS1	Metals, PAHs, PCBs
	CWT-TP20-BS1	CWT-TP102-BS1	TPH/BTEX, Metals, PCBs
	CWT-TP19-BS2	CWT-TP103-BS2	TPH/BTEX
	CWT-TP36-BS2	CWT-TP104-BS2	PAHs, VOCs
	CWT-TP42-BS1	CWT-TP105-BS1	Metals, PCBs
	CWT-TP35-BS2	CWT-TP106-BS2	TPH/BTEX
	CWT-TP33-BS2	CWT-TP107-BS1	TPH/BTEX
	CWT-TP19-BS1	CWT-TP108-BS1	PAHs
	CWT-TP42-BS2	CWT-TP109-BS2	TPH/BTEX
	CWT-TP13-BS2	CWT-TP110-BS2	PCBs
	CWT-TP34-BS1	CWT-TP111-BS1	TPH/BTEX

Analytical results for duplicate samples are provided in analytical summary tables in Appendix F. Duplicate samples were collected at the same location as the Sample IDs listed above, therefore duplicate samples are not shown on Drawings No. 121414915.300-EE-02 to 121414915.300-EE-05.

Methodology
June 7, 2018

2.5.1 Quality Assurance/Quality Control Sampling Program

Results of the QA/QC for laboratory and field duplicates for PHCs, PAHs, and metals 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: C1 is the concentration in the original sample;
C2 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 water. For field duplicate samples, CCME (2016) recommends an RPD limit of up to 60% for soil and sediment, and 40% for water. 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%)	0 to 28	5 of 5	Yes
Metals	Soil (30%)	0 to 58	21 of 23	Yes
General Chemistry	Surface water (20%)	0 to 7	4 of 4	Yes

Table 2.3 Relative Percent Differences in Field Duplicate Samples

Analysis	Matrix (acceptable RPD)	Range of %RPD	Number of analytes within ±60% RPD	Acceptable Duplicate Correlation?
Petroleum Hydrocarbons	Soil (60%)	39 to 164	2 of 7	No
PAHs	Soil (60%)	100 to 129	0 of 2	No
Metals	Soil (60%)	0 to 51	25 of 25	Yes



In general, the duplicate results agree closely with their corresponding samples and confirm the representativeness of the sampling procedures. The lack of acceptable duplicate correlation measured for PHCs in soil for two samples (CWT-TP35-BS2 and CWT-TP42-BS2) and PAHs in one sample (CWT-TP36-BS2) is likely the result of contaminant distribution rather than sampling methodology. This is reinforced by the acceptable duplicate correlation of metals in all metals field duplicate samples. 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 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 identify complete exposure pathways following 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 (multiple 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.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Potential Exposure Pathways and Conceptual Site Model
June 7, 2018

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 1.8 mbgs).
Dermal contact with soil/dust		
Indirect dermal contact with soil/dust being tracked indoors		
Inhalation of vapours (indoors)	No	No buildings at the site.
Inhalation of vapours and particulates (outdoors)	Yes	Impacts are present in surface soil (ground surface to at least 1.8 mbgs).
Dermal contact with/Ingestion of surface water or sediment	Yes	Humans could contact surface water or sediments within Sandwich Bay and multiple 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 Sandwich Bay.

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Potential Exposure Pathways and Conceptual Site Model
June 7, 2018

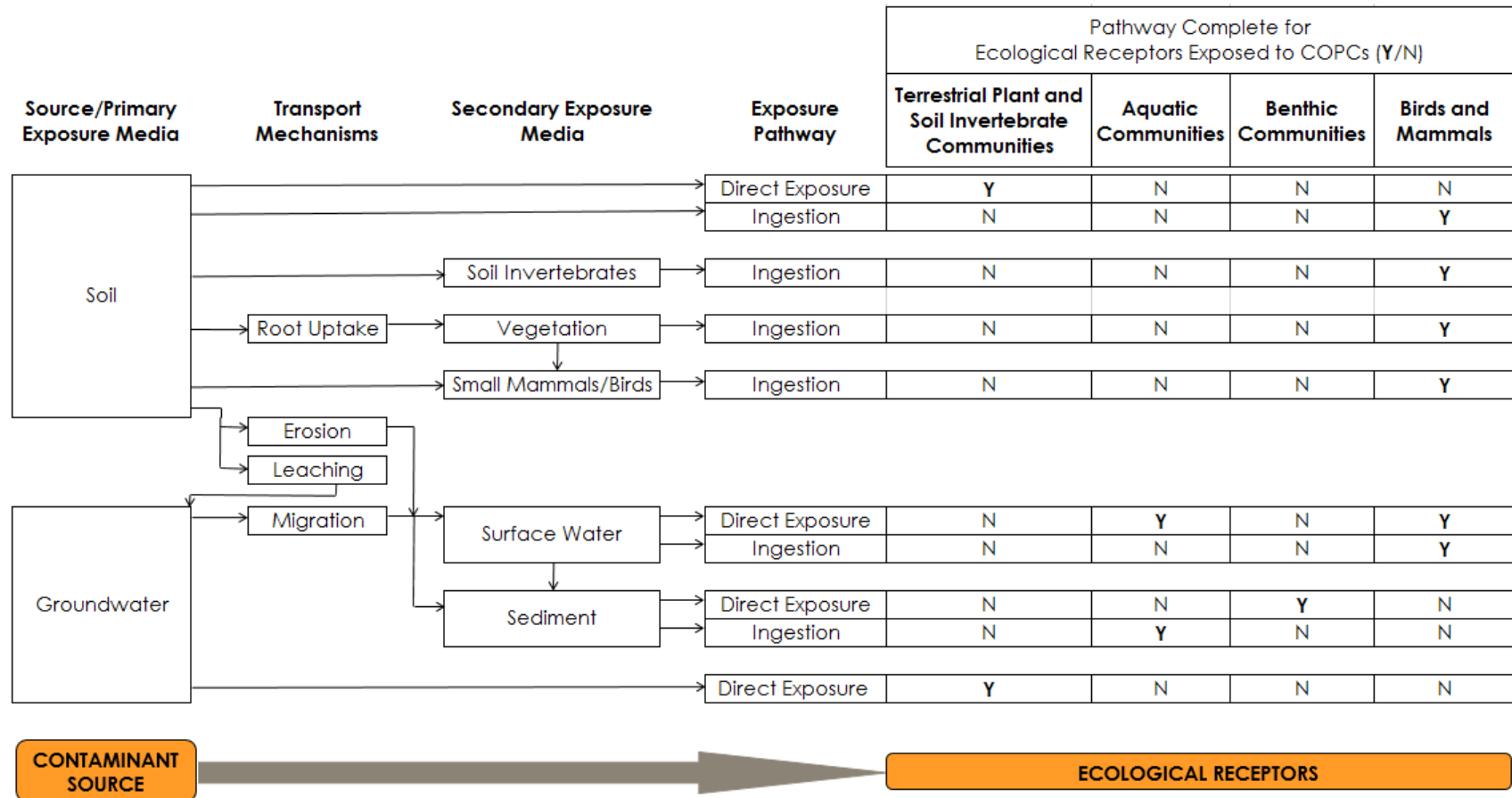


Figure 3-1 Conceptual Site Model for Ecological Receptors



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Potential Exposure Pathways and Conceptual Site Model
June 7, 2018

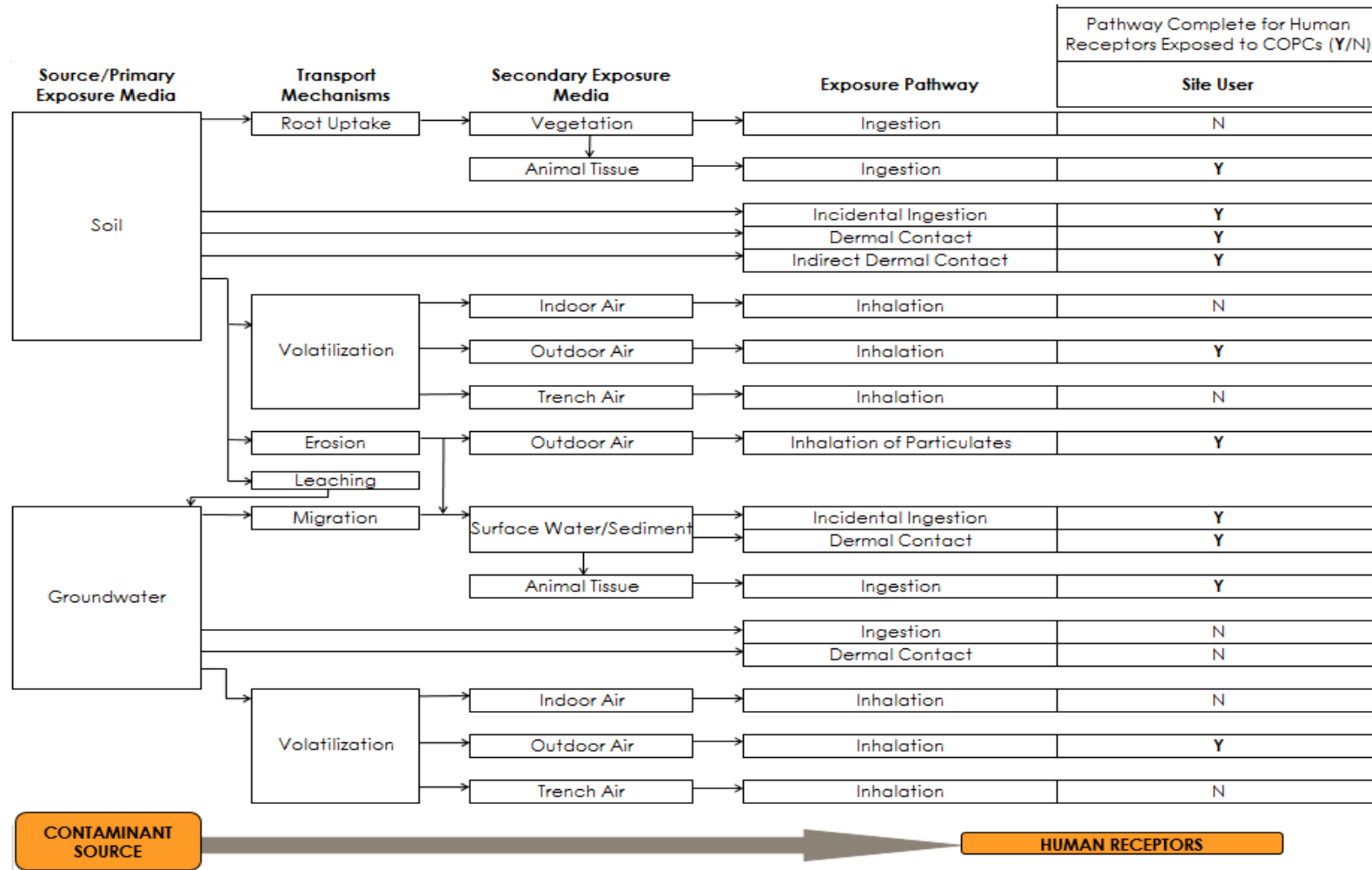


Figure 3-2 Conceptual Site Model for Human Receptors



Former U.S. Military Cartwright Site – General Area
June 7, 2018

4.0 FORMER U.S. MILITARY CARTWRIGHT SITE – GENERAL AREA

4.1 Site Description

The Former U.S. Military Cartwright Site – General Area consists of site locations that are not included at the Former Contractors Village, Main Complex, or Former USAF Dump and Ammunition Storage Area. The main feature of the Former U.S. Military Cartwright Site – General Area is the 5 km stretch of gravel road that has provided access from the community of Cartwright to the various areas of the Site since its construction in the 1950s. A former above-ground pipeline, following the same path as the gravel access road, supplied fuel to the Main Complex area from the docks of the community of Cartwright during site operations. Site surfaces consist mainly of loose brown sand and gravel, with thick vegetative coverage overlying bedrock. Areas of interest at this location include the gravel access road, former above-ground pipeline, former helicopter pad, former pumphouse, a small unnamed stream running from Larks Harbour Pond to Sandwich Bay, and one (1) pond located west of the Main Complex. Locations of these features are shown in Drawing No. 121414915.300-EE-02 in Appendix A.

This area also contains an existing municipal landfill, two (2) former municipal landfills, two (2) DFO/Coast Guard communication towers, and a Bell communications tower. These locations/structures are not the responsibility the provincial government and were therefore not assessed as part of the current investigation.

4.2 Description of Site Work

Field work at the Former U.S. Military Cartwright Site – General Area consisted of the excavation of three (3) test pits with corresponding soil sampling, the collection of 21 surface soil samples, the collection of two (2) sediment samples with corresponding surface water samples, and three (3) vegetation samples. The sample locations and general site features are shown on Drawing No. 121414915.300-EE-02 in Appendix A.

The laboratory analysis schedule completed for the Former U.S. Military Cartwright Site – General Area is presented in Table 4.1.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former U.S. Military Cartwright Site – General Area
June 7, 2018

Table 4.1 Summary of Laboratory Work – Former U.S. Military Cartwright Site – General Area

Sample Locations	Sample Matrix		
	Soil/Sediment	Water	Vegetation
<u>Soil:</u> CWT-SS42 to CWT-SS62 CWT-TP33, CWT-TP34, and CWT-TP43 <u>Sediment:</u> CWT-SED2 and CWT-SED3 <u>Water:</u> CWT-SW2 and CWT-SW3 <u>Vegetation:</u> CWT-VEG5, CWT-VEG9, and CWT-BER5	<u>Soil</u> TPH/BTEX (24), PAHs (5), Metals (11), PCBs (12) <u>Sediment</u> TPH/BTEX (2), PAHs (2), Metals (2), PCBs (2)	<u>Surface Water</u> TPH/BTEX (2), General Chemistry (1), PAH (2), Metals (2), PCBs (2)	<u>Vegetation</u> Metals (3), PCBs (3)

4.3 Results

4.3.1 Laboratory Analytical Results

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

4.3.1.1 Soil Analytical Results

Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on 24 soil samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SS42 to CWT-SS44, CWT-SS46, CWT-SS48 to CWT-SS62, CWT-TP33-BS1, CWT-TP33-BS2, CWT-TP34-BS1, CWT-TP43-BS1, and CWT-TP11-BS1 (field dup of CWT-TP34-BS1)). Also, two (2) laboratory duplicate samples (CWT-SS42 Lab-Dup and CWT-SS50 Lab-Dup) were analyzed. Results of the laboratory analysis of soil samples for petroleum hydrocarbons are presented in Table F.1 in Appendix F.

TPH was detected in eleven (11) of the 26 soil samples analyzed at concentrations ranging from 18 mg/kg (CWT-SS53) to 550 mg/kg (CWT-SS59). The laboratory analytical reports indicated that products impacting the samples generally resemble the lube oil range. The detected concentrations of TPH did not exceed the applicable Tier I RBSLs.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former U.S. Military Cartwright Site – General Area
June 7, 2018

BTEX parameters were not detected in the soil samples analyzed.

The detected concentration of petroleum hydrocarbon parameters in soil samples were below the applicable Tier I ESLs for the Protection of Plants and Soil Invertebrates (Table 1a) and the Tier I ESLs for the Protection of Wildlife and Livestock (Table 1b).

PAHs in Soil

PAH analysis was conducted on five (5) soil samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SS49, CWT-SS52, CWT-SS55, CWT-SS58, and CWT-SS61). Results of the laboratory analysis of soil samples for PAHs are presented in Table F.4 in Appendix F.

PAHs were not detected in the soil samples analyzed.

Metals in Soil

Metals analysis was conducted on 11 soil samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SS43, CWT-SS44, CWT-SS48, CWT-SS49, CWT-SS52, CWT-SS54, CWT-SS56 to CWT-SS58, CWT-SS60, and CWT-SS62). Results of the laboratory analysis of soil samples for metals are presented in Table F.5 in Appendix F.

Concentrations of various metals were detected in all 11 samples. None of the detected concentrations of metals in soils exceeded the applicable guidelines for a commercial site, where such guidelines exist.

PCBs in Soil

PCB analysis was conducted on 12 soil samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SS42 to CWT-SS51, CWT-SS57, and CWT-SS62). Also, one (1) laboratory duplicate sample (CWT-SS62 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for PCBs are presented in Table F.6 in Appendix F.

PCBs were not detected in the soil samples analyzed.

4.3.1.2 Sediment Analytical Results

Petroleum Hydrocarbons in Sediment

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) sediment samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SED2 and CWT-SED3). Results of the laboratory analysis of sediment samples for petroleum hydrocarbons are presented in Table F.8 in Appendix F.

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



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former U.S. Military Cartwright Site – General Area
June 7, 2018

PAHs in Sediment

PAH analysis was conducted on two (2) sediment samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SED2 and CWT-SED3). Results of the laboratory analysis of sediment samples for PAHs are presented in Table F.9 in Appendix F.

Various PAH parameters were detected in sediment sample CWT-SED3. None of the detected PAH parameters exceeded the applicable guidelines, where such guidelines exist.

Metals in Sediment

Metals analysis was conducted on two (2) sediment samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SED2 and CWT-SED3). Results of the laboratory analysis of sediment samples for metals are presented in Table F.10 in Appendix F.

Concentrations of various metals were detected in both samples. None of the detected concentrations of metals in sediment exceeded the applicable guidelines, where such guidelines exist.

PCBs in Sediment

PCB analysis was conducted on two (2) sediment samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SED2 and CWT-SED3). Results of the laboratory analysis of sediment samples for PCBs are presented in Table F.11 in Appendix F.

PCBs were not detected in the sediment samples analyzed.

4.3.1.3 Surface Water Analytical Results

Petroleum Hydrocarbons in Surface Water

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) surface water samples collected from a pond to the northwest of the Main Complex (CWT-SW2) and from the stream connecting Larks Harbour Pond to Sandwich Bay (CWT-SW3). Results of the laboratory analysis of surface water samples for petroleum hydrocarbons are presented in Table F.12 in Appendix F.

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 Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SW2 and CWT-SW3). Results of the laboratory analysis of surface water samples for general chemistry are presented in Table F.13 in Appendix F.

pH measured in the surface water sample CWT-SW3 was 5.78, which falls outside the applicable guideline of 6.5 to 9.0.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former U.S. Military Cartwright Site – General Area
June 7, 2018

PAHs in Surface Water

PAH analysis was conducted on two (2) surface water samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SW2 and CWT-SW3). Also, one (1) laboratory duplicate sample (CWT-SW2 Lab-Dup) was analyzed. Results of the laboratory analysis of surface water samples for PAHs are presented in Table F.14 in Appendix F.

Various PAH parameters were detected in all three (3) surface water samples. None of the detected PAH parameters exceeded the applicable guidelines, where such guidelines exist.

Metals in Surface Water

Metals analysis was conducted on two (2) surface water samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SW2 and CWT-SW3). Results of the laboratory analysis of surface water samples for metals are presented in Table F.15 in Appendix F.

Concentrations of various metals were detected in both samples. The concentration of aluminum in surface water samples CWT-SW2 (130 µg/L) and CWT-SW3 (520 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 5 µg/L. The concentration of iron in surface water sample CWT-SW3 (800 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 300 µg/L.

None of the remaining detected concentrations of metals in surface water exceeded the applicable CCME Water Quality Guidelines, where such guidelines exist.

PCBs in Surface Water

PCB analysis was conducted on two (2) surface water samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-SW2 and CWT-SW3). Results of the laboratory analysis of surface water samples for PCBs are presented in Table F.16 in Appendix F.

PCBs were not detected in the surface water samples analyzed. There are no applicable guidelines for PCBs in surface water.

4.3.1.4 Vegetation Analytical Results

Metals in Vegetation

Metals analysis was conducted on three (3) vegetation samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-VEG5, CWT-VEG9, and CWT-BER5). Results of the laboratory analysis of vegetation samples for metals are presented in Table F.17 in Appendix F.

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



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former U.S. Military Cartwright Site – General Area
June 7, 2018

PCBs in Vegetation

PCB analysis was conducted on three (3) vegetation samples collected from the Former U.S. Military Cartwright Site – General Area as part of the current investigation (CWT-VEG5, CWT-VEG9, and CWT-BER5). Also, two (2) laboratory duplicate samples (CWT-VEG9 Lab-Dup and CWT-BER5 Lab-Dup) were analyzed. Results of the laboratory analysis of vegetation samples for PCBs are presented in Table F.18 in Appendix F.

PCBs were detected in vegetation samples CWT-VEG5 (0.24 µg/g), CWT-VEG9 (0.35 µg/g), and CWT-VEG9 Lab-Dup (0.33 µg/g). There are no applicable guidelines for PCBs in vegetation.

4.3.2 Summary of Exceedances

The Phase II ESA identified one (1) COPC in environmental media at the Former U.S. Military Cartwright Site – General Area with concentrations exceeding the applicable criteria-based guidelines for a commercial site, where such guidelines exist. The exceedance recorded in surface water during the current investigation is summarized in Table 4.2.

Table 4.2 Surface Water Sample Exceedances – Former U.S. Military Cartwright Site – General Area

Sample No.	Parameter	Conc. (µg/L)	Referenced Guidelines (µg/L) ¹
CWT-SW2	Aluminum	130	5 (CCME WQG)
CWT-SW3	Aluminum Iron	520 750	5 (CCME WQG) 300 (CCME WQG)

Referenced Guidelines:
¹ CCME WQGs for the Protection of Freshwater Aquatic Life (1999 and updates).

The locations of the metals exceedances at the Former U.S. Military Cartwright Site – General Area are shown on Drawing No. 121414915.300-EE-02 in Appendix A.



Former Contractors Village (1951 - 1953)
June 7, 2018

5.0 FORMER CONTRACTORS VILLAGE (1951 - 1953)

5.1 Site Description

The Former Contractors Village is located along the western boundary of the Site along the shores of Sandwich Bay. Site surfaces consist mainly of loose brown sand with thick vegetative cover. Although specific locations of former site infrastructure at the Former Contractors Village are not known, based on information provided by former contractor employees at the Site, the Former Contractors Village consisted of a drum-storage area, motor pool, barracks, mess hall, and medical dispensary. The area also contains a small pond located to the northeast of the Site, and the remains of a dock along the shoreline of Sandwich Bay. Metal and construction debris is common along the shore. The remains of the Former Contractors Village are shown in Drawing No. 121414915.300-EE-03 in Appendix A.

5.2 Description of Site Work

Field work at the Former Contractors Village consisted of the excavation of eight (8) test pits with corresponding soil sampling, the collection of six (6) surface soil samples, two (2) sediment samples, one (1) surface water sample, and one (1) vegetation sample. The sample locations and general site features are shown on Drawing No. 121414915.300-EE-03 in Appendix A.

The laboratory analysis schedule completed for the Former Contractors Village is presented in Table 5.1.

Table 5.1 Summary of Laboratory Work – Former Contractors Village

Sample Locations	Sample Matrix		
	Soil/Sediment	Water	Vegetation
<u>Soil:</u> CWT-SS63 to CWT-SS68 CWT-TP35 to CWT-TP42 <u>Sediment:</u> CWT-SED4 and CWT-SED5 <u>Water:</u> CWT-SW5 <u>Vegetation:</u> CWT-VEG12	<u>Soil</u> TPH/BTEX (14), TPH Frac. (1), VOCs (3), PAHs (5), Metals (10), PCBs (10), Asbestos (1) <u>Sediment</u> TPH/BTEX (2), PAHs (2), Metals (2), PCBs (2)	<u>Surface Water</u> TPH/BTEX (1), PAH (1), Metals (1), PCBs (1)	<u>Vegetation</u> Metals (1), PCBs (1)



Former Contractors Village (1951 - 1953)
June 7, 2018

5.3 Results

5.3.1 Laboratory Analytical Results

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

5.3.1.1 Soil Analytical Results

Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on 14 soil samples collected from the Former Contractors Village as part of the current investigation (CWT-SS63, CWT-SS64, CWT-SS66 to CWT-SS68, CWT-TP35-BS, CWT-TP37-BS2, CWT-TP38-BS2, CWT-TP39-BS2, CWT-TP40-BS2, CWT-TP41-BS2, CWT-TP42-BS2, CWT-TP106-BS2 (field dup of CWT-TP35-BS2), and CWT-TP109-BS2 (field dup of CWT-TP42-BS2)). Also, one (1) laboratory duplicate sample (CWT-TP40-BS2 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for petroleum hydrocarbons are presented in Table F.1 in Appendix F.

Petroleum hydrocarbon fractionation (TPH Fract./BTEX) was conducted on one (1) soil sample collected from the Former Contractors Village as part of the current investigation (CWT-TP36-BS2). Results of the laboratory analysis of soil samples for petroleum hydrocarbon fractionation are presented in Table F.2 in Appendix F.

TPH was detected in 10 of the 16 soil samples analyzed at concentrations ranging from 19 mg/kg (CWT-TP37-BS2) to 990 mg/kg (CWT-TP35-BS2). The laboratory analytical reports indicated that products impacting the samples generally resembled weathered fuel oil and/or lube oil range. Product in samples CWT-TP42-BS2 and CWT-TP36-BS2 also resembled the gasoline range. The detected concentrations of TPH did not exceed the applicable Tier I RBSLs.

BTEX parameters were not detected in the soil samples analyzed.

Concentrations of hydrocarbon fraction F2 exceeded the applicable Tier I ESLs for the Protection of Plants and Soil Invertebrates (Table 1a) (260 mg/kg) in soil samples CWT-TP35-BS2 (F2 = 490 mg/kg), CWT-TP41-BS2 (F2 = 830 mg/kg), and CWT-TP106-BS2 (F2 = 330 mg/kg) (Field Dup of CWT-TP35-BS2).

VOCs in Soil

VOC analysis was conducted on three (3) soil samples collected from the Former Contractors Village as part of the current investigation (CWT-SS67, CWT-TP36-BS2, and CWT-TP104-BS2 (field dup of CWT-TP36-BS2)). Results of the laboratory analysis of soil samples for VOCs are presented in Table F.3 in Appendix F.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former Contractors Village (1951 - 1953)
June 7, 2018

Various VOC parameters were detected in soil samples CWT-TP36-BS2 and CWT-TP104-BS2 (field dup of CWT-TP36-BS2). None of the detected VOC parameters exceeded the applicable guidelines, where such guidelines exist.

PAHs in Soil

PAH analysis was conducted on five (5) soil samples collected from the Former Contractors Village as part of the current investigation (CWT-SS63, CWT-SS66, CWT-TP36-BS2, CWT-TP41-BS1, and CWT-TP104-BS2 (field dup of CWT-TP36-BS2)). Also, one (1) laboratory duplicate sample (CWT-TP41-BS1 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for PAHs are presented in Table F.4 in Appendix F.

PAH parameters were detected in two (2) of the six (6) soil samples analyzed. 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.

Concentrations of naphthalene in soil sample CWT-TP104-BS2 (field dup of CWT-TP36-BS2) (0.21 mg/kg) exceeded the applicable CCME SQGs for a commercial site for the protection of environmental health of 0.013 mg/kg. Non-detected concentrations of naphthalene in soil sample CWT-TP36-BS2 had an RDL exceeding the applicable CCME SQG due to matrix/co-extractive interference during laboratory analysis. For the purposes of delineation, considering that CWT-TP104-BS2 is a duplicate of CWT-TP36-BS2, sample CWT-TP36-BS2 is considered to exceed CCME SQGs for PAHs.

All 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).

Metals in Soil

Metals analysis was conducted on 10 soil samples collected from the Former Contractors Village as part of the current investigation (CWT-SS63, CWT-SS65, CWT-SS67, CWT-SS68, CWT-TP36-BS1, CWT-TP39-BS1, CWT-TP40-BS1, CWT-TP42-BS1, and CWT-TP105-BS1 (field dup of CWT-TP42-BS1)). Also, one (1) laboratory duplicate sample (CWT-TP37-BS1 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for metals are presented in Table F.5 in Appendix F.

Concentrations of various metals were detected in all 11 samples. None of the detected concentrations of metals in soils exceeded the applicable guidelines for a commercial site, where such guidelines exist.

PCBs in Soil

PCB analysis was conducted on 10 soil samples collected from the Former Contractors Village as part of the current investigation (CWT-SS64, CWT-SS66, CWT-SS68, CWT-TP35-BS1, CWT-TP38-BS1, CWT-TP39-BS1, CWT-TP41-BS1, CWT-TP42-BS1, and CWT-TP105-BS1 (field dup of CWT-TP42-BS1)). Also,



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former Contractors Village (1951 - 1953)
June 7, 2018

one (1) laboratory duplicate sample (CWT-TP39-BS1 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for PCBs are presented in Table F.6 in Appendix F.

PCBs were not detected in the soil samples analyzed.

Asbestos in Soil

Asbestos analysis was conducted on one (1) soil sample collected from the Former Contractors Village as part of the current investigation (CWT-SS65). Results of the laboratory analysis of the soil samples for asbestos are presented in Table F.7 in Appendix F.

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

5.3.1.2 Sediment Analytical Results

Petroleum Hydrocarbons in Sediment

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) sediment samples collected from the Former Contractors Village as part of the current investigation (CWT-SED4 and CWT-SED5). Also, one (1) laboratory duplicate sample (CWT-SED4 Lab-Dup) was analyzed. Results of the laboratory analysis of sediment samples for petroleum hydrocarbons are presented in Table F.8 in Appendix F.

TPH was detected in one (1) of the three (3) soil samples analyzed at a concentration of 1,400 mg/kg. The laboratory analytical reports indicated that product impacting the sample resembled the fuel and lube oil range. The concentrations of TPH in sample CWT-SED5 (1,400 mg/kg) exceeded the applicable Tier I ESL for the Protection of Freshwater Aquatic Life – typical sediment type, and fuel oil impacts of 25 mg/kg. TPH was not detected in the other sediment samples analyzed.

BTEX parameters were not detected in the sediment samples analyzed.

PAHs in Sediment

PAH analysis was conducted on two (2) sediment samples collected from the Former Contractors Village as part of the current investigation (CWT-SED4 and CWT-SED5). Results of the laboratory analysis of sediment samples for PAHs are presented in Table F.9 in Appendix F.

Various PAH parameters were detected in sediment sample CWT-SED5. None of the detected PAH parameters exceeded the applicable guidelines, where such guidelines exist.

Metals in Sediment

Metals analysis was conducted on two (2) sediment samples collected from the Former Contractors Village as part of the current investigation (CWT-SED4 and CWT-SED5). Results of the laboratory analysis of sediment samples for metals are presented in Table F.10 in Appendix F.

Concentrations of various metals were detected in both samples. The concentration of manganese in sediment sample CWT-SED4 (470 mg/kg) exceeded the applicable CCME PEL for Freshwater Sediment



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former Contractors Village (1951 - 1953)
June 7, 2018

of 460 mg/kg. None of the other detected concentrations of metals in sediment exceeded the applicable guidelines, where such guidelines exist.

PCBs in Sediment

PCB analysis was conducted on two (2) sediment samples collected from the Former Contractors Village as part of the current investigation (CWT-SED4 and CWT-SED5). Results of the laboratory analysis of sediment samples for PCBs are presented in Table F.11 in Appendix F.

PCBs were not detected in the sediment samples analyzed.

5.3.1.3 Surface Water Analytical Results

Petroleum Hydrocarbons in Surface Water

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on one (1) surface water sample collected from a pond to the northeast of the Former Contractors Village (CWT-SW5). Results of the laboratory analysis of surface water samples for petroleum hydrocarbons are presented in Table F.12 in Appendix F.

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

PAHs in Surface Water

PAH analysis was conducted on one (1) surface water sample collected from the Former Contractors Village as part of the current investigation (CWT-SW5). Results of the laboratory analysis of surface water samples for PAHs are presented in Table F.14 in Appendix F.

Phenanthrene was detected in surface water sample CWT-SW5 at a concentration below the applicable guidelines. No other PAH parameters were detected in surface water sample CWT-SW5.

Metals in Surface Water

Metals analysis was conducted on one (1) surface water sample collected from the Former Contractors Village as part of the current investigation (CWT-SW5). Results of the laboratory analysis of surface water samples for metals are presented in Table F.15 in Appendix F.

Concentrations of various metals were detected in surface water sample CWT-SW5. The following exceedances were observed:

- The concentration of aluminum in surface water samples CWT-SW5 (750 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 5 µg/L;
- The concentration of copper in surface water sample CWT-SW5 (2.7 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 2 µg/L;
- The concentration of iron in surface water samples CWT-SW5 (920 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 300 µg/L; and,
- The concentration of lead in surface water samples CWT-SW5 (2 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 1 µg/L.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former Contractors Village (1951 - 1953)
June 7, 2018

None of the remaining detected concentrations of metals in surface water exceeded the applicable CCME Water Quality Guidelines, where such guidelines exist.

PCBs in Surface Water

PCB analysis was conducted on one (1) surface water sample collected from the Former Contractors Village as part of the current investigation (CWT-SW5). Results of the laboratory analysis of surface water samples for PCBs are presented in Table F.16 in Appendix F.

PCBs were not detected in the surface water sample analyzed. There are no applicable guidelines for PCBs in surface water.

5.3.1.4 Vegetation Analytical Results

Metals in Vegetation

Metals analysis was conducted on one (1) vegetation sample collected from the Former Contractors Village as part of the current investigation (CWT-VEG12). Results of the laboratory analysis of vegetation samples for metals are presented in Table F.17 in Appendix F.

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

PCBs in Vegetation

PCB analysis was conducted on one (1) vegetation sample collected from the Former Contractors Village as part of the current investigation (CWT-VEG12). Results of the laboratory analysis of vegetation samples for PCBs are presented in Table F.18 in Appendix F.

PCBs were detected in vegetation sample CWT-VEG12 (0.33 µg/g). There are no applicable guidelines for PCBs in vegetation.

5.3.2 Summary of Exceedances

The Phase II ESA identified several COPCs in environmental media at the Former Contractors Village 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 Table 5.2, Table 5.3 and Table 5.4, respectively.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former Contractors Village (1951 - 1953)
June 7, 2018

Table 5.2 Soil Sample Exceedances – Former Contractors Village

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg) ^{1,2}
CWT-TP35-BS2	F2	490	260 (Tier I ESL, Table 1a)
CWT-TP41-BS2	F2	830	260 (Tier I ESL, Table 1a)
CWT-TP104-BS2 (Field Dup of CWT-TP36-BS2)	Naphthalene	0.21	0.013 (CCME SQG)
CWT-TP106-BS2 (Field Dup of CWT-TP35-BS2)	F2	330	260 (Tier I ESL, Table 1a)
Referenced Guidelines:			
¹ Atlantic Partnership in RBCA Tier I ESLs for the Protection of Plants and Soil Invertebrates, Table 1a (2012 and updates).			
² CCME SQGs for the Protection of Environmental and Human Health for Commercial land use (1999 and updates).			

Table 5.3 Sediment Sample Exceedances – Former Contractors Village

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg) ¹
CWT-SED5	TPH	1,400	25 (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 5.4 Surface Water Sample Exceedances – Former Contractors Village

Sample No.	Parameter	Conc. (µg/L)	Referenced Guidelines (µg/L)
CWT-SW5	Aluminum	750	5 (CCME WQG)
	Copper	2.7	2 (CCME WQG)
	Iron	920	300 (CCME WQG)
	Lead	2	1 (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 PHC, PAH, and metals impacts in soil, sediment, and surface water at the Former Contractors Village are shown on Drawing No. 121414915.300-EE-03 in Appendix A.



Main Complex
June 7, 2018

6.0 MAIN COMPLEX

6.1 Site Description

The Main Complex is located near the center of the Site on a topographic high and was the primary operational area of the Site during its operation. Site surfaces consist mainly of loose to compact brown sand and gravel, with thick vegetative coverage overlying bedrock. This location includes a gravel road, a former aboveground water pipeline, former ASTs in multiple locations, a burial area for construction debris, several former troposcatter communication antennas, a remediated PCB spill (1978/1980), multiple former buildings (barracks, power plant, motor pool, dispensary, operations, fire control, and recreation facilities), and a small pond west of the debris burial area. Locations of these features are shown in Drawing No. 121414915.300-EE-04 in Appendix A.

6.2 Description of Site Work

Field work at the Main Complex consisted of the excavation of 27 test pits with corresponding soil sampling, the collection of 29 surface soil samples, one (1) sediment sample with corresponding surface water sample, and ten vegetation samples. The sample locations and general site features are shown on Drawing No. 121414915.300-EE-04 in Appendix A.

The laboratory analysis schedule completed for Main Complex is presented in Table 6.1.

Table 6.1 Summary of Laboratory Work – Main Complex

Sample Locations	Sample Matrix		
	Soil/Sediment	Water	
<p><u>Soil:</u> CWT-SS13 to CWT-SS41 CWT-TP6 to CWT-TP32</p> <p><u>Sediment:</u> CWT-SED6</p> <p><u>Water:</u> CWT-SW6</p> <p><u>Vegetation:</u> CWT-VEG3, CWT-VEG4, CWT-VEG7, CWT-VEG8, CWT-VEG10, CWT- VEG11, CWT-BERRY3, CWT-BERRY4, CWT- BERRY7, CWT-BERRY8</p>	<p><u>Soil</u> TPH/BTEX (57), TPH Frac. (1), VOCs (9), PAHs (19), Metals (42), PCBs (36), Asbestos (6)</p> <p><u>Sediment</u> TPH/BTEX (1), PAHs (1), Metals (1), PCBs (1)</p>	<p><u>Surface Water</u> TPH/BTEX (1), General Chemistry (1), PAH (1), Metals (1), PCBs (1)</p>	<p><u>Vegetation</u> Metals (10), PCBs (10)</p>



Main Complex
June 7, 2018

6.3 Results

6.3.1 Laboratory Analytical Results

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

6.3.1.1 Soil Analytical Results

Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on fifty-seven soil sample collected from the Main Complex as part of the current investigation (CWT-SS14 to CWT-SS27, CWT-SS29 to CWT-SS34, CWT-SS36, CWT-SS38 to CWT-SS41, CWT-TP6-BS1, CWT-TP7-BS1, CWT-TP8-BS2, CWT-TP9-BS1, CWT-TP10-BS2, CWT-TP11-BS1, CWT-TP12-BS1, CWT-TP13-BS1, CWT-TP14-BS1, CWT-TP15-BS1, CWT-TP15-BS2, CWT-TP16-BS2, CWT-TP17-BS2, CWT-TP18-BS1, CWT-TP19-BS2, CWT-TP20-BS1, CWT-TP21-BS1, CWT-TP22-BS1, CWT-TP23-BS1, CWT-TP24-BS1, CWT-TP25-BS2, CWT-TP26-BS2, CWT-TP27-BS2, CWT-TP28-BS2, CWT-TP29-BS2, CWT-TP30-BS2, CWT-TP31-BS2, CWT-TP32-BS1, CWT-TP32-BS2, CWT-TP100-BS1 (field dup of CWT-TP18-BS1), CWT-TP102-BS1 (field dup of CWT-TP20-BS1), and CWT-TP103-BS2 (field dup of CWT-TP19-BS2)). Also, four (4) laboratory duplicate samples (CWT-SS15 Lab-Dup, CWT-SS34 Lab-Dup, CWT-TP6-BS1 Lab-Dup, and CWT-TP27-BS2 Lab-Dup) were analyzed. Results of the laboratory analysis of soil samples for petroleum hydrocarbons are presented in Table F.1 in Appendix F.

Petroleum hydrocarbon fractionation (TPH Fract./BTEX) was conducted on one (1) soil sample collected from the Main Complex as part of the current investigation (CWT-TP13-BS2). Results of the laboratory analysis of soil samples for petroleum hydrocarbon fractionation are presented in Table F.2 in Appendix F.

TPH was detected in 45 of the 62 soil samples analyzed at concentrations ranging from 20 mg/kg (CWT-TP32-BS1) to 27,000 mg/kg (CWT-SS34). The laboratory analytical reports indicated that products impacting the samples generally resembled fuel oil and/or lube oil. The concentrations of TPH in samples CWT-SS34 (27,000 mg/kg), CWT-TP13-BS1 (6,300 mg/kg), and CWT-TP13-BS2 (6,700 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. None of the remaining detected concentrations of TPH exceeded the applicable Tier I RBSLs.

Toluene was detected below the applicable Tier I RBSLs and ESLs in soil sample CWT-SS21. BTEX parameters were not detected in the other soil samples analyzed.

Concentrations of hydrocarbon fraction F2 and 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 sample CWT-SS34 (F2 = 1,000 mg/kg, F3 = 27,000 mg/kg), CWT-SS34 Lab-Dup (F2 = 1,000 mg/kg, F3 = 25,000 mg/kg), CWT-SS36 (F2 = 300 mg/kg), CWT-TP13-BS1 (F2 = 5,100 mg/kg), and CWT-TP13-BS2 (F2 = 5,271 mg/kg). Concentrations of hydrocarbon fraction F3 also exceeded the applicable Tier I ESLs



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Main Complex
June 7, 2018

for the Protection of Wildlife and Livestock (Table 1b) (16,000 mg/kg) in soil samples CWT-SS34 (27,000 mg/kg) and CWT-SS34 Lab-Dup (25,000 mg/kg).

VOCs in Soil

VOC analysis was conducted on nine (9) soil sample collected from the Main Complex as part of the current investigation (CWT-SS13, CWT-SS16, CWT-SS34, CWT-SS36, CWT-TP8-BS2, CWT-TP11-BS1, CWT-TP28-BS2, and CWT-TP30-BS2). Results of the laboratory analysis of soil samples for VOCs are presented in Table F.3 in Appendix F.

Tetrachloroethylene (PCE) was detected in soil sample CWT-SS16 at a concentration below the applicable guideline. Trichloroethylene (TCE) in soil sample CWT-TP8-BS2 (14 µg/kg) exceeded the applicable guideline of 10 µg/kg. No other VOC parameters were detected in the soil samples analyzed.

PAHs in Soil

PAH analysis was conducted on 19 soil sample collected from the Main Complex as part of the current investigation (CWT-SS13, CWT-SS20, CWT-SS23, CWT-SS32, CWT-SS35, CWT-SS37, CWT-TP7-BS1, CWT-TP8-BS2, CWT-TP11-BS1, CWT-TP15-BS2, CWT-TP17-BS1, CWT-TP19-BS1, CWT-TP22-BS1, CWT-TP25-BS2, CWT-TP26-BS1, CWT-TP28-BS1, CWT-TP28-BS1, CWT-TP30-BS1, CWT-TP31-BS1, and CWT-TP101-BS1 (field dup of CWT-TP26-BS1)). Also, one (1) laboratory duplicate sample (CWT-TP7-BS1 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for PAHs are presented in Table F.4 in Appendix F.

PAH parameters were detected in 11 of the 20 soil samples analyzed. 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 following exceedances were observed:

- The concentration of acenaphthene in soil samples CWT-TP15-BS2 (4 mg/kg) and CWT-TP30-BS1 (1.8 mg/kg) exceeded the CCME SQGs for a commercial site for the protection of environmental and human health of 0.28 mg/kg;
- The concentration of fluorene in soil samples CWT-TP15-BS2 (3.4 mg/kg) and CWT-TP30-BS1 (1.3 mg/kg) exceeded the CCME SQGs for a commercial site for the protection of environmental and human health of 0.25 mg/kg;
- The concentration of naphthalene in soil samples CWT-SS23 (0.017 mg/kg), CWT-TP15-BS2 (1.6 mg/kg), CWT-TP17-BS1 (0.067 mg/kg), CWT-TP25-BS2 (0.026 mg/kg), and CWT-TP30-BS1 (0.014 mg/kg) exceeded the CCME SQGs for a commercial site for the protection of environmental and human health of 0.013 mg/kg; and,
- The concentration of phenanthrene in soil samples CWT-SS13 (0.22 mg/kg), CWT-SS23 (0.34 mg/kg), CWT-TP11-BS1 (0.062 mg/kg), CWT-TP25-BS2 (0.57 mg/kg), and CWT-TP30-BS1 (4.3 mg/kg) exceeded the CCME SQGs for a commercial site for the protection of environmental and human health of 0.046 mg/kg.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Main Complex
June 7, 2018

Non-detected concentrations of naphthalene and phenanthrene in soil sample CWT-SS37 had RDLs exceeding the applicable CCME SQG due to matrix/co-extractive interference during laboratory analysis. Further delineation would be required to evaluate the likelihood of the presence of PAH parameters exceeding applicable guidelines in the area of soil sample CWT-SS37.

All 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 TPE in soil sample CWT-TP15-BS2 (10.41 mg/kg) exceeded the CCME SQG for a commercial site for the protection of environmental and human health of 5.3 mg/kg. The calculated B[a]P TPEs for all other soil samples analyzed were below the applicable CCME SQG (all land uses).

Metals in Soil

Metals analysis was conducted on 39 soil samples collected from the Main Complex as part of the current investigation (CWT-SS13, CWT-SS14, CWT-SS16, CWT-SS18, CWT-SS20, CWT-SS22, CWT-SS24, CWT-SS26, CWT-SS28, CWT-SS30 to CWT-SS32, CWT-SS34 to CWT-SS37, CWT-SS41, CWT-TP6-BS1, CWT-TP8-BS2, CWT-TP10-BS1, CWT-TP11-BS1, CWT-TP14-BS1, CWT-TP15-BS1, CWT-TP16-BS1, CWT-TP18-BS1, CWT-TP20-BS1, CWT-TP21-BS1, CWT-TP23-BS1, CWT-TP24-BS1, CWT-TP25-BS1, CWT-TP26-BS1, CWT-TP27-BS2, CWT-TP28-BS1, CWT-TP29-BS2, CWT-TP30-BS1, CWT-TP31-BS2, CWT-TP100-BS1 (field dup of CWT-TP18-BS1), CWT-TP101-BS1 (field dup of CWT-TP26-BS1), and CWT-TP102-BS1 (field dup of CWT-TP20-BS1)). Also, three (3) laboratory duplicate samples (CWT-SS14 Lab-Dup, CWT-SS14 Lab-Dup2, and CWT-SS32 Lab-Dup) were analyzed. Results of the laboratory analysis of soil samples for metals are presented in Table F.5 in Appendix F.

Concentrations of various metals were detected in all 42 samples. The following exceedances were observed:

- The concentrations of cadmium in soil sample CWT-SS32 (49 mg/kg) and CWT-SS32 Lab-Dup (52 mg/kg) exceeded the CCME commercial SQG of 22 mg/kg; and,
- The concentrations of zinc in soil samples CWT-SS16 (750 mg/kg), CWT-SS32 (1,400 mg/kg), CWT-SS32 Lab-Dup (1,300 mg/kg), and CWT-TP25-BS1 (570 mg/kg) exceeded the CCME commercial SQG of 360 mg/kg.

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

PCBs in Soil

PCB analysis was conducted on 36 soil samples collected from the Main Complex as part of the current investigation (CWT-SS15, CWT-SS17, CWT-SS19, CWT-SS21, CWT-SS23, CWT-SS25, CWT-SS27, CWT-SS29, CWT-SS31, CWT-SS33, CWT-SS34, CWT-SS36, CWT-TP6-BS1, CWT-TP8-BS2, CWT-TP9-BS1, CWT-TP10-BS1, CWT-TP12-BS1, CWT-TP13-BS2, CWT-TP15-BS1, CWT-TP16-BS1, CWT-TP17-BS1, CWT-TP18-BS1, CWT-TP20-BS1, CWT-TP21-BS1, CWT-TP23-BS1, CWT-TP25-BS1, CWT-TP26-BS1, CWT-TP27-BS1, CWT-TP27-BS1, CWT-TP28-BS1, CWT-TP29-BS1, CWT-TP30-BS1, CWT-TP31-BS1, CWT-TP100-BS1 (field dup of CWT-TP18-BS1), CWT-TP101-BS1 (field dup of CWT-TP26-BS1), CWT-TP102-BS1 (field dup of CWT-TP20-BS1), and CWT-TP110-BS2 (field dup of CWT-TP13-BS2)). Also, two (2) laboratory duplicate samples (CWT-SS15 Lab-Dup and CWT-TP6-BS1 Lab-Dup) were



Main Complex
June 7, 2018

analyzed. Results of the laboratory analysis of soil samples for PCBs are presented in Table F.6 in Appendix F.

PCBs were detected in 20 of the 38 samples analyzed. None of the detected concentrations of PCBs in soil exceeded the applicable guideline in the samples analyzed.

Asbestos in Soil

Asbestos analysis was conducted on six (6) soil samples collected from the Main Complex as part of the current investigation (CWT-SS13, CWT-SS28, CWT-SS35, CWT-SS37, CWT-TP27-BS1, and CWT-TP29-BS1). Results of the laboratory analysis of the soil samples for asbestos are presented in Table F.7 in Appendix F.

Asbestos was detected in soil sample CWT-SS13 (<1% chrysotile). There are no applicable guidelines for asbestos in soil.

6.3.1.2 Sediment Analytical Results

Petroleum Hydrocarbons in Sediment

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on one (1) sediment sample collected from the Main Complex as part of the current investigation (CWT-SED6). Results of the laboratory analysis of sediment samples for petroleum hydrocarbons are presented in Table F.8 in Appendix F.

TPH was detected below the applicable guideline in sediment sample CWT-SED6.

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 Main Complex as part of the current investigation (CWT-SED6). Results of the laboratory analysis of sediment samples for PAHs are presented in Table F.9 in Appendix F.

Concentrations of various PAH parameters were detected the sample. None of the detected concentrations of PAH parameters in sediment exceeded the applicable guidelines, where such guidelines exist.

Metals in Sediment

Metals analysis was conducted on one (1) sediment sample collected from the Main Complex as part of the current investigation (CWT-SED6). Results of the laboratory analysis of sediment samples for metals are presented in Table F.10 in Appendix F.

Concentrations of various metals were detected the sample. None of the detected concentrations of metals in sediment exceeded the applicable guidelines, where such guidelines exist.



Main Complex
June 7, 2018

PCBs in Sediment

PCB analysis was conducted on one (1) sediment sample collected from the Main Complex as part of the current investigation (CWT-SED6). Results of the laboratory analysis of sediment samples for PCBs are presented in Table F.11 in Appendix F.

PCBs were detected below the applicable guideline in the sediment sample CWT-SED6.

6.3.1.3 Surface Water Analytical Results

Petroleum Hydrocarbons in Surface Water

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on one (1) surface water sample collected from a small pond at the Main Complex as part of the current investigation (CWT-SW6). Results of the laboratory analysis of surface water samples for petroleum hydrocarbons are presented in Table F.12 in Appendix F.

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 Main Complex as part of the current investigation (CWT-SW6). Also, one (1) laboratory duplicate sample (CWT-SW6 Lab-Dup) was analyzed. Results of the laboratory analysis of surface water samples for general chemistry are presented in Table F.13 in Appendix F.

None of the detected concentrations of general chemistry parameters in surface water exceeded the applicable guidelines, where such guidelines exist.

PAHs in Surface Water

PAH analysis was conducted on one (1) surface water sample collected from the Main Complex as part of the current investigation (CWT-SW6). Results of the laboratory analysis of surface water samples for PAHs are presented in Table F.14 in Appendix F.

Various PAH parameters were detected in the sample. None of the detected concentrations of PAHs in surface water exceeded the applicable guidelines, where such guidelines exist.

Metals in Surface Water

Metals analysis was conducted on one (1) surface water sample collected from the Main Complex as part of the current investigation (CWT-SW6). Results of the laboratory analysis of surface water samples for metals are presented in Table F.15 in Appendix F.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Main Complex
June 7, 2018

Concentrations of various metals were detected in the sample. The following exceedances were observed:

- The concentrations of aluminum in surface water sample CWT-SW6 (3,200 µg/L) exceeded the CCME Water Quality Guideline for the Protection of Freshwater Aquatic Life of 5 µg/L;
- The concentrations of cadmium in surface water sample CWT-SW6 (0.18 µg/L) exceeded the CCME Water Quality Guideline for the Protection of Freshwater Aquatic Life of 0.08 µg/L;
- The concentrations of copper in surface water sample CWT-SW6 (8.2 µg/L) exceeded the CCME Water Quality Guideline for the Protection of Freshwater Aquatic Life of 2 µg/L;
- The concentrations of iron in surface water sample CWT-SW6 (13,000 µg/L) exceeded the CCME Water Quality Guideline for the Protection of Freshwater Aquatic Life of 300 µg/L; and,
- The concentrations of lead in surface water sample CWT-SW6 (3 µg/L) exceeded the CCME Water Quality Guideline for the Protection of Freshwater Aquatic Life of 1 µg/L.

None of the remaining detected concentrations of metals in surface water exceeded the applicable CCME Water Quality Guidelines, where such guidelines exist.

PCBs in Surface Water

PCB analysis was conducted on one (1) surface water sample collected from the Main Complex as part of the current investigation (CWT-SW6). Also, one (1) laboratory duplicate sample (CWT-SW6 Lab-Dup) was analyzed. Results of the laboratory analysis of surface water samples for PCBs are presented in Table F.16 in Appendix F.

PCBs were not detected in the surface water samples analyzed. There are no applicable guidelines for PCBs in surface water.

6.3.1.4 Vegetation Analytical Results

Metals in Vegetation

Metals analysis was conducted on 10 vegetation samples collected from the Main Complex as part of the current investigation (CWT-VEG3, CWT-VEG4, CWT-VEG7, CWT-VEG8, CWT-VEG10, CWT-VEG11, CWT-BERRY3, CWT-BERRY4, CWT-BERRY7, and CWT-BERRY8). Also, one (1) laboratory duplicate sample (CWT-VEG7 Lab-Dup) was analyzed. Results of the laboratory analysis of vegetation samples for metals are presented in Table F.17 in Appendix F.

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 10 vegetation samples collected from the Main Complex as part of the current investigation (CWT-VEG3, CWT-VEG4, CWT-VEG7, CWT-VEG8, CWT-VEG10, CWT-VEG11, CWT-BERRY3, CWT-BERRY4, CWT-BERRY7, and CWT-BERRY8). Results of the laboratory analysis of vegetation samples for PCBs are presented in Table F.18 in Appendix F.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Main Complex
June 7, 2018

PCBs were detected in vegetation samples CWT-VEG3 (0.51 µg/g), CWT-VEG4 (0.13 µg/g), CWT-VEG7 (0.11 µg/g), CWT-VEG8 (0.15 µg/g), CWT-VEG10 (0.075 µg/g), and CWT-VEG11 (0.069 µg/g). There are no applicable guidelines for PCBs in vegetation.

6.3.2 Summary of Exceedances

The Phase II ESA identified several COPC in environmental media at the Main Complex with concentrations exceeding the applicable criteria-based guidelines for a commercial site, where such guidelines exist. The exceedances recorded in soil and surface water during the current investigation are summarized in Table 6.2 and Table 6.3 respectively. Where an individual parameter exceeds more than one guideline, only the most conservative guideline is shown as the referenced guideline.

Table 6.2 Soil Sample Exceedances – Main Complex

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg) ^{1,2,3}
CWT-SS13	Phenanthrene	0.22	0.046 (CCME SQG)
CWT-SS16	Zinc	750	360 (CCME SQG)
CWT-SS23	Naphthalene Phenanthrene	0.017 0.34	0.013 (CCME SQG) 0.046 (CCME SQG)
CWT-SS32	Cadmium Zinc	49 1,400	22 (CCME SQG) 360 (CCME SQG)
CWT-SS32 Lab-Dup	Cadmium Zinc	52 1,300	22 (CCME SQG) 360 (CCME SQG)
CWT-SS34	TPH F2 F3	27,000 1,000 27,000	4,000 (Tier I RBSL, Table 4a) 260 (Tier I ESL, Table 1a) 1,700 (Tier I ESL, Table 1a)
CWT-SS34 Lab-Dup	F2 F3	1,000 25,000	260 (Tier I ESL, Table 1a) 1,700 (Tier I ESL, Table 1a)
CWT-SS36	F2	300	260 (Tier I ESL, Table 1a)
CWT-TP8-BS2	Trichloroethylene	0.014	0.01 (CCME SQG)
CWT-TP11-BS1	Phenanthrene	0.062	0.046 (CCME SQG)
CWT-TP13-BS1	TPH F2	6,300 5,100	4,000 (Tier I RBSL, Table 4a) 260 (Tier I ESL, Table 1a)
CWT-TP13-BS2	TPH F2	6,700 5,271	4,000 (Tier I RBSL, Table 4a) 260 (Tier I ESL, Table 1a)
CWT-TP15-BS2	Acenaphthene Fluorene Naphthalene B(a)P TPE	4 3.4 1.6 10.41	0.28 (CCME SQG) 0.25 (CCME SQG) 0.013 (CCME SQG) 5.3 (CCME SQG)
CWT-TP17-BS1	Naphthalene	0.067	0.013 (CCME SQG)
CWT-TP25-BS2	Naphthalene Phenanthrene Zinc	0.026 0.57 570	0.013 (CCME SQG) 0.046 (CCME SQG) 360 (CCME SQG)



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Main Complex
June 7, 2018

Table 6.2 Soil Sample Exceedances – Main Complex

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg) ^{1,2,3}
CWT-TP30-BS1	Acenaphthene	1.8	0.28 (CCME SQG)
	Fluorene	1.3	0.25 (CCME SQG)
	Naphthalene	0.014	0.013 (CCME SQG)
	Phenanthrene	4.3	0.046 (CCME SQG)
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 RBSLs for a commercial site with non-potable groundwater, coarse grained soil, and gasoline/fuel oil/lube oil impacts, Table 4a (2012 and updates).			
³ Atlantic Partnership in RBCA Tier I ESLs for the Protection of Plants and Soil Invertebrates, Table 1a (2012 and updates).			

Table 6.3 Surface Water Sample Exceedances – Main Complex

Sample No.	Parameter	Conc. (µg/L)	Referenced Guidelines (µg/L) ¹
CWT-SW6	Aluminum	3,200	100 (CCME WQG)
	Cadmium	0.18	0.08 (CCME WQG)
	Copper	8.2	2 (CCME WQG)
	Iron	13,000	300 (CCME WQG)
	Lead	3	1 (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 PHC, PAH, and metals impacts in soil and surface water at the Main Complex are shown on Drawing No. 121414915.300-EE-04 in Appendix A.



Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

7.0 FORMER USAF DUMP AREA AND FORMER AMMUNITION STORAGE AREA

7.1 Site Description

The Former USAF Dump Area and Former Ammunition Storage Area is located approximately 300 m to the southeast of the Main Complex. Site surfaces consist mainly of loose to compact brown sand and gravel, with thick vegetative coverage overlying bedrock. During site operations, this area acted as a landfill for the entire Site and also contained an ammunition storage facility at the end of the gravel access road. In 1987, a PCB remediation program was carried out in the dump area. It was reported that approximately 306 m³ of PCB-impacted soil was removed from the site in drums. No analytical results were available for the remediation program. Areas of interest at this location include the gravel access road, former USAF dump area, former ammunition storage building, the area of PCB cleanup in 1987, and two (2) small ponds. Locations of these features are shown in Drawing No. 121414915.300-EE-05 in Appendix A.

7.2 Description of Site Work

Field work at the Former USAF Dump Area and Former Ammunition Storage Area consisted of the excavation of five (5) test pits with corresponding soil sampling, the collection of 13 surface soil samples, the collection of two (2) sediment samples with corresponding surface water samples, and two (2) vegetation samples. The sample locations and general site features are shown on Drawing No. 121414915.300-EE-05 in Appendix A.

The laboratory analysis schedule completed for the Former USAF Dump Area and Former Ammunition Storage Area is presented in Table 7.1.

Table 7.1 Summary of Laboratory Work – Former USAF Dump Area and Former Ammunition Storage Area

Sample Locations	Sample Matrix		
	Soil/Sediment	Water	Vegetation
<p><u>Soil:</u> CWT-SS1 to CWT-SS12 CWT-SS70 CWT-TP1 to CWT-TP5</p> <p><u>Sediment:</u> CWT-SED7 and CWT-SED8</p> <p><u>Water:</u> CWT-SW7 and CWT-SW8</p> <p><u>Vegetation:</u> CWT-VEG1 and CWT-VEG2</p>	<p><u>Soil</u> TPH/BTEX (15), TPH Frac. (1), VOCs (2), PAHs (4), Metals (15), PCBs (13), Asbestos (2)</p> <p><u>Sediment</u> TPH/BTEX (2), PAHs (2), Metals (2), PCBs (2)</p>	<p><u>Surface Water</u> TPH/BTEX (2), General Chemistry (2), PAH (2), Metals (2), PCBs (2)</p>	<p><u>Vegetation</u> Metals (2), PCBs (2)</p>



Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

7.3 Results

7.3.1 Laboratory Analytical Results

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

7.3.1.1 Soil Analytical Results

Petroleum Hydrocarbons in Soil

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on 15 soil samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SS1 to CWT-SS5, CWT-SS7, CWT-SS9 to CWT-SS12, CWT-SS70 (field dup of CWT-SS7), CWT-TP1-BS1, CWT-TP3-BS2, CWT-TP4-BS1, and CWT-TP5-BS2). Also, three (3) laboratory duplicate samples (CWT-SS1 Lab-Dup, CWT-SS7 Lab-Dup, and CWT-SS12 Lab-Dup) were analyzed. Results of the laboratory analysis of soil samples for petroleum hydrocarbons are presented in Table F.1 in Appendix F.

Petroleum hydrocarbon fractionation (TPH Fract./BTEX) was conducted on one (1) soil sample collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-TP2-BS2). Results of the laboratory analysis of soil samples for petroleum hydrocarbon fractionation are presented in Table F.2 in Appendix F.

TPH was detected in 10 of the 19 soil samples analyzed at concentrations ranging from 20 mg/kg (CWT-SS3) to 6,500 mg/kg (CWT-SS2). The laboratory analytical reports indicated that products impacting the samples generally resembled the lube oil range. Products in samples CWT-SS1, CWT-SS2, CWT-SS10, and CWT-TP2-BS2 also resembled the fuel oil fraction. The concentrations of TPH in sample CWT-SS2 (6,500 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. None of the remaining detected concentrations of TPH exceeded the applicable Tier I RBSLs.

BTEX parameters were not detected in the soil samples analyzed.

Concentrations of hydrocarbon fraction F3 exceeded the applicable Tier I ESLs for the Protection of Plants and Soil Invertebrates (Table 1a) (1,700 mg/kg) in soil sample CWT-SS2 (6,380 mg/kg).

VOCs in Soil

VOC analysis was conducted on two (2) soil samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SS11 and CWT-TP5-BS2). Results of the laboratory analysis of soil samples for VOCs are presented in Table F.3 in Appendix F.

VOCs were not detected in the soil samples analyzed.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

PAHs in Soil

PAH analysis was conducted on four (4) soil samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SS8, CWT-SS10, CWT-TP2-BS2, and CWT-TP5-BS2). Results of the laboratory analysis of soil samples for PAHs are presented in Table F.4 in Appendix F.

Various PAH parameters were detected in three (3) of the four (4) soil samples analyzed. 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.

Concentrations of naphthalene in soil samples CWT-TP2-BS2 (0.015 mg/kg) and CWT-TP5-BS2 (0.054 mg/kg) exceeded the applicable CCME SQGs for a commercial site for the protection of environmental and human health of 0.013 mg/kg. The concentration of phenanthrene in soil sample CWT-TP5-BS2 (0.052 mg/kg) exceeded the applicable CCME SQGs for a commercial site for the protection of environmental and human health of 0.046 mg/kg.

All 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).

Metals in Soil

Metals analysis was conducted on 15 soil samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SS1 to CWT-SS4, CWT-SS7, CWT-SS8, CWT-SS10 to CWT-SS12, CWT-SS70 (field dup of CWT-SS7), CWT-TP1-BS1, CWT-TP2-BS2, CWT-TP3-BS2, CWT-TP4-BS1, and CWT-TP5-BS2). Also, one (1) laboratory duplicate sample (CWT-TP4-BS1 Lab-Dup) was analyzed. Results of the laboratory analysis of soil samples for metals are presented in Table F.5 in Appendix F.

Concentrations of various metals were detected in all 16 samples. Concentrations of zinc in soil samples CWT-SS8 (380 mg/kg) and CWT-TP3-BS2 (1,800 mg/kg) exceeded the applicable CCME SQGs for a commercial site for the protection of environmental and human health of 360 mg/kg.

PCBs in Soil

PCB analysis was conducted on 13 soil samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SS5 to CWT-SS7, CWT-SS9 to CWT-SS12, CWT-SS70 (field dup of CWT-SS7), CWT-TP1-BS1, CWT-TP2-BS2, CWT-TP3-BS2, CWT-TP4-BS1, and CWT-TP5-BS2). Results of the laboratory analysis of soil samples for PCBs are presented in Table F.6 in Appendix F.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

PCBs were detected in 10 of the 13 soil samples analyzed at concentrations ranging from 0.071 µg/g (CWT-SS12) to 24 µg/g (CWT-TP3-BS2). None of the detected concentrations of PCBs in soil exceeded the applicable CCME SQGs for a commercial site of 33 µg/g.

Asbestos in Soil

Asbestos analysis was conducted on two (2) soil samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SS8 and CWT-TP2-BS2). Results of the laboratory analysis of the soil samples for asbestos are presented in Table F.7 in Appendix F.

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

7.3.1.2 Sediment Analytical Results

Petroleum Hydrocarbons in Sediment

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) sediment samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SED7 and CWT-SED8). Results of the laboratory analysis of sediment samples for petroleum hydrocarbons are presented in Table F.8 in Appendix F.

TPH was detected in both sediment samples. The laboratory analytical reports indicated that product impacting the samples resembled the lube oil range. The concentrations of TPH in samples CWT-SED7 (140 mg/kg) and CWT-SED8 (590 mg/kg) 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 was detected below the applicable Tier I ESL in sediment sample CWT-SED7. Other BTEX parameters were not detected in the sediment samples analyzed.

PAHs in Sediment

PAH analysis was conducted on two (2) sediment samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SED7 and CWT-SED8). Results of the laboratory analysis of sediment samples for PAHs are presented in Table F.9 in Appendix F.

Chrysene was detected in both sediment samples analyzed. Concentrations of chrysene in sediment sample CWT-SED8 (12 mg/kg) exceeded the applicable CCME PEL for freshwater sediment of 0.862 mg/kg.

Metals in Sediment

Metals analysis was conducted on two (2) sediment samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SED7 and CWT-SED8). Results of the laboratory analysis of sediment samples for metals are presented in Table F.10 in Appendix F.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

Concentrations of various metals were detected in both samples. None of the detected concentrations of metals in sediment exceeded the applicable guidelines, where such guidelines exist.

PCBs in Sediment

PCB analysis was conducted on two (2) sediment samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SED7 and CWT-SED8). Results of the laboratory analysis of sediment samples for PCBs are presented in Table F.11 in Appendix F.

PCBs were not detected in the sediment samples analyzed.

7.3.1.3 Surface Water Analytical Results

Petroleum Hydrocarbons in Surface Water

Petroleum hydrocarbon (TPH/BTEX) analysis was conducted on two (2) surface water samples collected from ponds at the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SW7 and CWT-SW8). Results of the laboratory analysis of surface water samples for petroleum hydrocarbons are presented in Table F.12 in Appendix F.

TPH was detected in one (1) of the two (2) surface water samples analyzed at a concentration of 0.11 mg/L. The laboratory analytical reports indicated that product impacting the sample resembled the lube oil range. The concentrations of TPH in sample CWT-SW8 (0.11 mg/L) exceeded the applicable Tier I ESL for the Protection of Freshwater Aquatic Life Surface Water guideline for lube oil impacts of 0.1 mg/L. TPH was not detected in the other surface water sample analyzed.

BTEX parameters were detected 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 Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SW7 and CWT-SW8). Also, one (1) laboratory duplicate sample (CWT-SW8 Lab-Dup) was analyzed. Results of the laboratory analysis of surface water samples for general chemistry are presented in Table F.13 in Appendix F.

pH measured in surface water samples CWT-SW7 (5.83) and CWT-SW8 (4.35) both fall outside the applicable guideline of 6.5 to 9.0.

None of the other detected concentrations of general chemistry parameters in surface water exceeded the applicable guidelines, where such guidelines exist.

PAHs in Surface Water

PAH analysis was conducted on two (2) surface water samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SW7 and CWT-SW8).



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

Results of the laboratory analysis of surface water samples for PAHs are presented in Table F.14 in Appendix F.

Various PAH parameters were detected in both surface water samples analyzed. None of the detected concentrations of PAH parameters exceeded the applicable guidelines, where such guidelines exist.

Metals in Surface Water

Metals analysis was conducted on two (2) surface water samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SW7 and CWT-SW8). Results of the laboratory analysis of surface water samples for metals are presented in Table F.15 in Appendix F.

Concentrations of various metals were detected in both samples. The following exceedances were observed:

- The concentration of aluminum in surface water samples CWT-SW7 (410 µg/L) and CWT-SW8 (290 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 5 µg/L;
- The concentration of iron in surface water samples CWT-SW7 (1,000 µg/L) and CWT-SW8 (640 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 300 µg/L; and,
- The concentration of lead in surface water sample CWT-SW8 (2.9 µg/L) exceeded the CCME WQG for the Protection of Freshwater Aquatic Life of 1 µg/L.

None of the remaining detected concentrations of metals in surface water exceeded the applicable CCME Water Quality Guidelines, where such guidelines exist.

PCBs in Surface Water

PCB analysis was conducted on two (2) surface water samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-SW7 and CWT-SW8). Results of the laboratory analysis of surface water samples for PCBs are presented in Table F.16 in Appendix F.

PCBs were not detected in the surface water samples analyzed. There are no applicable guidelines for PCBs in surface water.

7.3.1.4 Vegetation Analytical Results

Metals in Vegetation

Metals analysis was conducted on two (2) vegetation samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-VEG1 and CWT-VEG2). Results of the laboratory analysis of vegetation samples for metals are presented in Table F.17 in Appendix F.

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



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

PCBs in Vegetation

PCB analysis was conducted on two (2) vegetation samples collected from the Former USAF Dump Area and Former Ammunition Storage Area as part of the current investigation (CWT-VEG1 and CWT-VEG2). Results of the laboratory analysis of vegetation samples for PCBs are presented in Table F.18 in Appendix F.

PCBs were detected in vegetation samples CWT-VEG1 (0.088 µg/g) and CWT-VEG2 (0.2 µg/g). There are no applicable guidelines for PCBs in vegetation.

7.3.2 Summary of Exceedances

The Phase II ESA identified several COPCs in environmental media at the Former USAF Dump Area and Former Ammunition Storage Area 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 Table 7.2, Table 7.3, and Table 7.4, respectively.

Table 7.2 Soil Sample Exceedances – Former USAF Dump Area and Former Ammunition Storage Area

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg) ^{1,2,3}
CWT-SS2	TPH	6,500	4,000 (Tier I RBSL, Table 4a)
	F3	6,380	1,700 (Tier I ESL, Table 1a)
CWT-SS8	Zinc	380	360 (CCME SQG)
CWT-TP2-BS2	Naphthalene	0.015	0.013 (CCME SQG)
CWT-TP3-BS2	Zinc	1,800	360 (CCME SQG)
CWT-TP5-BS2	Naphthalene	0.054	0.013 (CCME SQG)
	Phenanthrene	0.052	0.046 (CCME SQG)
Referenced Guidelines:			
¹ Atlantic Partnership in RBCA Tier I RBSLs for a commercial site with non-potable groundwater, coarse grained soil, and gasoline/fuel oil/lube oil impacts, Table 4a (2012 and updates).			
² Atlantic Partnership in RBCA Tier I ESLs for the Protection of Plants and Soil Invertebrates, Table 1a (2012 and updates).			
³ CCME SQGs for the Protection of Environmental and Human Health for Commercial land use (1999 and updates).			

Table 7.3 Sediment Sample Exceedances – Former USAF Dump Area and Former Ammunition Storage Area

Sample No.	Parameter	Conc. (mg/kg)	Referenced Guidelines (mg/kg) ^{1,2}
CWT-SED7	TPH	140	43 (Tier I ESL, Table 4)
CWT-SED8	TPH	590	43 (Tier I ESL, Table 4)
	Chrysene	12	0.862 (CCME PEL)
Referenced Guidelines:			
¹ Atlantic Partnership in RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life – Typical sediment type for lube oil, Table 4 (July 2012, January 2015).			
² 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).			



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Former USAF Dump Area and Former Ammunition Storage Area
June 7, 2018

Table 7.4 Surface Water Sample Exceedances – Former USAF Dump Area and Former Ammunition Storage Area

Sample No.	Parameter	Conc. (µg/L)	Referenced Guidelines (µg/L) ^{1,2,3}
CWT-SW7	Aluminum	410	5 (CCME WQG)
	Iron	1,000	300 (CCME WQG)
CWT-SW8	TPH	0.11 (mg/L)	0.1 (mg/L) (Tier I ESL, Table 3a)
	Aluminum	290	5 (CCME WQG)
	Iron	640	300 (CCME WQG)
	Lead	2.9	1 (CCME WQG)
Referenced Guidelines:			
¹ Alberta Environmental Quality Guidelines for Surface Waters (2014).			
² Canadian Council of Ministers of the Environment (CCME) WQGs for the Protection of Freshwater Aquatic Life (1999 and updates).			
³ Atlantic Partnership in RBCA Tier I ESLs for the Protection of Freshwater and Marine Aquatic Life, Table 3a (2012 and updates).			

The locations of PHC, pH, PAH, and metals impacts in soil, sediment, and surface water at the Former USAF Dump Area and Former Ammunition Storage Area are shown on Drawing No. 121414915.300-EE-05 in Appendix A.



Summary of Exceedances
June 7, 2018

8.0 SUMMARY OF EXCEEDANCES

The Phase II ESA identified several COPCs in environmental media at the Site 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, and areas of impacted surface water were estimated. The following assumptions were made when calculating volume and area estimates:

- Estimated areas of impacted material (m^2) were taken from Drawings No. 121414915.300-EE-02 to 121414915.300-EE-06 in Appendix A. Given the total areal extent of the site, sample density is not high enough to delineate between sampling locations. Further delineation would be required to refine these areas. For initial estimations, an impacted radius of 5 m was assumed for individual areas of exceedances;
- The depth of impacted soil at the Site extends to the groundwater table or to bedrock, whichever is encountered first. For current estimations, the average depth to groundwater and/or bedrock for each area of the Site is determined with the Test Pit Records. The following depths were used for each site: Former U.S. Military Cartwright Site – General Area (1.5 m), Former Contractors Village (1.1 m), Main Complex (1.0 m), and Former USAF Dump Area and Former Ammunition Storage Area (0.5 m);
- The depth of impacts in sediment was assumed to be 0.15 m; and,
- Where impacts were identified in small ponds (surface water or sediment), the entire area of the pond was assumed to be impacted. The pond in the Former U.S. Military Cartwright Site – General Area was not included in impacted area estimates due to its size. Areas were estimated based on site imagery.

The estimated volumes (m^3) of impacted soil and sediment and areas (m^2) of impacted surface water identified at the Site as part of the current investigation are summarized in Table 8.1.

Impacted areas that overlap two or more COPCs have volumes listed for each individual COPC in Table 8.1 but are only counted once for the total volume and area estimates.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Summary of Exceedances
June 7, 2018

Table 8.1 Volume Estimates

COPC	Media	Area ID	Impacted Samples	Impacted Material	
Petroleum Hydrocarbons	Soil	Former Contractors Village	CWT-TP35-BS2, CWT-TP41-BS2	158 m ³	
		Main Complex	CWT-SS34, CWT-SS36, CWT-TP13-BS1	237 m ³	
		Former USAF Dump Area and Former Ammunition Storage Area	CWT-SS2	39 m ³	
	Sediment	Former Contractors Village	CWT-SED5	3 m ³	
		Former USAF Dump Area and Former Ammunition Storage Area	CWT-SED7, CWT-SED8	150 m ³	
	Surface Water	Former USAF Dump Area and Former Ammunition Storage Area	CWT-SW7	400 m ²	
VOCs	Soil	Main Complex	CWT-TP8-BS2	79 m ³	
PAHs	Soil	Former Contractors Village	CWT-TP36-BS2	79 m ³	
		Main Complex	CWT-SS13, CWT-SS23, CWT-TP11-BS1, CWT-TP15-BS2, CWT-TP17-BS1, CWT-TP25-BS2, CWT-TP30-BS1	550 m ³	
		Former USAF Dump Area and Former Ammunition Storage Area	CWT-TP2-BS2, CWT-TP5-BS2	79 m ³	
	Sediment	Former USAF Dump Area and Former Ammunition Storage Area	CWT-SED8	90 m ³	
Metals	Soil	Main Complex	CWT-SS16, CWT-SS32, CWT-TP25-BS1	237 m ³	
		Former USAF Dump Area and Former Ammunition Storage Area	CWT-SS8, CWT-TP3-BS2	79 m ³	
	Surface Water	Sediment	Former Contractors Village	CWT-SED4	12 m ³
		Former U.S. Military Cartwright Site – General Area	Former Contractors Village	CWT-SW2, CWT-SW3	Unknown+
			Former Contractors Village	CWT-SW5	20 m ²
			Main Complex	CWT-SW6	20 m ²
			Former USAF Dump Area and Former Ammunition Storage Area	CWT-SW7, CWT-SW8	1,000 m ²
Totals			Soil / Sediment	1,731 m^{3*}	
			Surface Water	1,020 m^{2*}	
Notes:					
*Overlapping COPCs are only counted once					
+Areal extent of surface water impacts was not calculated for the pond at the Former U.S. Military Cartwright Site – General Area or the stream connecting Larks Harbour Pond to Sandwich Bay – further delineation is required					



9.0 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 9.1.

Table 9.1 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 site obtained a NCSCS score of 76.0. Based on this score the site is classified as Class 1, indicating a high priority for action. The detailed NCSCS evaluation form is presented in Appendix H.

10.0 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. Stratigraphy at the Site consists generally of localized areas of reworked till overlying glacial till or directly overlying bedrock. Reworked material was comprised of loose to compact brown sand with occasional trace organics, gravel, and debris (concrete, metal, wood, glass, and plastic) and generally ranged in thickness from 0.3 m to greater than 1.8 m, which was the maximum depth of excavation during the current investigation.
2. Concentrations of PCBs and asbestos in environmental media were either non-detect or were detected at concentrations below the applicable guidelines in the samples analyzed.
3. Concentrations of TPH in select soil, 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:
 - a. Petroleum hydrocarbon impacts were identified in surface 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 Former Contractors Village (158 m³), Main Complex (237 m³), and Former USAF Dump Area and Former Ammunition Storage Area (39 m³).
 - b. Petroleum hydrocarbon impacts were identified in freshwater and marine sediment in exceedance of the applicable RBCA Tier I Sediment ESLs for the Protection of Freshwater and Marine Aquatic Life (Typical sediment) at the Former Contractors Village (3 m³) and Former USAF Dump Area and Former Ammunition Storage Area (150 m³).
 - c. Petroleum hydrocarbon impacts were identified in surface water in exceedance of the applicable RBCA Tier I ESLs (freshwater and marine aquatic life) for fuel oil/lube oil impacts at the Former USAF Dump Area and Former Ammunition Storage Area (400 m²).
4. Concentrations of VOCs in select soil samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows:
 - a. VOC impacts were identified in soil in exceedance of the applicable CCME SQGs for the Protection of Environmental and Human Health for Commercial land use at the Main Complex (79 m³).
5. Concentrations of PAHs in select soil and sediment samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows:
 - a. PAH impacts were identified in soil in exceedance of the applicable CCME SQGs for the Protection of Environmental and Human Health for Commercial land use at the Former Contractors Village (79 m³), Main Complex (550 m³), and Former USAF Dump Area and Former Ammunition Storage Area (79 m³).
 - b. PAH impacts were identified in freshwater sediment in exceedance of the applicable CCME PEL for Freshwater Sediment at the Former USAF Dump Area and Former Ammunition Storage Area (90 m³).

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

Conclusions and Recommendations
June 7, 2018

6. Concentrations of Metals in select soil, 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:
 - 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 Main Complex (237 m³) and Former USAF Dump Area and Former Ammunition Storage Area (79 m³).
 - b. Metals impacts were identified in sediment in exceedance of the applicable CCME PEL for Freshwater Sediment at the Former Contractors Village (12 m³).
 - c. Metals impacts were identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life at the Former Contractors Village (20 m²), Main Complex (20 m²), and Former USAF Dump Area and Former Ammunition Storage Area (1,000 m²). Metals impacts identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life were also identified in a pond at the Former U.S. Military Cartwright Site – General Area and the stream connecting Larks Harbour Pond to Sandwich Bay at the Site, but the areal extents of impacts were not assessed as part of the current investigation.
7. Concentrations of General Chemistry in select surface water samples exceeded the applicable generic regulatory guidelines and may present risks to human or ecological health on the Site, as follows:
 - a. General chemistry impacts were identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life at the Former USAF Dump Area and Former Ammunition Storage Area (1,000 m²). General chemistry impacts identified in surface water in exceedance of the applicable CCME WQG for the protection of Freshwater Aquatic Life were also identified in the stream connecting Larks Harbour Pond to Sandwich Bay at the Site, but the areal extent of impacts was not assessed as part of the current investigation.

The volumes and areas of impacted material provided herein are estimates generated based on the available site data. Based on the permeability of the soils at the Site, historical land use, and current sample density, additional delineation is recommended to refine the extent of impacts (larger or smaller) at the Site. Based on ecological screening included in Appendix B, further assessment is required to address ecological concerns. In particular, the vertical extent of impacts should be investigated with a borehole/monitor well program and should include a groundwater assessment.



Closure
June 7, 2018

11.0 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.



PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL


Closure
June 7, 2018

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 Aaron Power, EIT., and reviewed by Robert Macleod, M.Sc., P.Geo. and Jim Slade, P.Eng., P.Geo.

Respectfully submitted,

STASSINU STANTEC LIMITED PARTNERSHIP


for Aaron Power, EIT.
Environmental Engineer in Training


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



References
June 7, 2018

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PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL

References
June 7, 2018

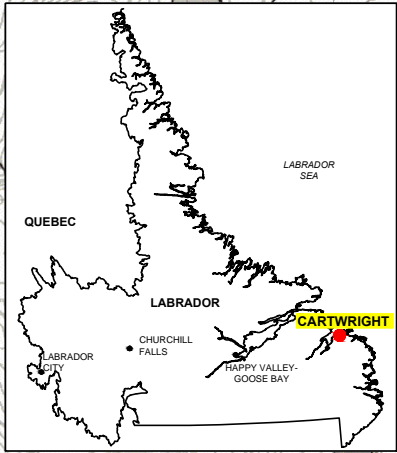
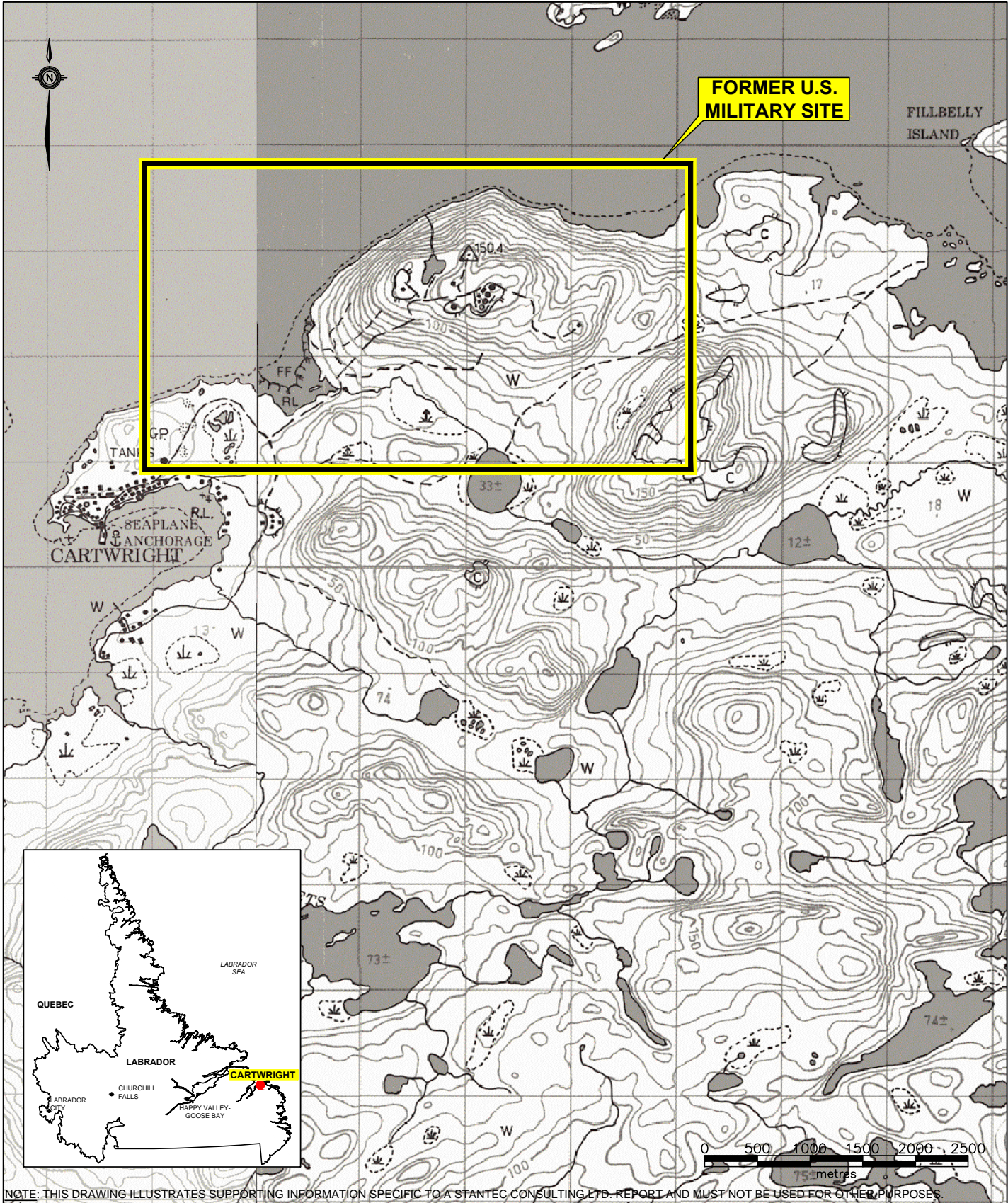
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APPENDIX A

Drawings



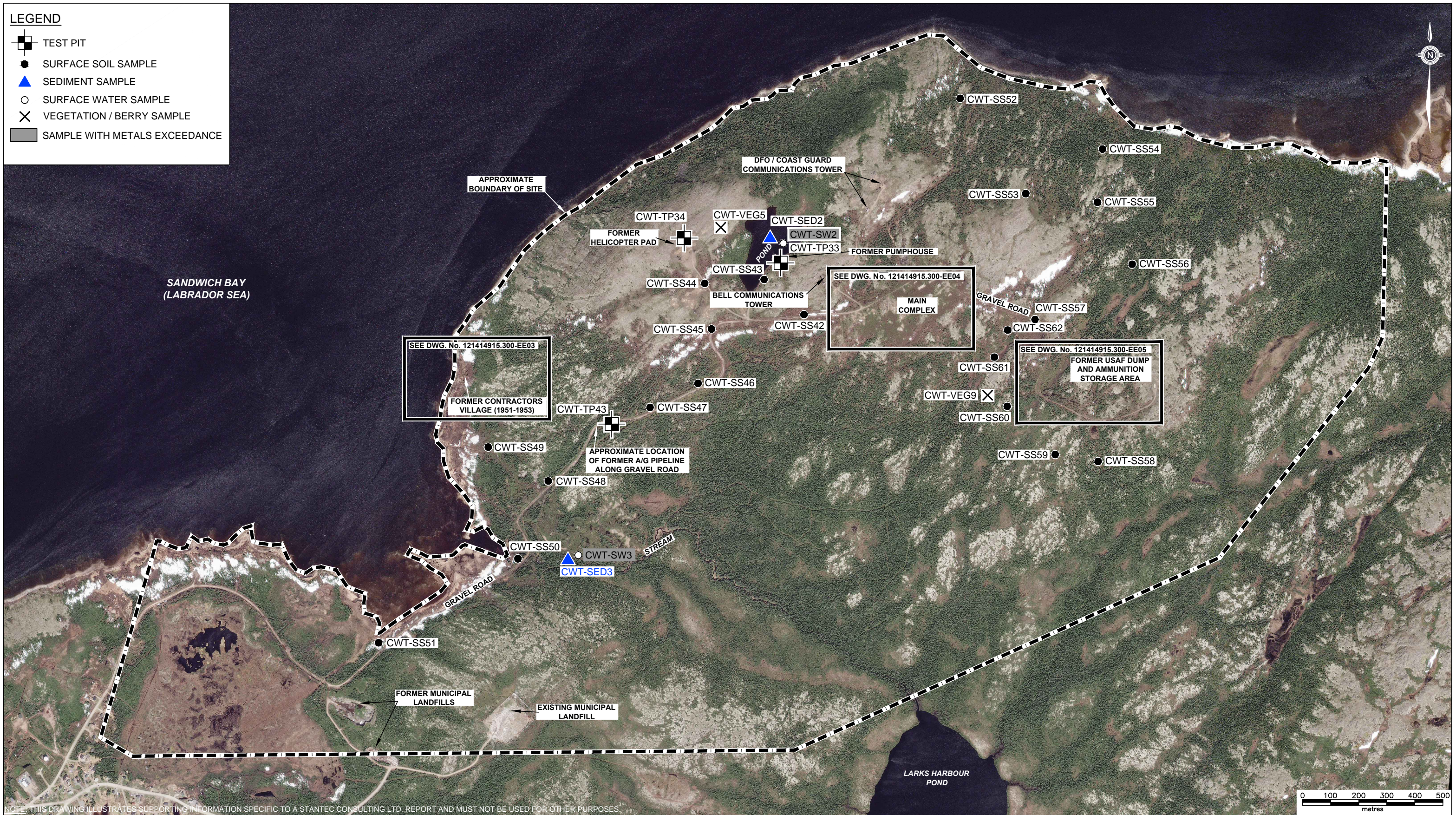
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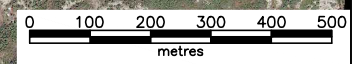


LEGEND

- ☒ TEST PIT
- SURFACE SOIL SAMPLE
- ▲ SEDIMENT SAMPLE
- SURFACE WATER SAMPLE
- ✕ VEGETATION / BERRY SAMPLE
- SAMPLE WITH METALS EXCEEDANCE



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











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DRAWING TITLE:	SAMPLE LOCATION AND EXCEEDANCE PLAN - FORMER U.S. MILITARY CARTWRIGHT SITE - GENERAL AREA

SCALE: 1:12,500	DATE: MAR. 23, 2018	REV. No: 0
DRAWN BY: N.M.	EDITED BY: S.N.	CHECKED BY: A.P.
DRAWING No: 121414915.300-EE-02		CAD FILE: 121414915_300-EE-02.DWG




LEGEND

-  TEST PIT
-  SURFACE SOIL SAMPLE
-  SEDIMENT SAMPLE
-  SURFACE WATER SAMPLE
-  VEGETATION / BERRY SAMPLE
-  SAMPLE WITH PHC EXCEEDANCE
-  SAMPLE WITH PAH EXCEEDANCE
-  SAMPLE WITH METALS EXCEEDANCE

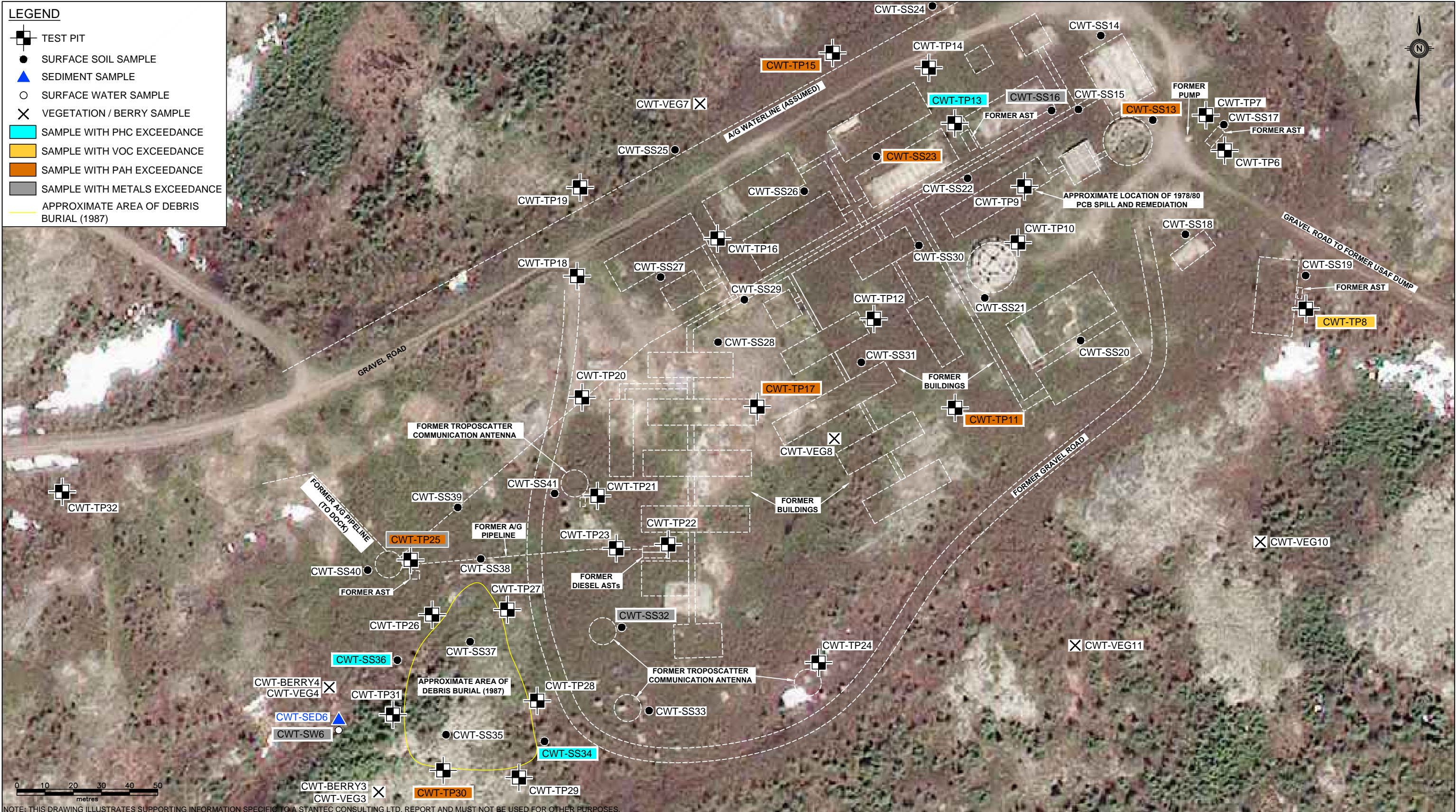


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LEGEND

- ☒ TEST PIT
- SURFACE SOIL SAMPLE
- ▲ SEDIMENT SAMPLE
- SURFACE WATER SAMPLE
- ✕ VEGETATION / BERRY SAMPLE
- SAMPLE WITH PHC EXCEEDANCE
- SAMPLE WITH VOC EXCEEDANCE
- SAMPLE WITH PAH EXCEEDANCE
- SAMPLE WITH METALS EXCEEDANCE
- APPROXIMATE AREA OF DEBRIS BURIAL (1987)



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

<p>CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF MUNICIPAL AFFAIRS AND ENVIRONMENT</p> <p>PROJECT TITLE: PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER U.S. MILITARY SITE, CARTWRIGHT, NL</p> <p>DRAWING TITLE: SAMPLE LOCATION AND EXCEEDANCE PLAN - MAIN COMPLEX</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>SCALE: 1:1250</td> <td>DATE: MAY 30, 2018</td> <td>REV. No. 0</td> </tr> <tr> <td>DRAWN BY: N.M.</td> <td>EDITED BY: S.N.</td> <td>CHECKED BY: A.P.</td> </tr> <tr> <td colspan="2">DRAWING No. 121414915.300-EE-04</td> <td>CAD FILE: 121414915_300-EE-04.DWG</td> </tr> </table>	SCALE: 1:1250	DATE: MAY 30, 2018	REV. No. 0	DRAWN BY: N.M.	EDITED BY: S.N.	CHECKED BY: A.P.	DRAWING No. 121414915.300-EE-04		CAD FILE: 121414915_300-EE-04.DWG
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LEGEND

- ⊠ TEST PIT
- SURFACE SOIL SAMPLE
- ▲ SEDIMENT SAMPLE
- SURFACE WATER SAMPLE
- ✕ VEGETATION / BERRY SAMPLE
- SAMPLE WITH PHC EXCEEDANCE
- SAMPLE WITH PAH EXCEEDANCE
- SAMPLE WITH METALS EXCEEDANCE

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:	1:1500	DATE:	MAY 30, 2018	REV. No:	0
PROJECT TITLE:	PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER U.S. MILITARY SITE, CARTWRIGHT, NL	DRAWN BY:	N.M.	EDITED BY:	S.N.	CHECKED BY:	A.P.
DRAWING TITLE:	SAMPLE LOCATION PLAN - FORMER USAF DUMP AREA AND FORMER AMMUNITION STORAGE AREA	DRAWING No:	121414915.300-EE-05		CAD FILE:	121414915_300-EE-05.DWG	



APPENDIX B

Screening Checklists

SITE ASSESSMENT & TIER I/II TABLE CHECKLIST

Site Location:	Cartwright, NL
Site Professional:	Jim Slade, P.Eng., P.Geo.
Date:	June 7, 2018

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	
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	No groundwater samples obtained, and extent of impacts not delineated
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	Yes	
Free product observations made in soil and groundwater	Yes	
Low lab detection level for benzene in soil if potable water area	N/A	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	N/A	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	Yes	Free product not identified in groundwater during 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	Free product not identified in soils during current investigation
Residual hydrocarbons do not create objectionable odours or explosive conditions in indoor or outdoor air	Yes	
Surface soil not stained	No	Staining observed
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	No	Groundwater observed within 0.1 m of surface in Former USAF Dump Area and Ammunition Storage Area to greater than 1.8 m in several locations
Impacted soil thickness is less than 3.0 metres	Unknown	Samples not collected below 1.8 m
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	No	No buildings on sites assessed
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 <u>surface soil</u> (depth < 1.5 m) above the appropriate screening levels in Tables 1a and 1b?	Yes	Exceedances noted in surface soil at the Former Contractors Village, Main Complex, and Former USAF Dump Area and Former Ammunition Storage Area (Refer to Tables D.1 and D.2, Appendix D)
2. Do site characterization data indicate the presence of PHC in <u>shallow site groundwater</u> (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? 3. Do existing site characterization data indicate the presence of PHC in site <u>groundwater</u> above appropriate ecological screening levels derived for the protection of aquatic receptors in Table 3a/3b?	N/A	Groundwater not assessed as part of the current investigation. Recommended for future work.
4. Do site characterization data indicate the presence of PHC in site <u>surface water</u> above the appropriate screening levels in Table 3?	Yes	Exceedances noted in surface water at the Former Ammunition Storage Area (Refer to Table D.12, Appendix D)
5. Does site characterization indicate the presence of PHC in on-site or adjacent <u>sediments</u> above the appropriate screening levels in Table 4?	Yes	Exceedances noted in sediments at the Former Contractors Village and Former USAF Dump Area and Former Ammunition Storage Area (Refer to Table D.8, Appendix D)
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? <ul style="list-style-type: none"> • 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 shrubbery, forest, and grass. Site hydrocarbons in surface soil may come into contact with terrestrial plants and invertebrates in these areas.

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. Recommended for future work.
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. Recommended for future work.
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. Recommended for future work.
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: <ul style="list-style-type: none"> 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

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL



Photo 1 – Former U.S. Military Cartwright Site – General Area: former pumphouse located on pond to the northwest of the Main Complex. Looking north.



Photo 2 – Former U.S. Military Cartwright Site – General Area: Bell communication tower observed from pond located to the northwest of the Main Complex. Looking east.

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL



Photo 3 – Former Contractors Village: debris along the shoreline of Sandwich Bay. Looking north.



Photo 4 – Former Contractors Village: little physical evidence left of former site infrastructure. Looking southwest.

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL



Photo 5 – Former Contractors Village: aerial view of Former Contractors Village in foreground. Town of Cartwright in background. Looking southwest.



Photo 6 – Main Complex: Bell communication tower on the left of photo. Main Complex area beyond tower – primarily to the right of the gravel access road. Looking northeast.

PHASE II ENVIRONMENTAL SITE ASSESSMENT, FORMER MILITARY SITE, CARTWRIGHT, NL



Photo 7 – Main Complex: aerial view of the Main Complex. Looking north.



Photo 8 – Former USAF Dump Area and Ammunition Storage Area: foundation of former ammunition storage building. Looking west.



Photo 9 – Former USAF Dump Area and Ammunition Storage Area: foundation of former ammunition storage building. Looking east.



Photo 10 – Former USAF Dump Area and Ammunition Storage Area: area north of former ammunition storage building. Looking north.

APPENDIX D

Coordinates of Sample Locations

**Table D.1 Coordinates of Sample Locations
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300**

Sample ID	Northing	Easting
CWT-SS1	5952550.733	503110.4068
CWT-SS2	5952538.43	503117.2549
CWT-SS3	5952532.871	503097.243
CWT-SS4	5952549.258	503098.1322
CWT-SS5	5952429.624	502994.0269
CWT-SS6	5952650.819	502728.9695
CWT-SS7	5952618.437	502791.2415
CWT-SS8	5952616.807	502811.547
CWT-SS9	5952585.261	502747.7714
CWT-SS10	5952576.28	502767.2888
CWT-SS11	5952568.443	502795.1752
CWT-SS12	5952527.302	502743.9051
CWT-SS13	5952911.658	502367.0187
CWT-SS14	5952941.646	502348.5599
CWT-SS15	5952915.436	502340.6133
CWT-SS16	5952915.039	502331.0775
CWT-SS17	5952910.021	502392.2399
CWT-SS18	5952871.063	502378.602
CWT-SS19	5952856.464	502421.2707
CWT-SS20	5952833.387	502341.3928
CWT-SS21	5952848.486	502307.3459
CWT-SS22	5952890.969	502301.2627
CWT-SS23	5952898.712	502268.8806
CWT-SS24	5952952.17	502288.7621
CWT-SS25	5952901.074	502197.3702
CWT-SS26	5952886.402	502243.253
CWT-SS27	5952855.891	502192.2538
CWT-SS28	5952832.791	502212.6588
CWT-SS29	5952847.882	502221.996
CWT-SS30	5952867.142	502283.979
CWT-SS31	5952825.643	502263.5167
CWT-SS32	5952731.555	502178.4524
CWT-SS33	5952701.969	502188.1869
CWT-SS34	5952691.049	502151.0368
CWT-SS35	5952693.431	502116.072
CWT-SS36	5952719.898	502098.7888
CWT-SS37	5952726.45	502124.6151
CWT-SS38	5952755.837	502128.3897
CWT-SS39	5952774.104	502120.2445
CWT-SS40	5952751.866	502088.2596
CWT-SS41	5952779.068	502154.6133
CWT-SS42	5952792.555	501861.8076
CWT-SS43	5952917.499	501719.7025
CWT-SS44	5952903.616	501508.1475
CWT-SS45	5952741.296	501532.7221
CWT-SS46	5952548.008	501484.6414
CWT-SS47	5952462.576	501313.6879
CWT-SS48	5952200.49	500951.213
CWT-SS49	5952321.162	500737.5211
CWT-SS50	5951923.597	500843.2256
CWT-SS51	5951624.587	500347.2771
CWT-SS52	5953562.303	502417.7987
CWT-SS53	5953223.165	502651.3549
CWT-SS54	5953381.723	502924.5715
CWT-SS55	5953192.335	502906.9447
CWT-SS56	5952972.115	503030.3328
CWT-SS57	5952775.193	502684.4133
CWT-SS58	5952270.176	502909.184
CWT-SS59	5952294.439	502756.3399
CWT-SS60	5952466.072	502585.5142
CWT-SS61	5952641.301	502539.6609
CWT-SS62	5952737.452	502587.3123
CWT-SS63	5952565.798	500628.5936
CWT-SS64	5952562.785	500647.7774
CWT-SS65	5952541.42	500637.6374
CWT-SS66	5952543.063	500616.2611
CWT-SS67	5952519.233	500611.3281
CWT-SS68	5952515.672	500628.8676

Sample ID	Northing	Easting
CWT-TP1	5952538.727	502763.0766
CWT-TP2	5952566.534	502734.0682
CWT-TP3	5952607.042	502760.9705
CWT-TP4	5952599.409	502801.9703
CWT-TP5	5952630.493	502812.0042
CWT-TP6	5952899.989	502392.5309
CWT-TP7	5952912.999	502385.8675
CWT-TP8	5952844.301	502421.3798
CWT-TP9	5952887.399	502321.4687
CWT-TP10	5952867.547	502319.1557
CWT-TP11	5952809.2	502296.8309
CWT-TP12	5952840.669	502267.9809
CWT-TP13	5952910.078	502296.6877
CWT-TP14	5952929.689	502287.4868
CWT-TP15	5952935.76	502253.3521
CWT-TP16	5952869.701	502212.4557
CWT-TP17	5952809.833	502226.5704
CWT-TP18	5952856.288	502162.6061
CWT-TP19	5952887.22	502163.6805
CWT-TP20	5952813.001	502164.3565
CWT-TP21	5952778.311	502169.829
CWT-TP22	5952760.901	502194.95
CWT-TP23	5952759.287	502176.5017
CWT-TP24	5952718.708	502248.3703
CWT-TP25	5952755.205	502103.4936
CWT-TP26	5952735.488	502111.1477
CWT-TP27	5952737.477	502137.8388
CWT-TP28	5952705.397	502148.398
CWT-TP29	5952678.421	502141.9603
CWT-TP30	5952680.693	502115.0729
CWT-TP31	5952700.244	502097.2134
CWT-TP33	5952977.53	501778.498
CWT-TP34	5953064.516	501434.8471
CWT-TP35	5952519.447	500656.5811
CWT-TP36	5952510.575	500636.8492
CWT-TP37	5952509.35	500604.7848
CWT-TP38	5952533.442	500612.4196
CWT-TP39	5952550.972	500624.752
CWT-TP40	5952566.037	500635.7142
CWT-TP41	5952554.259	500649.9651
CWT-TP42	5952538.054	500651.6482
CWT-TP43	5952402.25	501176.8377
CWT-SW2	5953046.544	501788.0624
CWT-SW3	5951936.971	501057.9653
CWT-SW5	5952577.454	500665.3695
CWT-SW6	5952695.061	502077.9574
CWT-SW7	5952382.243	502899.9558
CWT-SW8	5952682.848	502669.0695
CWT-SED2	5953046.544	501788.0624
CWT-SED3	5951936.971	501057.9653
CWT-SED4	5952559.726	500589.422
CWT-SED5	5952577.454	500665.3695
CWT-SED6	5952695.061	502077.9574
CWT-SED7	5952382.243	502899.9558
CWT-SED8	5952682.848	502669.0695
CWT-VEG1	5952519.759	502776.1456
CWT-VEG2	5952611.352	502829.1703
CWT-VEG3	5952673.103	502092.1375
CWT-VEG4	5952710.285	502074.6205
CWT-VEG5	5953101.791	501565.6258
CWT-VEG7	5952917.477	502206.2662
CWT-VEG8	5952798.568	502253.9565
CWT-VEG9	5952504.874	502515.9359
CWT-VEG10	5952761.933	502405.2156
CWT-VEG11	5952725.15	502339.4506
CWT-VEG12	5952536.632	500636.5092
CWT-BERRY3	5952673.103	502092.1375
CWT-BERRY4	5952710.285	502074.6205

*All coordinates are in UTM-20

APPENDIX E

Symbols and Terms
Test Pit Records

SYMBOLS AND TERMS USED ON BOREHOLE AND TEST PIT RECORDS

SOIL DESCRIPTION

Terminology describing common soil genesis:

<i>Rootmat</i>	- vegetation, roots and moss with organic matter and topsoil typically forming a mattress at the ground surface
<i>Topsoil</i>	- mixture of soil and humus capable of supporting vegetative growth
<i>Peat</i>	- mixture of visible and invisible fragments of decayed organic matter
<i>Till</i>	- unstratified glacial deposit which may range from clay to boulders
<i>Fill</i>	- material below the surface identified as placed by humans (excluding buried services)

Terminology describing soil structure:

<i>Desiccated</i>	- having visible signs of weathering by oxidization of clay minerals, shrinkage cracks, etc.
<i>Fissured</i>	- having cracks, and hence a blocky structure
<i>Varved</i>	- composed of regular alternating layers of silt and clay
<i>Stratified</i>	- composed of alternating successions of different soil types, e.g. silt and sand
<i>Layer</i>	- > 75 mm in thickness
<i>Seam</i>	- 2 mm to 75 mm in thickness
<i>Parting</i>	- < 2 mm in thickness

Terminology describing soil types:

The classification of soil types are made on the basis of grain size and plasticity in accordance with the Unified Soil Classification System (USCS) (ASTM D 2487 or D 2488) which excludes particles larger than 75 mm. For particles larger than 75 mm, and for defining percent clay fraction in hydrometer results, definitions proposed by Canadian Foundation Engineering Manual, 4th Edition are used. The USCS provides a group symbol (e.g. SM) and group name (e.g. silty sand) for identification.

Terminology describing cobbles, boulders, and non-matrix materials (organic matter or debris):

Terminology describing materials outside the USCS, (e.g. particles larger than 75 mm, visible organic matter, and construction debris) is based upon the proportion of these materials present:

<i>Trace, or occasional</i>	Less than 10%
<i>Some</i>	10-20%
<i>Frequent</i>	> 20%

Terminology describing compactness of cohesionless soils:

The standard terminology to describe cohesionless soils includes compactness (formerly "relative density"), as determined by the Standard Penetration Test (SPT) N-Value - also known as N-Index. The SPT N-Value is described further on page 3. A relationship between compactness condition and N-Value is shown in the following table.

Compactness Condition	SPT N-Value
<i>Very Loose</i>	<4
<i>Loose</i>	4-10
<i>Compact</i>	10-30
<i>Dense</i>	30-50
<i>Very Dense</i>	>50

Terminology describing consistency of cohesive soils:

The standard terminology to describe cohesive soils includes the consistency, which is based on undrained shear strength as measured by *in situ* vane tests, penetrometer tests, or unconfined compression tests. Consistency may be crudely estimated from SPT N-Value based on the correlation shown in the following table (Terzaghi and Peck, 1967). The correlation to SPT N-Value is used with caution as it is only very approximate.

Consistency	Undrained Shear Strength		Approximate SPT N-Value
	kips/sq.ft.	kPa	
<i>Very Soft</i>	<0.25	<12.5	<2
<i>Soft</i>	0.25 - 0.5	12.5 - 25	2-4
<i>Firm</i>	0.5 - 1.0	25 - 50	4-8
<i>Stiff</i>	1.0 - 2.0	50 - 100	8-15
<i>Very Stiff</i>	2.0 - 4.0	100 - 200	15-30
<i>Hard</i>	>4.0	>200	>30

ROCK DESCRIPTION

Except where specified below, terminology for describing rock is as defined by the International Society for Rock Mechanics (ISRM) 2007 publication "The Complete ISRM Suggested Methods for Rock Characterization, Testing and Monitoring: 1974-2006"

Terminology describing rock quality:

RQD	Rock Mass Quality
0-25	Very Poor Quality
25-50	Poor Quality
50-75	Fair Quality
75-90	Good Quality
90-100	Excellent Quality

Alternate (Colloquial) Rock Mass Quality	
Very Severely Fractured	Crushed
Severely Fractured	Shattered or Very Blocky
Fractured	Blocky
Moderately Jointed	Sound
Intact	Very Sound

RQD (Rock Quality Designation) denotes the percentage of intact and sound rock retrieved from a borehole of any orientation. All pieces of intact and sound rock core equal to or greater than 100 mm (4 in.) long are summed and divided by the total length of the core run. RQD is determined in accordance with ASTM D6032.

SCR (Solid Core Recovery) denotes the percentage of solid core (cylindrical) retrieved from a borehole of any orientation. All pieces of solid (cylindrical) core are summed and divided by the total length of the core run (It excludes all portions of core pieces that are not fully cylindrical as well as crushed or rubble zones).

Fracture Index (FI) is defined as the number of naturally occurring fractures within a given length of core. The Fracture Index is reported as a simple count of natural occurring fractures.

Terminology describing rock with respect to discontinuity and bedding spacing:

Spacing (mm)	Discontinuities	Bedding
>6000	Extremely Wide	-
2000-6000	Very Wide	Very Thick
600-2000	Wide	Thick
200-600	Moderate	Medium
60-200	Close	Thin
20-60	Very Close	Very Thin
<20	Extremely Close	Laminated
<6	-	Thinly Laminated

Terminology describing rock strength:

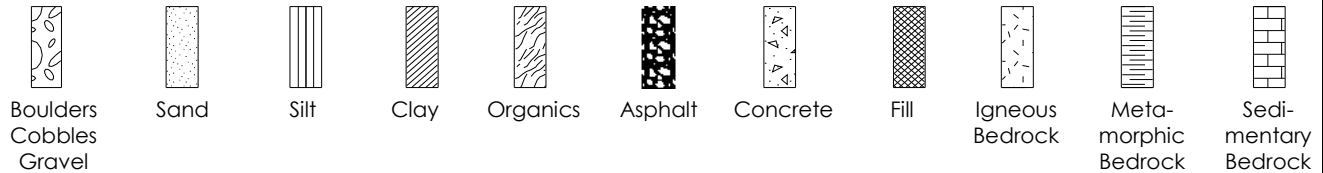
Strength Classification	Grade	Unconfined Compressive Strength (MPa)
Extremely Weak	R0	<1
Very Weak	R1	1 – 5
Weak	R2	5 – 25
Medium Strong	R3	25 – 50
Strong	R4	50 – 100
Very Strong	R5	100 – 250
Extremely Strong	R6	>250

Terminology describing rock weathering:

Term	Symbol	Description
Fresh	W1	No visible signs of rock weathering. Slight discoloration along major discontinuities
Slightly	W2	Discoloration indicates weathering of rock on discontinuity surfaces. All the rock material may be discolored.
Moderately	W3	Less than half the rock is decomposed and/or disintegrated into soil.
Highly	W4	More than half the rock is decomposed and/or disintegrated into soil.
Completely	W5	All the rock material is decomposed and/or disintegrated into soil. The original mass structure is still largely intact.
Residual Soil	W6	All the rock converted to soil. Structure and fabric destroyed.

STRATA PLOT

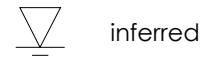
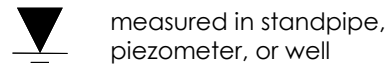
Strata plots symbolize the soil or bedrock description. They are combinations of the following basic symbols. The dimensions within the strata symbols are not indicative of the particle size, layer thickness, etc.



SAMPLE TYPE

SS	Split spoon sample (obtained by performing the Standard Penetration Test)
ST	Shelby tube or thin wall tube
DP	Direct-Push sample (small diameter tube sampler hydraulically advanced)
PS	Piston sample
BS	Bulk sample
HQ, NQ, BQ, etc.	Rock core samples obtained with the use of standard size diamond coring bits.

WATER LEVEL MEASUREMENT



RECOVERY

For soil samples, the recovery is recorded as the length of the soil sample recovered. For rock core, recovery is defined as the total cumulative length of all core recovered in the core barrel divided by the length drilled and is recorded as a percentage on a per run basis.

N-VALUE

Numbers in this column are the field results of the Standard Penetration Test: the number of blows of a 140 pound (63.5 kg) hammer falling 30 inches (760 mm), required to drive a 2 inch (50.8 mm) O.D. split spoon sampler one foot (300 mm) into the soil. In accordance with ASTM D1586, the N-Value equals the sum of the number of blows (N) required to drive the sampler over the interval of 6 to 18 in. (150 to 450 mm). However, when a 24 in. (610 mm) sampler is used, the number of blows (N) required to drive the sampler over the interval of 12 to 24 in. (300 to 610 mm) may be reported if this value is lower. For split spoon samples where insufficient penetration was achieved and N-Values cannot be presented, the number of blows are reported over sampler penetration in millimetres (e.g. 50/75). Some design methods make use of N-values corrected for various factors such as overburden pressure, energy ratio, borehole diameter, etc. No corrections have been applied to the N-values presented on the log.

DYNAMIC CONE PENETRATION TEST (DCPT)

Dynamic cone penetration tests are performed using a standard 60 degree apex cone connected to 'A' size drill rods with the same standard fall height and weight as the Standard Penetration Test. The DCPT value is the number of blows of the hammer required to drive the cone one foot (300 mm) into the soil. The DCPT is used as a probe to assess soil variability.

OTHER TESTS

S	Sieve analysis
H	Hydrometer analysis
k	Laboratory permeability
γ	Unit weight
G_s	Specific gravity of soil particles
CD	Consolidated drained triaxial
CU	Consolidated undrained triaxial with pore pressure measurements
UU	Unconsolidated undrained triaxial
DS	Direct Shear
C	Consolidation
Q_u	Unconfined compression
I_p	Point Load Index (I_p on Borehole Record equals $I_p(50)$ in which the index is corrected to a reference diameter of 50 mm)


	Single packer permeability test; test interval from depth shown to bottom of borehole
	Double packer permeability test; test interval as indicated
	Falling head permeability test using casing
	Falling head permeability test using well point or piezometer



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 10-13-17 WATER LEVEL N/A

TEST PIT No. CWT-TP01
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND with gravel (SP)			BS	1	0		-	nd	nd	nd	nd	nd
		End of Test Pit No groundwater seepage observed. Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 10-13-17 WATER LEVEL 0.40m 10-13-17

TEST PIT No. CWT-TP02
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)								
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES			
0		Rootmat																
		Loose, brown, SAND with gravel (SP) -some debris (metal, wood, construction)		0.40m	BS	1	-		-	-	-	-	-	-	-	-	-	-
					BS	2	-		-	-	-	-	-	-	-	-	-	-
		End of Test Pit																
1		Slow to moderate groundwater seepage observed at 0.4 m depth. Bedrock not encountered.																
2																		



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 10-13-17 WATER LEVEL 0.50m 10-13-17

TEST PIT No. CWT-TP03
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)									
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES				
0		Rootmat																	
		Loose to compact, brown, SAND with gravel (SP) -trace debris (glass, metal, plastic)		▽	BS	1	0		-	-	-	-	-	-	-	-	-	-	-
					BS	2	0		-	310	nd	nd	nd	nd	nd	nd	nd	nd	nd
		End of Test Pit																	
1		Slow to moderate groundwater seepage observed at 0.5 m depth. Bedrock not encountered.																	
2																			



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 10-13-17 WATER LEVEL 0.10m 10-13-17

TEST PIT No. CWT-TP04
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND with gravel (SP) -trace debris (plastic, metal, construction)		▽	BS	1	0	-	nd	nd	nd	nd	nd	
		End of Test Pit Rapid groundwater seepage observed at 0.1 m depth. Bedrock not encountered.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 10-13-17 WATER LEVEL 0.30m 10-13-17

TEST PIT No. CWT-TP05
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Organics			BS	1	0		-	-	-	-	-	-
		Loose, grey to dark brown, SAND (SP)			BS	2	0		-	160	nd	nd	nd	nd
		End of Test Pit												
		Rapid groundwater seepage observed at 0.3 m depth.												
1		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP06
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP) -trace organics			BS	1	0	-	24	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 0.6 m depth.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP07
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Rootmat												
		Compact, brown, SAND (SP) -some organics			BS	1	0	-	nd	nd	nd	nd	nd	nd
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 0.3 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 10-13-17 WATER LEVEL N/A

TEST PIT No. CWT-TP08
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)								
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES			
0		Rootmat																
		Compact, brown, SAND with gravel (SP)			BS	1	0		-	-	-	-	-	-	-	-	-	-
					BS	2	0		-	21	nd	nd	nd	nd	nd	nd	nd	nd
		BEDROCK																
		End of Test Pit																
		No groundwater seepage observed.																
		Refusal on bedrock at 0.7 m depth.																
1																		
2																		



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP09
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP) -some organics			BS	1	0	-	74	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 0.3 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP10
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR OTHER TESTS	TPH		BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	
0		Loose to compact, brown, SAND with gravel (SP)			BS	1	0	-	-	-	-	-	-	-
1					BS	2	0	-	nd	nd	nd	nd	nd	nd
2		End of Test Pit No groundwater seepage observed. Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP11
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose to compact, brown, SAND (SP) -trace debris (wood) and organic rootlets			BS	1	0	-	29	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 0.5 m depth.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP12
 PROJECT No. 121414915.300
 DATUM N/A



DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP) -trace organics			BS	1	0	-	260	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 0.6 m depth.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.20m 11-07-17

TEST PIT No. CWT-TP13
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR OTHER TESTS	TPH		BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	
0		Compact, brown, SAND (SP)			BS	1	2	-	6300	nd	nd	nd	nd	
1				▽	BS	2	-	-	-	-	-	-	-	
2		End of Test Pit Moderate groundwater seepage observed at 1.2 m depth. Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 0.50m 11-07-17

TEST PIT No. CWT-TP14
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND (SP) -frequent organics				BS	1	0	-	200	nd	nd	nd	nd
		End of Test Pit Groundwater seepage observed at 0.5 m depth. Refusal on bedrock at 0.5 m depth.		▽										
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.50m 11-07-17

TEST PIT No. CWT-TP15
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)									
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES				
0		Loose, brown, SAND (SP) -trace debris (metal, wood)																	
					BS	1	0	-	410	nd	nd	nd	nd						
					BS	2	0	-	610	nd	nd	nd	nd						
				▽															
		End of Test Pit																	
2		Slow to moderate groundwater seepage observed at 1.5 m depth. Refusal on bedrock at 1.8 m depth.																	



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP16
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP) -some organic rootlets			BS	1	-		-	-	-	-	-	-
1					BS	2	0		-	130	nd	nd	nd	nd
2		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 1.6 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.30m 11-07-17

TEST PIT No. CWT-TP17
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP)			BS	1	0		-	-	-	-	-	-
1					BS	2	0		-	79	nd	nd	nd	nd
		End of Test Pit		▽										
		Slow groundwater seepage observed at 1.3 m depth.												
		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP18
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP)			BS	1	1	-	nd	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 0.3 m depth.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP19
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)						
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	
0		Compact, brown, SAND (SP)														
				BS	1	1			-	-	-	-	-	-	-	-
				BS	2	1			-	85	nd	nd	nd	nd	nd	nd
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 1.4 m depth.														
2																



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP20
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP)			BS	1	0	-	nd	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Bedrock not encountered.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP21
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP)			BS	1	0	-	nd	nd	nd	nd	nd	
		End of Test Pit Slow groundwater seepage observed. Bedrock not encountered.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 0.30m 11-07-17

TEST PIT No. CWT-TP22
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP)			BS	1	-	-	nd	nd	nd	nd	nd	
		End of Test Pit Groundwater seepage observed at 0.3 m depth. Refusal on bedrock at 0.3 m depth.												
1														
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 0.40m 11-07-17

TEST PIT No. CWT-TP23
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Compact, brown, SAND (SP)			BS	1	0	-	52	nd	nd	nd	nd	
		End of Test Pit Groundwater seepage observed at 0.4 m depth. Refusal on bedrock at 0.4 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP24
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)										
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES						
0		Compact, brown, SAND (SP)																		
					BS	1	0	-	110	nd	nd	nd	nd							
		End of Test Pit																		
1		No groundwater seepage observed. Refusal on bedrock at 0.7 m depth.																		
2																				



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP25
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Rootmat												
		Loose, brown, SAND (SP) -trace debris (wood, metal, insulation)			BS	1	0	-	-	-	-	-	-	-
					BS	2	0	-	440	nd	nd	nd	nd	nd
		End of Test Pit												
		No groundwater seepage observed.												
		Refusal on bedrock at 1.5 m depth.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP26
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose to compact, brown, SAND (SP) -some debris (metal)			BS	1	0		-	-	-	-	-	-
1					BS	2	-		-	22	nd	nd	nd	nd
2		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 1.5 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP27
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR OTHER TESTS	TPH		BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	
0		Loose, brown, SAND (SP) -trace debris (wood, metal)			BS	1	0	-	-	-	-	-	-	-
1					BS	2	0	-	96	nd	nd	nd	nd	
2		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 1.6 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP28
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND (SP) -trace debris (metal)			BS	1	0		-	-	-	-	-	-
					BS	2	0		-	180	nd	nd	nd	nd
2		End of Test Pit No groundwater seepage observed. Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP29
 PROJECT No. 121414915.300
 DATUM N/A



DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND (SP) -trace debris (metal)			BS	1	0		-	-	-	-	-	-
1					BS	2	0		-	110	nd	nd	nd	nd
2		End of Test Pit No groundwater seepage observed. Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.20m 11-07-17

TEST PIT No. CWT-TP30
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)					
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown, SAND (SP) -some debris (metal)				BS	1	0		-	-	-	-	-	-
1				▽		BS	2	0		-	560	nd	nd	nd	nd
2		End of Test Pit Groundwater seepage observed at 1.2 m depth. Bedrock not encountered.													



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP31
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)									
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES				
0		Loose, brown, SAND (SP) -some debris (metal)																	
					BS	1	0		-	-	-	-	-	-	-	-	-	-	-
					BS	2	0		-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
		End of Test Pit No groundwater seepage observed. Refusal on bedrock at 1.7 m depth.																	
2																			



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.00m 11-07-17

TEST PIT No. CWT-TP32
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR	OTHER TESTS		TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Compact, brown, SAND (SP); some cobbles			BS	1	0	-	20	nd	nd	nd	nd	
1					BS	2	0	-	31	nd	nd	nd	nd	
2		End of Test Pit Groundwater seepage observed at 1.0 m depth. Refusal on bedrock at 1.5 m depth.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.50m 11-07-17

TEST PIT No. CWT-TP33
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR OTHER TESTS	TPH		BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	
0		Compact, rockfill with brown, SAND (SP): FILL												
					BS	1	0	-	100	nd	nd	nd	nd	
					BS	2	0	-	140	nd	nd	nd	nd	
		End of Test Pit												
		Groundwater seepage observed at 1.5 m depth.												
		Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL N/A

TEST PIT No. CWT-TP34
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON ODOUR OTHER TESTS	TPH		BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	
0		Loose to compact, brown, SAND (SP)			BS	1	0	-	nd	nd	nd	nd	nd	
		End of Test Pit No groundwater seepage observed. Bedrock not encountered.												



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.20m 11-07-17

TEST PIT No. CWT-TP35
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)					
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose, brown, SAND (SP) -trace debris (wood) and organic rootlets				BS	1	0		-	-	-	-	-	-
1				▽		BS	2	0		-	990	nd	nd	0.14	1.50
2		End of Test Pit Slow groundwater seepage observed at 1.2 m depth. Bedrock not encountered.													



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.50m 11-07-17

TEST PIT No. CWT-TP36
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)					
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
0		Loose to compact, brown, SAND (SP)													
					BS	1	0	-	-	-	-	-	-	-	-
					BS	2	0	-	-	-	-	-	-	-	-
		End of Test Pit													
		Very slow groundwater seepage observed at 1.5 m depth.													
2		Bedrock not encountered.													



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 0.90m 11-07-17

TEST PIT No. CWT-TP37
 PROJECT No. 121414915.300
 DATUM N/A



DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose to compact, brown, SAND with gravel (SP)			BS	1	1		-	-	-	-	-	-
1					BS	2	1		-	19	nd	nd	nd	nd
		End of Test Pit												
		Slow groundwater seepage observed at 0.9 m depth.												
		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 0.90m 11-07-17

TEST PIT No. CWT-TP38
 PROJECT No. 121414915.300
 DATUM N/A



DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose to compact, brown, SAND (SP)			BS	1	0		-	-	-	-	-	-
1				▽	BS	2	1		-	43	nd	nd	nd	nd
		End of Test Pit												
		Slow groundwater seepage observed at 0.9 m depth.												
		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.00m 11-07-17

TEST PIT No. CWT-TP39
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose to compact, brown, SAND (SP)			BS	1	1		-	-	-	-	-	-
1				▽	BS	2	1		-	nd	nd	nd	nd	nd
		End of Test Pit												
		Slow groundwater seepage observed at 1.0 m depth.												
		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.00m 11-07-17

TEST PIT No. CWT-TP40
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose to compact, brown, SAND with gravel (SP)			BS	1	0		-	-	-	-	-	-
1					BS	2	1		-	nd	nd	nd	nd	nd
		End of Test Pit												
		Slow groundwater seepage observed at 1.0 m depth.												
		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.10m 11-07-17

TEST PIT No. CWT-TP41
 PROJECT No. 121414915.300
 DATUM N/A


DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND with gravel (SP)			BS	1	0		-	-	-	-	-	-
1				▽	BS	2	0		-	900	nd	nd	nd	nd
		End of Test Pit												
		Groundwater seepage observed at 1.1 m depth.												
		Bedrock not encountered.												
2														



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 1.10m 11-07-17

TEST PIT No. CWT-TP42
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)									
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES				
0		Loose, brown, SAND (SP)																	
				▽	BS	1	1		-	-	-	-	-	-	-	-	-	-	-
					BS	2	1		-	280	nd	nd	nd	0.17					
		End of Test Pit																	
		Slow groundwater seepage observed at 1.1 m depth.																	
		Bedrock not encountered.																	
2																			



TEST PIT RECORD

CLIENT Department of Municipal Affairs and Environment
 PROJECT Phase II Environmental Site Assessment, Former U.S. Military Site
 LOCATION Cartwright, NL
 DATES (mm-dd-yy): DUG 11-07-17 WATER LEVEL 0.40m 11-07-17

TEST PIT No. CWT-TP43
 PROJECT No. 121414915.300
 DATUM N/A

DEPTH (m)	ELEVATION (m)	DESCRIPTION	STRATA PLOT	WATER LEVEL	SAMPLES				PID READINGS (ppm)	CHEMICAL ANALYSIS (ppm)				
					TYPE	NUMBER	HYDROCARBON	ODOUR		OTHER TESTS	TPH	BENZENE	TOLUENE	ETHYLBENZENE
0		Loose, brown, SAND with gravel (SP)			BS	1	0	-	120	nd	nd	nd	nd	
		End of Test Pit Groundwater seepage observed at 0.4 m depth. Refusal on bedrock at 0.4 m depth.												

APPENDIX F

Laboratory Analytical Summary Tables

Table F.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

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	0.05	2.5	10	25	-	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	-	-
Former U.S. Military Cartwright Site - General Area												
CWT-SS42	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS42 Lab-Dup	-	nd	nd	nd	nd	nd	-	-	-	-	-	No
CWT-SS43	0 - 0.2	nd	nd	nd	nd	nd	nd	28	Yes	28	ULO	No
CWT-SS44	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS46	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS48	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS49	0 - 0.2	nd	nd	nd	nd	nd	nd	48	Yes	48	PLO	No
CWT-SS50	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS50 Lab-Dup	-	nd	nd	nd	nd	nd	-	-	-	-	-	No
CWT-SS51	0 - 0.2	nd	nd	nd	nd	nd	nd	24	Yes	24	PLO	No
CWT-SS52	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS53	0 - 0.2	nd	nd	nd	nd	nd	nd	18	Yes	18	ULO	No
CWT-SS54	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS55	0 - 0.2	nd	nd	nd	nd (0.10)	nd (5.0)	nd	140	Yes	140	ULO	No
CWT-SS56	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS57	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS58	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS59	0 - 0.3	nd	nd	nd	nd	nd	nd	550	Yes	550	ULO	No
CWT-SS60	0 - 0.2	nd	nd	nd	nd	nd	nd	21	Yes	21	ULO	No
CWT-SS61	0 - 0.2	nd	nd	nd	nd	nd	nd	27	Yes	27	ULO	No
CWT-SS62	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP33-BS1	0.1 - 0.6	nd	nd	nd	nd	nd	nd	100	Yes	100	LO	Yes
CWT-TP33-BS2	1.2 - 1.7	nd	nd	nd	nd	nd	nd	140	Yes	140	LO	No
CWT-TP34-BS1	0 - 0.4	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP43-BS1	0 - 0.4	nd	nd	nd	nd	nd	nd	117	Yes	120	FO/LO	Yes
CWT-TP111-BS1	0 - 0.4	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
Former Contractor Village (1951 - 1953)												
CWT-SS63	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS64	0 - 0.2	nd	nd	nd	nd	nd	nd	57	Yes	57	FO/LO - PLO	No
CWT-SS66	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS67	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS68	0 - 0.3	nd	nd	nd	nd	nd	nd	34	Yes	34	PLO	No
CWT-TP35-BS2	1.0 - 1.5	nd	nd	0.14	1.5	210	490	293	Yes	990	FO - LO - ULO	No
CWT-TP37-BS2	0.8 - 1.3	nd	nd	nd	nd	nd	nd	19	Yes	19	PLO	No
CWT-TP38-BS2	0.8 - 1.3	nd	nd	nd	nd	nd	15	28	Yes	43	FO - PLO	No
CWT-TP39-BS2	0.8 - 1.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP40-BS2	0.8 - 1.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP40-BS2 Lab-Dup	-	nd	nd	nd	nd	nd	-	-	-	-	-	No
CWT-TP41-BS2	0.9 - 1.4	nd	nd	nd	nd	70	830	nd	Yes	900	WFO	No
CWT-TP42-BS2	0.9 - 1.4	nd	nd	nd	0.17	260	27	nd	Yes	280	G/FO	No
CWT-TP106-BS2	1.0 - 1.5	nd	nd	0.047	0.4	120	330	69	Yes	520	WFO - PLO	No
CWT-TP109-BS2	0.9 - 1.4	nd	nd	nd	nd	25	68	nd	Yes	93	WFO	No
Main Complex												
CWT-SS14	0 - 0.2	nd	nd	nd	nd	nd	nd	313	Yes	310	LO	No
CWT-SS15	0 - 0.2	nd	nd	nd	nd	nd	nd	47	Yes	47	ULO	No
CWT-SS15 Lab-Dup	-	-	-	-	-	-	nd	45	-	-	-	No
CWT-SS16	0 - 0.2	nd	nd	nd	nd	nd	22	298	Yes	320	UFO/ULO - LO	No
CWT-SS17	0 - 0.2	nd	nd	nd	nd	nd	23	1,220	No	1,200	LO	No
CWT-SS18	0 - 0.2	nd	nd	nd	nd	nd	nd	48	Yes	48	LO	No
CWT-SS19	0 - 0.2	nd	nd	nd	nd	nd	nd	40	Yes	40	PLO	No
CWT-SS20	0 - 0.2	nd	nd	nd	nd	nd	nd	54	Yes	54	PLO	No
CWT-SS21	0 - 0.2	nd	0.23	nd	nd	nd	14	232	Yes	240	UFO/ULO - LO	No
CWT-SS22	0 - 0.2	nd	nd	nd	nd	nd	nd	168	Yes	170	FO/LO - PLO	No
CWT-SS23	0 - 0.2	nd	nd	nd	nd	nd	26	590	Yes	620	FO/LO	No
CWT-SS24	0 - 0.2	nd	nd	nd	nd	nd	nd	170	Yes	170	LO	No
CWT-SS25	0 - 0.2	nd	nd	nd	nd	nd	20	171	Yes	190	FO/LO	No
CWT-SS26	0 - 0.2	nd	nd	nd	nd	nd	nd	32	Yes	32	ULO	No
CWT-SS27	0 - 0.2	nd	nd	nd	nd	nd	nd	26	Yes	26	PLO	No
CWT-SS29	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS30	0 - 0.2	nd	nd	nd	nd	nd	nd	46	Yes	46	ULO	No
CWT-SS31	0 - 0.2	nd	nd	nd	nd	nd	nd	37	Yes	37	PLO	No
CWT-SS32	0 - 0.2	nd	nd	nd	nd	nd	nd	23	Yes	23	PLO	No
CWT-SS33	0 - 0.2	nd	nd	nd	nd	nd	nd	25	Yes	25	ULO	No
CWT-SS34	0 - 0.2	nd	nd	nd	nd	nd	1,000	27,000	No	27,000	FO/LO	No
CWT-SS34 Lab-Dup	-	-	-	-	-	-	1,000	25,000	-	-	-	No
CWT-SS36	0 - 0.2	nd	nd	nd	nd	nd	300	99	Yes	400	FO	No

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 >C₃₂. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C₃₂. Samples are considered to have returned to baseline if the area from C₃₂-C₃₆ is less than 10% of the area from C₁₀-C₃₂.
5 = Modified TPH = TPH C₆ - C₃₂ (excluding BTEX).
6 = Triple silica gel cleanup was used to remove organic interferences from sample extract on indicated samples.
"- " = not analyzed, not applicable or no applicable guideline.
RDL = Reportable Detection Limit.
nd = Not detected above standard RDL. nd (#) = Not detected above elevated RDL shown.
Underlined = Value exceeds Tier I ESLs - Plants and Soil Invertebrates (surface soil only)
Bold = Value exceeds Tier I ESLs - Wildlife and Livestock (surface soil only)
Shaded = Value exceeds Tier I RBSL

Resemblance:
FO = One product in the fuel oil range / fuel oil fraction ULO = Unidentified compounds in lube oil range WFO = Weathered fuel oil fraction
LO = One product in lube oil range / lube oil fraction PLO = Possible lube oil fraction G = One product in gasoline range
UFO = Unidentified compounds in fuel oil range

Table F.1 Results of Laboratory Analysis of Petroleum Hydrocarbons in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

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	0.05	2.5	10	25	-	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	-	-
Main Complex (cont'd)												
CWT-SS38	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS39	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS40	0 - 0.2	nd	nd	nd	nd	nd	nd	28	Yes	28	PLO	No
CWT-SS41	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP6-BS1	0 - 0.6	nd	nd	nd	nd	nd	nd	24	Yes	24	ULO	Yes
CWT-TP6-BS1 Lab-Dup	-	-	-	-	-	-	nd	33	-	-	-	Yes
CWT-TP7-BS1	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP8-BS2	0.3 - 0.6	nd	nd	nd	nd	nd	nd	21	Yes	21	PLO	No
CWT-TP9-BS1	0 - 0.3	nd	nd	nd	nd	nd	nd	74	Yes	74	LO	No
CWT-TP10-BS2	1.0 - 1.5	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP11-BS1	0 - 0.5	nd	nd	nd	nd	nd	nd	29	Yes	29	ULO	No
CWT-TP12-BS1	0 - 0.6	nd	nd	nd	nd	nd	nd	258	Yes	260	PLO	Yes
CWT-TP13-BS1	0 - 0.5	nd	nd	nd	nd	98	<u>5,100</u>	1,130	Yes	6,300	WFO	No
CWT-TP14-BS1	0.1 - 0.5	nd	nd	nd	nd	nd	21	179	Yes	200	FO/LO	Yes
CWT-TP15-BS1	0.1 - 0.6	nd	nd	nd	nd	nd	110	300	Yes	410	FO/LO	No
CWT-TP15-BS2	1.2 - 1.8	nd	nd	nd	nd	nd	170	440	Yes	610	FO/LO	No
CWT-TP16-BS2	1.1 - 1.6	nd	nd	nd	nd	nd	17	110	Yes	130	FO/LO	No
CWT-TP17-BS2	0.9 - 1.3	nd	nd	nd	nd	nd	nd	79	Yes	79	PLO - ULO	No
CWT-TP18-BS1	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP19-BS2	1.0 - 1.4	nd	nd	nd	nd	nd	nd	85	Yes	85	PLO - ULO	No
CWT-TP20-BS1	0.1 - 0.6	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP21-BS1	0 - 0.5	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP22-BS1	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP23-BS1	0 - 0.4	nd	nd	nd	nd	nd	nd	52	Yes	52	LO	Yes
CWT-TP24-BS1	0.2 - 0.7	nd	nd	nd	nd	nd	nd	106	Yes	110	LO	Yes
CWT-TP25-BS2	1.0 - 1.5	nd	nd	nd	nd	nd	14	431	No	440	LO	No
CWT-TP26-BS2	1.0 - 1.5	nd	nd	nd	nd	nd	nd	22	Yes	22	ULO	No
CWT-TP27-BS2	1.1 - 1.6	nd	nd	nd	nd	nd	nd	96	Yes	96	PLO - ULO	No
CWT-TP27-BS2 Lab-Dup	-	nd	nd	nd	nd	nd	nd	101	-	-	-	No
CWT-TP28-BS2	1.3 - 1.8	nd	nd	nd	nd	nd	28	148	Yes	180	FO/LO	No
CWT-TP29-BS2	1.2 - 1.7	nd	nd	nd	nd	nd	14	96	Yes	110	FO/LO	No
CWT-TP30-BS2	1.0 - 1.5	nd	nd	nd	nd	nd	33	520	No	560	FO/LO - UFO/ULO	No
CWT-TP31-BS2	1.2 - 1.7	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP32-BS1	0 - 0.5	nd	nd	nd	nd	nd	nd	20	Yes	20	LO	Yes
CWT-TP32-BS2	1.0 - 1.5	nd	nd	nd	nd	nd	nd	31	Yes	31	PLO	No
CWT-TP100-BS1	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP102-BS1	0.1 - 0.6	nd	nd	nd	nd	nd	nd	nd	-	nd	-	Yes
CWT-TP103-BS2	1.0 - 1.4	nd	nd	nd	nd	nd	nd	30	Yes	30	ULO	No
Former USAF Dump Area and Former Ammunition Storage Area												
CWT-SS1	0 - 0.2	nd	nd	nd	nd	nd	75	287	Yes	360	FO/LO	No
CWT-SS1 Lab-Dup	-	-	-	-	-	-	48	216	-	-	-	No
CWT-SS2	0 - 0.2	nd	nd	nd	nd	nd	140	<u>6,380</u>	Yes	6,500	UFO/ULO - LO	No
CWT-SS3	0 - 0.2	nd	nd	nd	nd	nd	nd	20	Yes	20	PLO	No
CWT-SS4	0 - 0.2	nd	nd	nd	nd	nd	nd	23	Yes	23	PLO	No
CWT-SS5	0 - 0.2	nd	nd	nd	nd	nd	nd	nd	NA	nd	-	No
CWT-SS7	0 - 0.3	nd	nd	nd	nd	nd	nd	29	Yes	29	ULO - PLO	No
CWT-SS7 Lab-Dup	-	-	-	-	-	-	nd	27	-	-	-	No
CWT-SS9	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS10	0 - 0.3	nd	nd	nd	nd	9.3	15	nd	Yes	24	FO	No
CWT-SS11	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS12	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SS12 Lab-Dup	-	nd	nd	nd	nd	nd	-	-	-	-	-	No
CWT-SS70	0 - 0.3	nd	nd	nd	nd	nd	nd	29	Yes	29	ULO	No
CWT-TP1-BS1	0 - 0.3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP3-BS2	0.4 - 0.8	nd	nd	nd	nd	nd	17	296	No	310	LO	No
CWT-TP4-BS1	0 - 0.5	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-TP5-BS2	0.3 - 0.6	nd	nd	nd	nd	nd	nd	157	Yes	160	LO	No

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 >C₃₂. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C₃₂. Samples are considered to have returned to baseline if the area from C₃₂-C₃₆ is less than 10% of the area from C₁₀-C₃₂.

5 = Modified TPH = TPH C₆ - C₃₂ (excluding BTEX).

6 = Triple silica gel cleanup was used to remove organic interferences from sample extract on indicated samples.

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

RDL = Reportable Detection Limit.

nd = Not detected above standard RDL. nd (#) = Not detected above elevated RDL shown.

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

Bold = Value exceeds Tier I ESLs - Wildlife and Livestock (surface soil only).

Shaded = Value exceeds Tier I RBSL.

Resemblance:

FO = One product in the fuel oil range / fuel oil fraction. ULO = Unidentified compounds in lube oil range. WFO = Weathered fuel oil fraction.
LO = One product in lube oil range / lube oil fraction. PLO = Possible lube oil fraction. G = One product in gasoline range.
UFO = Unidentified compounds in fuel oil range.

**Table F.2 Results of Laboratory Analysis of Petroleum Hydrocarbon Fractionation in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300**

Parameters	RDL	Units	Tier I ESLs - Plants and Soil Inv. ¹	Tier I ESLs - Wildlife and Livestock ²	Tier I RBLSs ³	Former Contractor Village (1951 - 1953)	Main Complex	Former USAF Dump Area and Former Ammunition Storage Area
						CWT-TP36-BS2	CWT-TP13-BS2	CWT-TP2-BS2
Sample Depth:						1.2 - 1.7	1.0 - 1.5	0.3 - 0.7
Benzene	0.025	mg/kg	180	18	2.5	nd	nd	nd
Toluene	0.025	mg/kg	250	980	10,000	nd	nd	nd
Ethylbenzene	0.025	mg/kg	300	640	10,000	nd	nd	nd
Xylenes	0.05	mg/kg	350	2600	110	nd	nd	nd
Modified TPH - Tier II ⁴	15	mg/kg	-	-	870/4,000/ 10,000	260	6,700	58
> C ₈ -C ₁₀ Aromatic	0.1	mg/kg	-	-	-	nd	3.1	nd
> C ₁₀ -C ₁₂ Aromatic	4.0	mg/kg	-	-	-	38	81	nd (20)
> C ₁₂ -C ₁₆ Aromatic	15	mg/kg	-	-	-	19	590	nd
> C ₁₆ -C ₂₁ Aromatic	15	mg/kg	-	-	-	nd	400	nd
> C ₂₁ -C ₃₂ Aromatic	15	mg/kg	-	-	-	nd	130	31
> C ₈ -C ₁₀ Aliphatic	1	mg/kg	-	-	-	nd	2.5	nd
> C ₈ -C ₁₀ Aliphatic	1	mg/kg	-	-	-	24	100	nd
> C ₁₀ -C ₁₂ Aliphatic	8.0	mg/kg	-	-	-	130	1,200	nd
> C ₁₂ -C ₁₆ Aliphatic	15	mg/kg	-	-	-	43	3,400	nd
> C ₁₆ -C ₂₁ Aliphatic	15	mg/kg	-	-	-	nd	650	nd
> C ₂₁ -C ₃₂ Aliphatic	15	mg/kg	-	-	-	nd	110	27
F1 (C ₆ -C ₁₀)	-	mg/kg	320	11,000	-	24	106	nd
F2 (C ₁₀ -C ₁₆)	-	mg/kg	260	9,800	-	230	5,271	nd
F3 (C ₁₆ -C ₃₂)	-	mg/kg	1,700	16,000	-	nd	1,290	58
Returned to Baseline? ⁵						Yes	Yes	Yes
Resemblance						G/FO	WFO	FO/LO
Triple Silica Gel Clean-Up?						No	No	No

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 (RBLSs) (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 C₆ - C₃₂ (excluding BTEX).

5 = Atlantic Partnership in RBCA Implementation analytical method does not analyze for >C₃₂. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C₃₂. Samples are considered to have returned to baseline if the area from C₃₂-C₃₆ is less than 10% of the area from C₁₀-C₃₂.

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.

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

Bold = Value exceeds Tier I ESLs - Wildlife and Livestock (surface soil only).

Shaded = Value exceeds Tier I RBLSs.

Resemblance:

FO = One product in the fuel oil range / fuel oil fraction.

WFO = Weathered fuel oil fraction.

LO = One product in lube oil range / lube oil fraction.

G = One product in gasoline range.

**Table F.3 Results of Laboratory Analysis of VOCs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300**

Volatile Organics	RDL	Units	Guideline	Former Contractors Village (1953 - 1951)			Main Complex								Former USAF Dump Area and Former Ammunition Storage Area			
				CWT-SS67	CWT-TP36-BS2	CWT-TP104-BS2	CWT-SS13	CWT-SS16	CWT-SS34	CWT-SS36	CWT-TP8-BS2	CWT-TP11-BS1	CWT-TP26-BS2	CWT-TP28-BS2	CWT-TP30-BS2	CWT-SS11	CWT-TP5-BS2	
Sample depth (m)				0 - 0.3	1.2 - 1.7	1.2 - 1.7	0 - 0.3	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0.3 - 0.6	0 - 0.5	1.0 - 1.5	1.3 - 1.8	1.0 - 1.5	0 - 0.3	0.3 - 0.6
1,1,1-Trichloroethane	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	25	µg/kg	50,000 ¹	nd	nd	nd (150)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2-Trichloroethane	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethane	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,1-Dichloroethylene	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichlorobenzene	25	µg/kg	10,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloroethane	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,2-Dichloropropane	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,3-Dichlorobenzene	25	µg/kg	10,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
1,4-Dichlorobenzene	25	µg/kg	10,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	25	µg/kg	2,500 ² , 180,000 ³ , 18,000 ⁴	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromodichloromethane	25	µg/kg	18,000 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromoform	25	µg/kg	610 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bromomethane	50	µg/kg	50 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chlorobenzene	25	µg/kg	10,000 ¹	nd	nd	nd (32)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroethane	200	µg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,2-Dichloroethylene	25	µg/kg	55,000 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,3-Dichloropropene	25	µg/kg	180 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Dibromochloromethane	25	µg/kg	2,500 ⁵	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	25	µg/kg	10,000,000 ² , 300,000 ³ , 640,000 ⁴	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Ethylene Dibromide	25	µg/kg	50 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Methylene Chloride (Dichloromethane)	25	µg/kg	50,000 ¹	nd	36	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
o-Xylene	25	µg/kg	110,000 ² , 350,000 ³ ,	nd	nd	63	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
p+m-Xylene	25	µg/kg	2,600,000 ⁴	nd	nd	110	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Styrene	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethylene (PCE)	25	µg/kg	600 ⁵	nd	nd	nd	nd	170	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	25	µg/kg	10,000,000 ² , 250,000 ³ , 980,000 ⁴	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2-Dichloroethylene	25	µg/kg	50,000 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,3-Dichloropropene	25	µg/kg	180 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethylene (TCE)	10	µg/kg	10 ¹	nd	nd	nd	nd	nd	nd	14	nd	nd	nd	nd	nd	nd	nd	nd
Trichlorofluoromethane (FREON 11)	25	µg/kg	32,000 ⁶	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vinyl Chloride	20	µg/kg	4.3 ⁵	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	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).
 - 2 = Atlantic Partnership in RBCA (Risk-Based Corrective Action) Implementation Tier I Risk-Based Screening Levels (RBSLs) (Table 4a) for a commercial site with non-potable groundwater (July 2012, revised January 2015).
 - 3 = Atlantic Partnership in RBCA 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.
 - 4 = 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.
 - 5 = 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).
 - 6 = 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 standard RDL.
nd (#) = Not detected above elevated RDL shown.
"-" = Not analyzed, not applicable or no applicable guideline.
Shaded = Value exceeds the applicable guideline.

Table F.4 Results of Laboratory Analysis of PAHs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	B(a)P PEF	HH Guidelines	CCME CSQG ^{EH}	Former U.S. Military Cartwright Site - General Area					Former Contractor Village (1951 - 1953)				Main Complex					
						CWT-SS49	CWT-SS52	CWT-SS55	CWT-SS58	CWT-SS61	CWT-SS63	CWT-SS66	CWT-TP36-BS2	CWT-TP41-BS1	CWT-TP41-BS1 Lab-Dup	CWT-TP104-BS2	CWT-SS13	CWT-SS20	CWT-SS23	CWT-SS32
Sample Depth (m):						0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.3	1.2-1.7	0.9-1.4	-	1.2-1.7	0-0.3	0-0.2	0-0.2	0-0.2
Non-Carcinogenic PAHs																				
1-Methylnaphthalene	0.010	mg/kg	-	160 ³	-	nd	nd	nd	nd	nd	nd	nd	0.083	nd	nd	0.25	nd	nd	nd	nd
2-Methylnaphthalene	0.010	mg/kg	-	160 ³	-	nd	nd	nd	nd	nd	nd	nd	0.11	nd	nd	0.51	nd	nd	nd	nd
Acenaphthene	0.010	mg/kg	-	43,000 ²	0.28 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.013	0.029	nd	0.056	nd
Acenaphthylene	0.010	mg/kg	-	6.6 ³	320 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Anthracene	0.010	mg/kg	-	30,000 ²	32 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.069	0.015	0.062	nd
Fluoranthene	0.010	mg/kg	-	50,000 ²	180 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.36	0.074	0.47	0.025
Fluorene	0.010	mg/kg	-	39,000 ²	0.25 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.021	0.021	nd	0.041	nd
Naphthalene	0.010	mg/kg	-	25 ²	0.013 ¹	nd	nd	nd	nd	nd	nd	nd	<i>nd (0.026)</i>	nd	nd	0.21	nd	nd	0.017	nd
Perylene	0.010	mg/kg	-	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.032	0.02	0.038	nd
Phenanthrene	0.010	mg/kg	-	-	0.046 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.012	0.22	0.022	0.34	nd
Pyrene	0.010	mg/kg	-	30,000 ²	100 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.27	0.066	0.33	0.022
Carcinogenic PAHs																				
Benzo(a)anthracene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.13	0.038	0.18	nd
Benzo(a)pyrene	0.010	mg/kg	1	-	72 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.1	0.072	0.15	nd
Benzo(b)fluoranthene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.075	0.18	0.14	0.013
Benzo(g,h,i)perylene	0.010	mg/kg	0.01	-	13 ³	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.069	0.089	0.11	nd
Benzo(j)fluoranthene	0.010	mg/kg	0.1	-	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.048	0.077	0.086	nd
Benzo(k)fluoranthene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.049	0.075	0.086	nd
Chrysene	0.010	mg/kg	0.01	-	14 ³	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.14	0.12	0.21	0.023
Dibenzo(a,h)anthracene	0.010	mg/kg	1	-	10 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.016	0.025	0.024	nd
Indeno(1,2,3-c,d)pyrene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.056	0.085	0.097	nd
B(a)P TPE			-	5.3 ^{1,4}	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.15	0.14	0.24	0.01

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 1 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 standard RDL.

nd (#) = Not detected above elevated RDL shown.

mbs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Bold = Value exceeds the Human Health guideline

Shaded = Value exceed the Ecological guideline

Underlined/Italicized = RDL exceeds the Human Health or Ecological guideline

Table F.4 Results of Laboratory Analysis of PAHs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	B(a)P PEF	HH Guidelines	CCME CSQG ^{EH}	Main Complex (conf'd)														
						CWT-SS35	CWT-SS37	CWT-TP7-BS1	CWT-TP7-BS1 Lab-Dup	CWT-TP8-BS2	CWT-TP11-BS1	CWT-TP15-BS2	CWT-TP17-BS1	CWT-TP19-BS1	CWT-TP22-BS1	CWT-TP25-BS2	CWT-TP26-BS1	CWT-TP28-BS1	CWT-TP30-BS1	CWT-TP31-BS1
Sample Depth (m):						0-0.2	0-0.2	0-0.3	-	0.3-0.6	0-0.5	1.2-1.8	0-0.5	0-0.5	0-0.3	1.0-1.5	0-0.5	0-0.5	0.1-0.6	0.1-0.6
Non-Carcinogenic PAHs																				
1-Methylnaphthalene	0.010	mg/kg	-	160 ³	-	nd	nd (0.053)	nd	nd	nd	nd	0.41	0.018	nd	nd	nd	nd	nd	0.019	nd
2-Methylnaphthalene	0.010	mg/kg	-	160 ³	-	0.018	nd (0.095)	nd	nd	nd	nd	0.68	0.039	nd	nd	0.016	nd	nd	0.044	nd
Acenaphthene	0.010	mg/kg	-	43,000 ²	0.28 ¹	nd	nd (0.049)	nd	nd	nd	nd	4	0.096	nd	nd	0.088	nd	nd	1.8	nd
Acenaphthylene	0.010	mg/kg	-	6.6 ³	320 ¹	nd	nd (0.088)	nd	nd	nd	0.019	0.043	0.048	nd	nd	nd	nd	nd	0.08	nd
Anthracene	0.010	mg/kg	-	30,000 ²	32 ¹	nd	nd (0.056)	nd	nd	nd	0.047	5.6	0.49	nd	nd	0.14	nd	nd	0.53	nd
Fluoranthene	0.010	mg/kg	-	50,000 ²	180 ¹	nd	0.05	nd	nd	nd	0.22	22	4.2	nd	nd	0.7	nd	nd	9.8	nd
Fluorene	0.010	mg/kg	-	39,000 ²	0.25 ¹	nd	nd (0.14)	nd	nd	nd	nd	3.4	0.18	nd	nd	0.072	nd	nd	1.3	nd
Naphthalene	0.010	mg/kg	-	25 ²	0.013 ¹	nd	nd (0.12)	nd	nd	nd	nd	1.6	0.067	nd	nd	0.026	nd	nd	0.014	nd
Perylene	0.010	mg/kg	-	-	-	nd	nd	nd	nd	nd	nd	1.8	0.26	nd	nd	0.073	nd	nd	0.098	nd
Phenanthrene	0.010	mg/kg	-	-	0.046 ¹	nd	nd (0.049)	nd	nd	nd	0.062	20	1.1	nd	nd	0.57	nd	nd	4.3	nd
Pyrene	0.010	mg/kg	-	30,000 ²	100 ¹	0.025	0.24	nd	nd	nd	0.18	16	4.9	nd	nd	0.52	nd	nd	6.1	nd
Carcinogenic PAHs																				
Benzo(a)anthracene	0.010	mg/kg	0.1	-	10 ¹	nd	nd (0.087)	nd	nd	nd	0.066	9.1	1.7	nd	nd	0.26	nd	nd	1.5	nd
Benzo(a)pyrene	0.010	mg/kg	1	-	72 ¹	nd	nd	nd	nd	nd	0.042	6.9	1.3	nd	nd	0.25	nd	nd	0.36	nd
Benzo(b)fluoranthene	0.010	mg/kg	0.1	-	10 ¹	0.033	0.18	nd	nd	nd	0.096	5.7	1.8	nd	nd	0.25	nd	nd	0.48	nd
Benzo(g,h,i)perylene	0.010	mg/kg	0.01	-	13 ³	nd	nd (0.035)	nd	nd	nd	0.027	3.1	0.57	nd	nd	0.15	nd	nd	0.087	nd
Benzo(j)fluoranthene	0.010	mg/kg	0.1	-	-	nd	nd	nd	nd	nd	0.053	3.5	1	nd	nd	0.14	nd	nd	0.3	nd
Benzo(k)fluoranthene	0.010	mg/kg	0.1	-	10 ¹	nd	nd (0.025)	nd	nd	nd	0.052	3.4	1	nd	nd	0.14	nd	nd	0.28	nd
Chrysene	0.010	mg/kg	0.01	-	14 ³	nd	1.1	nd	nd	nd	0.19	9.1	2.1	nd	nd	0.32	nd	nd	1.2	nd
Dibenzo(a,h)anthracene	0.010	mg/kg	1	-	10 ¹	nd	nd	nd	nd	nd	nd	0.91	0.14	nd	nd	0.037	nd	nd	0.024	nd
Indeno(1,2,3-c,d)pyrene	0.010	mg/kg	0.1	-	10 ¹	0.018	nd	nd	nd	nd	0.026	3.1	0.55	nd	nd	0.12	nd	nd	0.086	nd
B(a)P TPE			-	5.3 ^{1,4}	-	0.02	0.05	0.01	0.01	0.01	0.08	10.41	2.07	0.01	0.01	0.38	0.01	0.01	0.66	0.01

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 1 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 standard RDL.

nd (#) = Not detected above elevated RDL shown.

mbs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Bold = Value exceeds the Human Health guideline

Shaded = Value exceed the Ecological guideline

Underlined/Italicized = RDL exceeds the Human Health or Ecological guideline

Table F.4 Results of Laboratory Analysis of PAHs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	B(a)P PEF	HH Guidelines	CCME CSQG ^{EH}	Main Complex (cont'd)	Former USAF Dump Area and Former Ammunition Storage Area			
						CWT-TP101-BS1	CWT-SS8	CWT-SS10	CWT-TP2-BS2	CWT-TP5-BS2
Sample Depth (m):						0-0.5	0-0.3	0-0.3	0.3-0.7	0.3-0.6
Non-Carcinogenic PAHs										
1-Methylnaphthalene	0.010	mg/kg	-	160 ³	-	nd	nd	nd	nd	0.04
2-Methylnaphthalene	0.010	mg/kg	-	160 ³	-	nd	nd	nd	nd	0.047
Acenaphthene	0.010	mg/kg	-	43,000 ²	0.28 ¹	nd	nd	nd	nd	0.065
Acenaphthylene	0.010	mg/kg	-	6.6 ³	320 ¹	nd	nd	nd	nd	nd
Anthracene	0.010	mg/kg	-	30,000 ²	32 ¹	nd	nd	nd	nd	nd
Fluoranthene	0.010	mg/kg	-	50,000 ²	180 ¹	nd	nd	nd	0.015	nd
Fluorene	0.010	mg/kg	-	39,000 ²	0.25 ¹	nd	nd	nd	nd	0.034
Naphthalene	0.010	mg/kg	-	25 ²	0.013 ¹	nd	nd	nd	0.015	0.054
Perylene	0.010	mg/kg	-	-	-	nd	0.15	nd	nd	nd
Phenanthrene	0.010	mg/kg	-	-	0.046 ¹	nd	nd	nd	0.027	0.052
Pyrene	0.010	mg/kg	-	30,000 ²	100 ¹	nd	nd	nd	0.017	nd
Carcinogenic PAHs										
Benzo(a)anthracene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd
Benzo(a)pyrene	0.010	mg/kg	1	-	72 ¹	nd	nd	nd	nd	nd
Benzo(b)fluoranthene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd
Benzo(g,h,i)perylene	0.010	mg/kg	0.01	-	13 ³	nd	0.15	nd	nd	nd
Benzo(j)fluoranthene	0.010	mg/kg	0.1	-	-	nd	nd	nd	nd	nd
Benzo(k)fluoranthene	0.010	mg/kg	0.1	-	10 ¹	nd	nd	nd	nd	nd
Chrysene	0.010	mg/kg	0.01	-	14 ³	nd	nd	nd	0.013	nd
Dibenzo(a,h)anthracene	0.010	mg/kg	1	-	10 ¹	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
B(a)P TPE			-	5.3 ^{1,4}	-	0.01	0.01	0.01	0.01	0.01

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 1 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 standard RDL.

nd (#) = Not detected above elevated RDL shown.

mbs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Bold = Value exceeds the Human Health guideline

Shaded = Value exceed the Ecological guideline

Underlined/Italicized = RDL exceeds the Human Health or Ecological guideline

Table F.5 Results of Laboratory Analysis of Available Metals in Soil

Phase II Environmental Site Assessment
 Former Military Site, Cartwright, NL
 Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area										Former Contractors Village (1951 - 1953)							
				CWT-SS43	CWT-SS44	CWT-SS48	CWT-SS49	CWT-SS52	CWT-SS54	CWT-SS56	CWT-SS57	CWT-SS58	CWT-SS60	CWT-SS62	CWT-SS63	CWT-SS65	CWT-SS67	CWT-SS68	CWT-TP36 BS1	CWT-TP37 BS1	CWT-TP37 BS1 Lab-Dup
Sample Depth (m):				0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.3	0 - 0.3	0 - 0.3	0.1 - 0.6	0 - 0.5	-	
Aluminum	10	mg/kg	-	4,800	5,100	3,300	4,700	3,600	7,700	1,900	11,000	25,000	7,800	6,400	2,300	3,700	2,300	4,300	3,700	3,500	3,400
Antimony	2	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Arsenic	2	mg/kg	26 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	2.2	nd	nd	nd	nd
Barium	5	mg/kg	2,000 ¹	27	40	35	59	18	18	35	48	40	41	90	13	34	17	35	36	31	31
Beryllium	2	mg/kg	8 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth	2	mg/kg	-	nd	nd	nd	nd	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	nd	nd	nd	nd
Cadmium	0.3	mg/kg	22 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Chromium	2	mg/kg	87 ¹	7.5	11	9.1	8.6	7.5	9.3	nd	4.4	19	11	5	3.7	7.3	3.5	7.3	10	5.7	6
Cobalt	1	mg/kg	300 ²	1.5	3.1	2.1	2.3	nd	nd	nd	1.1	1.4	2.8	1.5	1.4	2	1.7	2.4	2.6	2	1.8
Copper	2	mg/kg	91 ¹	6.9	6	2.5	7.7	nd	3.2	nd	nd	3	6.1	5.4	3.1	5	4.6	4	6.3	8.5	8.5
Iron	50	mg/kg	-	10,000	13,000	15,000	13,000	6,100	6,900	6,300	34,000	36,000	20,000	23,000	6,900	8,800	8,800	11,000	9,600	7,400	7,600
Lead	0.5	mg/kg	600 ¹	4.4	4.3	2.5	5.8	6.8	3.8	1.6	3.4	6.2	4.6	8.1	4	23	8.1	9.9	6.1	5	5.1
Lithium	2	mg/kg	-	nd	4	3.5	4.7	nd	nd	nd	3.2	3.1	4.4	3.7	2.8	4.6	3.1	4.4	3.3	3.3	3.2
Manganese	2	mg/kg	-	110	150	160	220	46	64	80	340	240	260	510	71	120	95	140	130	110	120
Mercury	0.1	mg/kg	50 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Molybdenum	2	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Nickel	2	mg/kg	89 ¹	2.9	5.1	3.8	3.2	nd	nd	nd	nd	nd	3.5	nd	2.5	3.6	3	3.5	6.3	3	3
Rubidium	2	mg/kg	-	3.9	6.9	5.5	11	3.3	2	10	8.5	8.1	6.7	8.1	3.2	6.3	3.8	7.4	6.4	7.7	7.2
Selenium	1	mg/kg	2.9 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5	mg/kg	-	8.1	8.6	6.7	9.3	nd	6.4	nd	nd	nd	7.8	6.4	7.8	7.9	6.3	8.2	10	8.9	9.6
Thallium	0.1	mg/kg	1 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tin	2	mg/kg	300 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	2.4	nd	nd	nd	29	nd	nd
Uranium	0.1	mg/kg	300 ¹	0.26	0.35	0.25	0.27	0.37	0.44	nd	0.16	0.69	0.43	0.26	0.3	0.27	0.19	0.28	0.31	0.29	0.27
Vanadium	2	mg/kg	130 ¹	19	28	29	21	24	16	nd	23	45	32	12	9.3	15	8.6	19	19	14	14
Zinc	5	mg/kg	360 ¹	48	23	22	39	6	8.4	11	42	42	29	54	12	29	23	25	34	26	27

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

Italicized/Underlined = Poor relative percent difference in laboratory initiated duplicate samples due to sample inhomogeneity

Table F.5 Results of Laboratory Analysis of Available Metals in Soil

Phase II Environmental Site Assessment
 Former Military Site, Cartwright, NL
 Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former Contractors Village (1951 - 1953) (cont'd)				Main Complex													
				CWT-TP39-BS1	CWT-TP40-BS1	CWT-TP42-BS1	CWT-TP105-BS1	CWT-SS13	CWT-SS14	CWT-SS14 Lab-Dup	CWT-SS14 Lab-Dup 2	CWT-SS16	CWT-SS18	CWT-SS20	CWT-SS22	CWT-SS24	CWT-SS26	CWT-SS28	CWT-SS30	CWT-SS31	CWT-SS32
Sample Depth (m):				0 - 0.5	0 - 0.5	0.1 - 0.6	0.1 - 0.6	0 - 0.3	0 - 0.2	-	-	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	
Aluminum	10	mg/kg	-	3,100	4,100	4,600	5,300	4,800	4,800	4,700	-	7,800	6,000	8,100	5,800	4,100	5,700	6,000	5,200	4,800	8,900
Antimony	2	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Arsenic	2	mg/kg	26 ¹	nd	nd	nd	2.1	nd	nd	nd	-	2.2	nd	nd	nd	nd	nd	nd	nd	nd	nd
Barium	5	mg/kg	2,000 ¹	28	42	32	32	61	63	65	-	140	36	54	47	48	67	33	39	79	46
Beryllium	2	mg/kg	8 ²	nd	nd	nd	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth	2	mg/kg	-	nd	nd	nd	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	nd	nd	nd
Cadmium	0.3	mg/kg	22 ¹	nd	nd	nd	nd	2.3	0.82	0.79	-	0.76	nd	1.3	0.69	nd	nd	nd	1.1	0.77	49
Chromium	2	mg/kg	87 ¹	6.6	7.5	14	18	14	14	13	-	21	11	17	11	9.1	9.3	11	11	8	13
Cobalt	1	mg/kg	300 ²	1.6	2.7	2.7	2.9	3.2	3.1	2.7	-	4.8	2.8	3.2	2.9	2.5	2.4	2.8	3.3	1.8	2.6
Copper	2	mg/kg	91 ¹	5.2	7.4	3.7	4	19	36	30	-	24	6.5	13	37	9.4	5.5	9.6	12	12	7.6
Iron	50	mg/kg	-	8,500	8,200	16,000	21,000	18,000	12,000	12,000	-	22,000	13,000	20,000	15,000	13,000	16,000	14,000	12,000	17,000	16,000
Lead	0.5	mg/kg	600 ¹	9	15	1.9	2.7	120	110	95	-	200	24	23	63	63	13	20	18	62	11
Lithium	2	mg/kg	-	2.9	3.8	5.5	5.8	4.9	5.7	5.8	-	8.3	4.8	5.1	5	4	5.8	4	5.4	3.7	4.3
Manganese	2	mg/kg	-	95	120	120	150	240	220	220	-	380	200	310	260	220	280	160	220	460	180
Mercury	0.1	mg/kg	50 ¹	nd	nd	nd	nd	0.14	nd	nd	-	0.18	nd	nd	nd	nd	nd	nd	nd	nd	nd
Molybdenum	2	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Nickel	2	mg/kg	89 ¹	2.8	5.4	4.9	4.9	6.5	6	5.5	-	12	4.6	6	5.3	4.2	3.8	5.8	6.3	2.5	4.1
Rubidium	2	mg/kg	-	4.6	8.1	6.3	5.6	7.1	5.9	6	-	13	5.9	4.9	6.4	5.6	8.2	5.4	6.8	5.2	8
Selenium	1	mg/kg	2.9 ¹	nd	nd	nd	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5	mg/kg	-	7	11	7.8	10	16	29	30	-	17	11	22	14	8.5	10	13	16	11	20
Thallium	0.1	mg/kg	1 ¹	nd	nd	nd	nd	nd	nd	nd	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tin	2	mg/kg	300 ²	nd	nd	nd	nd	3.2	6.8	3.5	-	3.3	nd	nd	nd	nd	nd	nd	nd	nd	nd
Uranium	0.1	mg/kg	300 ¹	0.33	0.34	0.53	0.73	0.34	0.27	0.31	-	0.59	0.36	0.68	0.4	0.3	0.42	0.38	0.49	0.29	0.37
Vanadium	2	mg/kg	130 ¹	15	16	43	61	26	19	21	-	21	26	34	25	21	24	31	26	13	31
Zinc	5	mg/kg	360 ¹	23	23	17	19	310	170	94	96	750	71	290	130	55	62	73	86	120	1,400

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

Italicized/Underlined = Poor relative percent difference in laboratory initiated duplicate samples due to sample inhomogeneity

Table F.5 Results of Laboratory Analysis of Available Metals in Soil

Phase II Environmental Site Assessment
 Former Military Site, Cartwright, NL
 Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Main Complex (cont'd)																		
				CWT-SS32 Lab-Dup	CWT-SS34	CWT-SS35	CWT-SS36	CWT-SS37	CWT-SS41	CWT-TP6- BS1	CWT-TP8- BS2	CWT-TP10- BS1	CWT-TP11- BS1	CWT-TP14- BS1	CWT-TP15- BS1	CWT-TP16- BS1	CWT-TP18- BS1	CWT-TP20- BS1	CWT-TP21- BS1	CWT-TP23- BS1	CWT-TP24- BS1	
Sample Depth (m):				-	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.6	0.3 - 0.6	0 - 0.5	0 - 0.5	0.1 - 0.5	0.1 - 0.6	0 - 0.5	0 - 0.3	0.1 - 0.6	0 - 0.5	0 - 0.4	0.2 - 0.7
Aluminum	10	mg/kg	-	8,700	8,900	6,600	17,000	7,700	9,000	5,100	7,400	16,000	6,100	4,900	6,200	5,600	5,800	5,200	6,900	7,100	6,200	
Antimony	2	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Arsenic	2	mg/kg	26 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Barium	5	mg/kg	2,000 ¹	51	28	40	450	76	39	20	89	28	42	62	57	40	22	28	43	22	40	
Beryllium	2	mg/kg	8 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth	2	mg/kg	-	nd	nd	nd	nd	nd	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	nd	nd	nd	nd	nd
Cadmium	0.3	mg/kg	22 ¹	52	1.2	nd	nd	0.34	6.5	nd	nd	nd	nd	nd	0.38	nd	nd	nd	nd	nd	nd	nd
Chromium	2	mg/kg	87 ¹	13	18	12	73	10	17	12	9.2	18	11	9.4	12	10	15	16	12	12	14	
Cobalt	1	mg/kg	300 ²	2.6	3.4	2.5	14	2.9	2.7	1.5	2.2	2.1	2	2.7	2.9	2.5	2.9	3.4	3.3	2.3	2.4	
Copper	2	mg/kg	91 ¹	7.7	9	5.5	3.3	6.1	9.6	3.6	4.5	4.3	7	6.1	13	5	6.8	7.3	7.1	12	9.9	
Iron	50	mg/kg	-	16,000	20,000	14,000	31,000	12,000	21,000	14,000	21,000	18,000	15,000	15,000	16,000	14,000	17,000	18,000	15,000	15,000	13,000	
Lead	0.5	mg/kg	600 ¹	14	9.4	7.5	2	6.6	24	7.2	18	3.1	9.4	22	43	3.2	2.5	3.2	7.4	5.2	9	
Lithium	2	mg/kg	-	3.7	4.2	3.1	8.2	2.3	3	nd	2.9	2.7	3.4	4.4	4.7	4.9	3.1	3.3	4.6	3	3.9	
Manganese	2	mg/kg	-	170	180	170	290	170	170	95	260	110	190	370	230	200	130	140	180	120	140	
Mercury	0.1	mg/kg	50 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Molybdenum	2	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Nickel	2	mg/kg	89 ¹	4.6	6.6	4.2	40	4.8	5.6	2.5	2.8	3.9	3.6	3.4	5.5	3.9	5.4	5.4	5.3	3.9	4.3	
Rubidium	2	mg/kg	-	8.1	4.8	6	35	5.7	4.4	2.7	19	3.2	4.9	7.2	7.9	6.7	3.5	3.7	6.8	3.2	5.9	
Selenium	1	mg/kg	2.9 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5	mg/kg	-	21	11	11	10	12	14	12	11	11	13	17	17	10	10	11	16	11	9.4	
Thallium	0.1	mg/kg	1 ¹	nd	nd	nd	0.25	nd	nd	0.18	nd	0.13	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tin	2	mg/kg	300 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Uranium	0.1	mg/kg	300 ¹	0.4	0.56	0.45	0.17	0.46	0.43	0.39	0.37	0.47	0.4	0.34	0.48	0.48	0.43	0.4	0.43	0.41	0.42	
Vanadium	2	mg/kg	130 ¹	30	41	27	88	28	42	29	36	45	27	23	31	29	41	46	32	35	32	
Zinc	5	mg/kg	360 ¹	1,300	48	33	57	51	300	37	42	16	45	86	120	27	16	18	34	50	36	

Notes:

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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

Italicized/Underlined = Poor relative percent difference in laboratory initiated duplicate samples due to sample inhomogeneity

Table F.5 Results of Laboratory Analysis of Available Metals in Soil

Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Main Complex (cont'd)									Former USAF Dump Area and Former Ammunition Storage Area								
				CWT-TP25-BS1	CWT-TP26-BS1	CWT-TP27-BS2	CWT-TP28-BS1	CWT-TP29-BS2	CWT-TP30-BS1	CWT-TP31-BS2	CWT-TP100-BS1	CWT-TP101-BS1	CWT-TP102-BS1	CWT-SS1	CWT-SS2	CWT-SS3	CWT-SS4	CWT-SS7	CWT-SS8	CWT-SS10	CWT-SS11
Sample Depth (m):				0.1 - 0.5	0 - 0.5	1.1 - 1.6	0 - 0.5	1.2 - 1.7	0.1 - 0.6	1.2 - 1.7	0 - 0.3	0 - 0.5	0.1 - 0.6	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.3	0 - 0.3	0 - 0.3	0 - 0.3
Aluminum	10	mg/kg	-	8,100	8,000	6,100	6,400	6,500	6,300	13,000	6,100	6,700	4,500	5,300	3,900	5,000	3,700	6,600	5,600	6,200	4,200
Antimony	2	mg/kg	40 ²	nd	nd	nd	nd	nd	5.4	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Arsenic	2	mg/kg	26 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Barium	5	mg/kg	2,000 ¹	66	94	25	28	28	73	170	27	64	26	77	30	93	49	49	100	41	14
Beryllium	2	mg/kg	8 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth	2	mg/kg	-	nd	nd	nd	nd	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	nd	nd	nd	nd
Cadmium	0.3	mg/kg	22 ¹	2.3	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	0.44	nd	nd
Chromium	2	mg/kg	87 ¹	17	5.5	11	12	12	6.8	5.2	15	6.1	14	6	6.3	5	5	11	4.4	13	7.4
Cobalt	1	mg/kg	300 ²	3	2	2.2	2.2	2.5	1.7	2.2	2.7	1.8	2.8	2	1.5	1.7	1.8	2.5	1.4	2.7	1
Copper	2	mg/kg	91 ¹	20	4.8	4.9	7.9	6.4	9	7.4	6.8	4	6.6	6.8	4.1	7.2	11	9.1	7.2	7.7	nd
Iron	50	mg/kg	-	18,000	29,000	13,000	12,000	14,000	18,000	43,000	16,000	23,000	16,000	18,000	11,000	19,000	13,000	11,000	30,000	14,000	13,000
Lead	0.5	mg/kg	600 ¹	92	7.5	4.4	6.9	5.1	14	5.3	2.9	5.9	2.3	9.8	12	11	25	3.7	5.4	5.1	6.6
Lithium	2	mg/kg	-	4.8	4.2	2.8	3.2	3.1	3.5	6.8	3.1	3.2	2.7	4.6	2.6	4.2	3.6	5.1	nd	3.7	nd
Manganese	2	mg/kg	-	290	760	110	120	150	470	760	140	450	130	450	130	540	350	150	290	220	81
Mercury	0.1	mg/kg	50 ¹	0.18	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Molybdenum	2	mg/kg	40 ²	9.7	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	2.6	nd	nd
Nickel	2	mg/kg	89 ¹	6.6	nd	3.5	3.8	4.1	5.3	nd	5.4	nd	4.7	2.3	2.4	2.4	2.9	8.2	4.1	4.6	nd
Rubidium	2	mg/kg	-	5.2	13	4.6	5.3	4.8	6.3	18	4	9.2	3	5.9	5.5	6.4	5.5	5.3	2.2	5.8	6
Selenium	1	mg/kg	2.9 ¹	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5	mg/kg	-	24	6	8	9.4	9.5	7	7.2	9.7	5.7	11	7.8	5.2	8.1	5.7	12	37	12	<5.0
Thallium	0.1	mg/kg	1 ¹	nd	nd	nd	nd	nd	nd	0.11	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tin	2	mg/kg	300 ²	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Uranium	0.1	mg/kg	300 ¹	0.59	0.36	0.41	0.39	0.41	0.43	0.67	0.43	0.3	0.38	0.37	0.25	0.34	0.33	0.55	0.36	0.48	0.31
Vanadium	2	mg/kg	130 ¹	32	19	31	30	33	18	7.5	37	19	38	14	20	13	11	24	9.3	33	30
Zinc	5	mg/kg	360 ¹	570	77	50	68	25	110	120	18	55	14	78	26	80	45	150	380	29	12

Notes:

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

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RDL = Reportable Detection Limit.

nd = Not detected above RDL.

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Table F.5 Results of Laboratory Analysis of Available Metals in Soil

Phase II Environmental Site Assessment
 Former Military Site, Cartwright, NL
 Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former USAF Dump Area and Former Ammunition Storage Area (cont'd)							
				CWT-SS12	CWT-SS70	CWT-TP1-BS1	CWT-TP2-BS2	CWT-TP3-BS2	CWT-TP4-BS1	CWT-TP4-BS1 Lab-Dup	CWT-TP5-BS2
Sample Depth (m):				0 - 0.3	0 - 0.3	0 - 0.3	0.3 - 0.7	0.4 - 0.8	0 - 0.5	-	0.3 - 0.6
Aluminum	10	mg/kg	-	4,400	6,400	7,900	6,500	6,200	7,400	7,500	5,800
Antimony	2	mg/kg	40 ²	nd	nd	nd	2.7	3.2	nd	nd	nd
Arsenic	2	mg/kg	26 ¹	nd	nd	nd	nd	nd	nd	nd	nd
Barium	5	mg/kg	2,000 ¹	21	48	15	37	39	14	15	58
Beryllium	2	mg/kg	8 ²	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd
Boron	50	mg/kg	120 ³	nd	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.3	mg/kg	22 ¹	nd	nd	nd	0.65	2	nd	nd	nd
Chromium	2	mg/kg	87 ¹	8.6	12	9.7	13	13	10	9.9	12
Cobalt	1	mg/kg	300 ²	nd	2.5	1.1	3.2	4.1	2.1	2.7	1.7
Copper	2	mg/kg	91 ¹	3.5	8.9	nd	47	25	4.5	4.6	3
Iron	50	mg/kg	-	3300	11,000	20,000	18,000	13,000	13,000	15,000	12,000
Lead	0.5	mg/kg	600 ¹	4.6	3.4	5.1	65	180	6.6	5.8	3.2
Lithium	2	mg/kg	-	nd	4.8	nd	3.4	3.6	2.6	2.9	2.6
Manganese	2	mg/kg	-	52	140	75	230	160	90	110	110
Mercury	0.1	mg/kg	50 ¹	nd	nd	nd	0.13	0.14	nd	nd	nd
Molybdenum	2	mg/kg	40 ²	nd	nd	nd	nd	6	nd	nd	nd
Nickel	2	mg/kg	89 ¹	2.1	7.3	nd	6.5	12	4	4.9	3.2
Rubidium	2	mg/kg	-	2.4	5.4	2.7	4.6	4.9	2.7	3.1	3.7
Selenium	1	mg/kg	2.9 ¹	nd	nd	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	40 ²	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5	mg/kg	-	5.1	11	5.3	10	12	6.3	7.4	12
Thallium	0.1	mg/kg	1 ¹	nd	nd	nd	nd	nd	nd	nd	nd
Tin	2	mg/kg	300 ²	nd	nd	nd	6.1	14	nd	nd	nd
Uranium	0.1	mg/kg	300 ¹	0.39	0.53	0.46	0.42	0.4	0.54	0.38	0.45
Vanadium	2	mg/kg	130 ¹	13	23	26	29	29	38	40	22
Zinc	5	mg/kg	360 ¹	6.1	130	11	170	1,800	17	19	170

Notes:

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RDL = Reportable Detection Limit.

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Shaded = Value exceeds applicable guideline

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Table F.6 Results of Laboratory Analysis of PCBs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline ¹	Former U.S. Military Cartwright Site - General Area												Former Contractors Village (1951 - 1953)				
				CWT-SS42	CWT-SS43	CWT-SS44	CWT-SS45	CWT-SS46	CWT-SS47	CWT-SS48	CWT-SS49	CWT-SS50	CWT-SS51	CWT-SS57	CWT-SS62	CWT-SS62 Lab-Dup	CWT-SS64	CWT-SS66	CWT-SS68	CWT-TP35 BS1
Sample Depth (m):				0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	0-0.2	-	0-0.2	0-0.3	0-0.3	0.1-0.6	0-0.5
Aroclor 1016	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	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	nd	nd	nd	nd	nd	nd
Aroclor 1232	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	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	nd	nd	nd	nd	nd	nd
Aroclor 1242	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1260	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Calculated Total PCB	0.050	µg/g	33	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	-	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

mbgs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Table F.6 Results of Laboratory Analysis of PCBs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline ¹	Former Contractors Village (1951 - 1953) (cont'd)						Main Complex												
				CWT-TP38 BS1	CWT-TP39 BS1	CWT-TP39 BS1 Lab- Dup	CWT-TP41 BS1	CWT-TP42 BS1	CWT- TP105- BS1	CWT-SS15	CWT-SS15 Lab-Dup	CWT-SS17	CWT-SS19	CWT-SS21	CWT-SS23	CWT-SS25	CWT-SS27	CWT-SS29	CWT-SS31	CWT-SS33	CWT-SS34	
Sample Depth (m):				0 - 0.5	0 - 0.5	-	0.1 - 0.5	0.1 - 0.6	0.1 - 0.6	0 - 0.2	-	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2	0 - 0.2		
Aroclor 1016	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd (0.15)	
Aroclor 1221	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd (0.15)
Aroclor 1232	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd (0.15)
Aroclor 1248	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd (0.15)
Aroclor 1242	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd (0.15)
Aroclor 1254	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	1.4	nd	nd	nd	nd	nd	nd	nd	0.18
Aroclor 1260	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	0.14	0.13	0.12	0.10	0.60	1.5	0.26	0.42	nd	2.0	0.15	nd (0.15)	
Calculated Total PCB	0.050	µg/g	33	nd	nd	-	nd	nd	nd	0.14	-	0.12	0.10	2.0	1.5	0.26	0.42	nd	2.0	0.15	0.18	

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

mbgs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Table F.6 Results of Laboratory Analysis of PCBs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline ¹	Main Complex (cont'd)																			
				CWT-SS36	CWT-TP6-BS1	CWT-TP6-BS1 Lab-Dup	CWT-TP8-BS2	CWT-TP9-BS1	CWT-TP10-BS1	CWT-TP12-BS1	CWT-TP13-BS2	CWT-TP15-BS1	CWT-TP16-BS1	CWT-TP17-BS1	CWT-TP18-BS1	CWT-TP20-BS1	CWT-TP21-BS1	CWT-TP23-BS1	CWT-TP25-BS1	CWT-TP26-BS1	CWT-TP27-BS1		
Sample Depth (m):				0 - 0.2	0 - 0.6	-	0.3 - 0.6	0 - 0.3	0 - 0.5	0 - 0.6	1.0 - 1.5	0.1 - 0.6	0 - 0.5	0 - 0.5	0 - 0.3	0.1 - 0.6	0 - 0.5	0 - 0.4	0.1 - 0.5	0 - 0.5	0.1 - 0.6		
Aroclor 1016	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	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	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	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	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	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	0.12	nd	nd	nd	nd	nd	nd	nd	0.69	nd	nd	nd	nd
Aroclor 1260	0.050	µg/g	-	nd	nd	nd	nd	0.20	nd	nd	nd	0.14	nd	nd	nd	0.25	0.14	0.078	0.57	nd	nd	nd	nd
Calculated Total PCB	0.050	µg/g	33	nd	nd	-	nd	0.20	nd	nd	0.12	0.14	nd	nd	nd	0.25	0.14	0.078	1.3	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

mbgs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Table F.6 Results of Laboratory Analysis of PCBs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline ¹	Main Complex (cont'd)								Former USAF Dump Area and Former Ammunition Storage Area									
				CWT-TP28-BS1	CWT-TP29-BS1	CWT-TP30-BS1	CWT-TP31-BS1	CWT-TP100-BS1	CWT-TP101-BS1	CWT-TP102-BS1	CWT-TP110-BS2	CWT-SS5	CWT-SS6	CWT-SS7	CWT-SS9	CWT-SS10	CWT-SS11	CWT-SS12	CWT-SS70	CWT-TP1-BS1	CWT-TP2-BS2
Sample Depth (m):				0-0.5	0.1-0.6	0.1-0.6	0.1-0.6	0-0.3	0-0.5	0.1-0.6	1.0-1.5	0-0.2	0-0.2	0-0.3	0-0.3	0-0.3	0-0.3	0-0.3	0-0.3	0-0.3	0.3-0.7
Aroclor 1016	0.050	µg/g	-	nd	nd	nd (0.10)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1221	0.050	µg/g	-	nd	nd	nd (0.10)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1232	0.050	µg/g	-	nd	nd	nd (0.10)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1248	0.050	µg/g	-	nd	nd	nd (0.10)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1242	0.050	µg/g	-	nd	nd	nd (0.10)	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.050	µg/g	-	nd	nd	nd (0.10)	nd	nd	nd	nd	0.13	nd	nd	nd	nd	nd	nd	nd	nd	nd	1
Aroclor 1260	0.050	µg/g	-	nd	0.072	nd (0.10)	nd	nd	nd	0.20	nd	1.4	2.6	3.0	0.48	0.11	nd	0.071	0.40	nd	1.2
Calculated Total PCB	0.050	µg/g	33	nd	0.072	nd (0.10)	nd	nd	nd	0.20	0.13	1.4	2.6	3.0	0.48	0.11	nd	0.071	0.40	nd	2.2

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

mbgs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Table F.6 Results of Laboratory Analysis of PCBs in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline ¹	Fomer USAF Dump Area and Former Ammunition Storage Area (cont'd)		
				CWT-TP3-BS2	CWT-TP4-BS1	CWT-TP5-BS2
Sample Depth (m):				0.4 - 0.8	0 - 0.5	0.3 - 0.6
Aroclor 1016	0.050	µg/g	-	nd	nd	nd
Aroclor 1221	0.050	µg/g	-	nd	nd	nd
Aroclor 1232	0.050	µg/g	-	nd	nd	nd
Aroclor 1248	0.050	µg/g	-	nd	nd	nd
Aroclor 1242	0.050	µg/g	-	nd	nd	nd
Aroclor 1254	0.050	µg/g	-	nd	nd	nd
Aroclor 1260	0.050	µg/g	-	24	0.27	nd
Calculated Total PCB	0.050	µg/g	33	24	0.27	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

mbgs = metres below ground surface

"-" = Not applicable or no applicable guideline.

Table F.7 Results of Laboratory Analysis of Asbestos in Soil
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Sample ID	Sample Depth	Asbestos
	RDL	NA
	Units	mg/kg
Former Contractor Village (1951 - 1953)		
CWT-SS65	0 - 0.3	nd
Main Complex		
CWT-SS13	0 - 0.2	<1% chrysotile
CWT-SS28	0 - 0.2	nd
CWT-SS35	0 - 0.2	nd
CWT-SS37	0 - 0.2	nd
CWT-TP27-BS1	0.1 - 0.6	nd
CWT-TP29-BS1	0.1 - 0.6	nd
Former USAF Dump Area and Former Ammunition Storage Area		
CWT-SS8	0 - 0.3	nd
CWT-TP2-BS2	0.3 - 0.7	nd

Notes:

RDL = Reportable Detection Limit. No detection limit given.
 nd = None Detected.

Table F.8 Results of Laboratory Analysis of Petroleum Hydrocarbons in Freshwater Sediment
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

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	25	-	15	-	-
Tier I ESLs - Aquatic Life¹	1.2	1.4	1.2	1.3	-	-	-	-	15/25/43	-	-
Former U.S. Military Cartwright Site - General Area											
CWT-SED-2	nd (0.050)	nd (0.050)	nd (0.050)	nd (0.10)	nd (5.0)	nd	nd	-	nd	-	No
CWT-SED-3	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
Former Contractors Village (1951 - 1953)											
CWT-SED-4	nd	nd	nd	nd	nd	nd	nd	-	nd	-	No
CWT-SED-4 Lab-Dup	-	-	-	-	-	nd	nd	-	-	-	No
CWT-SED-5	nd	nd	nd	nd	nd	120	1,300	No	1,400	FO/LO, LO	No
Main Complex											
CWT-SED-6	nd	nd	nd	nd	nd	nd	39	Yes	39	ULO, PLO	No
Fomer USAF Dump Area and Former Ammunition Storage Area											
CWT-SED-7	nd	0.1	nd	nd	nd	nd	135	Yes	140	ULO, PLO	No
CWT-SED-8	nd	nd	nd	nd	nd	nd	590	Yes	590	ULO	No

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 >C₃₂. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C₃₂. Samples are considered to have returned to baseline if the area from C₃₂-C₃₆ is less than 10% of the area from C₁₀-C₃₂.

3 = Modified TPH = TPH C₆ - C₃₂ (excluding BTEX).

4 = Triple silica gel cleanup was used to remove organic interferences from sample extract.

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.

Shaded = Value exceeds Tier I ESL - Freshwater and Marine Aquatic Life.

Resemblance:

FO/LO = One product in fuel/lube range.

LO = Lube oil fraction.

ULO = Unidentified compounds in lube oil range.

PLO = Possible lube oil fraction.

Table F.9 Results of Laboratory Analysis of PAHs in Freshwater Sediment
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area		Former Contractors Village (1951 - 1953)		Main Complex	Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	CWT-SED-8
1-Methylnaphthalene	0.010	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.010	mg/kg	0.201 ¹	nd	nd	nd	nd	nd	nd	nd
Acenaphthene	0.010	mg/kg	0.0889 ¹	nd	nd	nd	nd	nd	nd	nd
Acenaphthylene	0.010	mg/kg	0.128 ¹	nd	nd	nd	nd	nd	nd	nd
Anthracene	0.010	mg/kg	0.245 ¹	nd	nd	nd	nd	nd	nd	nd
Fluoranthene	0.010	mg/kg	2.355 ¹	nd	nd	nd	nd	0.022	nd	nd
Fluorene	0.010	mg/kg	0.144 ¹	nd	nd	nd	nd	0.064	nd	nd
Naphthalene	0.010	mg/kg	0.391 ¹	nd	nd	nd	nd	0.1	nd	nd
Perylene	0.010	mg/kg	-	nd	nd	nd	nd	0.058	nd	nd
Phenanthrene	0.010	mg/kg	0.515 ¹	nd	nd	nd	nd	0.041	nd	nd
Pyrene	0.010	mg/kg	0.875 ¹	nd	nd	nd	nd	0.045	nd	nd
Benzo(a)anthracene	0.010	mg/kg	0.385 ¹	nd	0.02	nd	nd	0.06	nd	nd
Benzo(a)pyrene	0.010	mg/kg	0.782 ¹	nd	nd	nd	nd	0.017	nd	nd
Benzo(b)fluoranthene	0.010	mg/kg	-	nd	0.035	nd	0.016	0.026	nd	nd
Benzo(g,h,i)perylene	0.010	mg/kg	0.17 ²	nd	nd	nd	nd	nd	nd	nd
Benzo(j)fluoranthene	0.010	mg/kg	-	nd	nd	nd	nd	0.059	nd	nd
Benzo(k)fluoranthene	0.010	mg/kg	0.24 ²	nd	nd	nd	nd	nd	nd	nd
Chrysene	0.010	mg/kg	0.862 ¹	nd	0.039	nd	0.16	nd	0.37	12
Dibenzo(a,h)anthracene	0.010	mg/kg	0.135 ¹	nd	0.021	nd	nd	nd	nd	nd
Indeno(1,2,3-c,d) pyrene	0.010	mg/kg	0.2 ²	nd	0.028	nd	nd	0.022	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 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.

":" = not analyzed, not applicable or no applicable guideline.

Shaded = Value exceeds applicable guideline.

**Table F.10 Results of Laboratory Analysis of Available Metals in Freshwater Sediment
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300**

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area		Former Contractors Village (1951 - 1953)		Main Complex	Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	CWT-SED-8
Aluminum	10	mg/kg	-	47,000	4,700	20,000	3,100	5,900	6,500	1,100
Antimony	2.0	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Arsenic	2.0	mg/kg	17 ¹	3	nd	2.8	nd	nd	nd	nd
Barium	5.0	mg/kg	-	45	30	180	19	32	68	120
Beryllium	2.0	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Bismuth	2.0	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Boron	50	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Cadmium	0.3	mg/kg	3.5 ¹	nd	nd	nd	nd	nd	nd	0.5
Chromium	2.0	mg/kg	90 ¹	11	9.7	43	6.9	13	7.9	nd
Cobalt	1.0	mg/kg	-	1.4	2.2	15	1.4	2.8	1.7	2.1
Copper	2.0	mg/kg	197 ¹	28	3	34	11	7	6	16
Iron	50	mg/kg	-	12,000	11,000	37,000	5,400	18,000	11,000	18,000
Lead	0.5	mg/kg	91.3 ¹	5.1	5.6	7.1	15	6.1	9.9	22
Lithium	2.0	mg/kg	-	nd	3	19	3.1	3.3	3.5	nd
Manganese	2.0	mg/kg	460 ³	49	100	470	93	180	230	250
Mercury	0.1	mg/kg	0.486 ¹	0.26	nd	nd	nd	nd	nd	nd
Molybdenum	2.0	mg/kg	-	4.2	nd	nd	nd	nd	nd	2.1
Nickel	2.0	mg/kg	16 ³	2.8	4.2	28	2.8	4.5	2.6	4.3
Rubidium	2.0	mg/kg	-	nd	4.8	50	3.9	5.1	5.4	nd
Selenium	1.0	mg/kg	-	3.2	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	2 ²	0.7	nd	nd	nd	nd	nd	1.5
Strontium	5.0	mg/kg	-	15	11	43	11	15	12	43
Thallium	0.1	mg/kg	-	nd	nd	0.31	nd	nd	nd	nd
Tin	2.0	mg/kg	-	nd	nd	nd	nd	nd	nd	3.7
Uranium	0.1	mg/kg	-	7	0.33	1.3	0.29	0.49	0.41	nd
Vanadium	2.0	mg/kg	-	10	20	73	10	36	21	nd
Zinc	5.0	mg/kg	315 ¹	8	17	80	14	38	56	160

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 Provincial 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 F.11 Results of Laboratory Analysis of PCBs in Freshwater Sediment
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area		Former Contractors Village (1951 - 1953)		Main Complex	Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	CWT-SED-8
Aroclor 1016	0.05	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Aroclor 1221	0.05	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Aroclor 1232	0.05	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Aroclor 1248	0.05	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Aroclor 1242	0.05	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.05	mg/kg	-	nd	nd	nd	nd	nd	nd	nd
Aroclor 1260	0.05	mg/kg	-	nd	nd	nd	nd	0.17	nd	nd
Calculated Total PCB	0.05	mg/kg	0.277	nd	nd	nd	nd	0.17	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 F.12 Results of Laboratory Analysis of Petroleum Hydrocarbons in Surface Water
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

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 Life¹	2.1	0.77	0.32	0.33	-	-	-	-	1.5 / 0.10 / 0.10	-
Former U.S. Military Cartwright Site - General Area										
CWT-SW-2	nd	nd	nd	nd	nd	nd	nd	-	nd	-
CWT-SW-3	nd	nd	nd	nd	nd	nd	nd	-	nd	-
Former Contractors Village (1951 - 1953)										
CWT-SW-5	nd	nd	nd	nd	nd	nd	nd	-	nd	-
Main Complex										
CWT-SW-6	nd	nd	nd	nd	nd	nd	nd	-	nd	-
Former USAF Dump Area and Former Ammunition Storage Area										
CWT-SW-7	nd	nd	nd	nd	nd	nd	nd	-	nd	-
CWT-SW-8	nd	nd	nd	nd	nd	nd	0.11	Yes	0.11	ULO

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 >C₃₂. Laboratory certificate indicates (Yes or No) whether chromatogram for each sample returns to baseline after C₃₂. Samples are considered to have returned to baseline if the area from C₃₂-C₃₆ is less than 10% of the area from C₁₀-C₃₂.

3 = Modified TPH = TPH C₆ - C₃₂ (excluding BTEX).

RDL = Reportable Detection Limit.

nd = Not detected above RDL.

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

Shaded = Value exceeds applicable guideline.

Resemblance:

ULO = Unidentified compounds in lube oil range.

Table F.13 Results of Laboratory Analysis of General Chemistry in Surface Water
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area	Main Complex		Former USAF Dump Area and Former Ammunition Storage Area		
				CWT-SW-3	CWT-SW-6	CWT-SW-6 Lab-Dup	CWT-SW-7	CWT-SW-8	CWT-SW-8 Lab-Dup
Calculated Parameters									
Anion Sum	N/A	me/L	-	0.18	1.02	-	0.3	0.33	-
Bicarb. Alkalinity (calc. as CaCO ₃)	1	mg/L	-	nd	31	-	5.9	nd	-
Calculated TDS	1	mg/L	-	17	79	-	24	21	-
Carb. Alkalinity (calc. as CaCO ₃)	1	mg/L	-	nd	nd	-	nd	nd	-
Cation Sum	N/A	me/L	-	0.3	1.6	-	0.31	0.36	-
Hardness (CaCO ₃)	1	mg/L	-	4.7	44	-	5.4	9	-
Ion Balance (% Difference)	N/A	%	-	25	22.1	-	1.64	4.35	-
Langelier Index (@ 20C)		-	-	-	-1.49	-	-4.63	-	-
Langelier Index (@ 4C)		-	-	-	-1.74	-	-4.88	-	-
Saturation pH (@ 20C)		-	-	-	8.65	-	10.5	-	-
Saturation pH (@ 4C)		-	-	-	8.9	-	10.7	-	-
Inorganics									
Total Alkalinity (Total as CaCO ₃)	5	mg/L	20 ^{1,6}	nd	31	-	5.9	nd	nd
Dissolved Chloride (Cl)	1	mg/L	120 ³	6.4	5	-	6.6	8.4	8.1
Colour	5	TCU	narrative ^{3,4}	190 ⁸	37	-	63 ⁸	330 ⁸	340 ⁸
Nitrate + Nitrite	0.05	mg/L	400 ⁷	nd	0.5	-	nd	1.3	1.3
Nitrogen (Ammonia Nitrogen)	0.05	mg/L	-	nd	0.21	-	0.058	0.087	-
Total Organic Carbon (C)	0.5	mg/L	-	18 ⁹	22 ⁹	-	18 ⁹	38 ⁹	-
Orthophosphate (P)	0.01	mg/L	-	nd	nd	-	nd	nd	nd
pH	N/A	pH	6.5 - 9.0 ³	5.78	7.16	-	5.83	4.35	-
Reactive Silica (SiO ₂)	0.5	mg/L	-	4.2	5.6	-	6.9	0.78	0.78
Dissolved Sulphate (SO ₄)	2	mg/L	218/309 ^{1,2}	nd	11	-	nd	nd	nd
Turbidity	0.1	NTU	narrative ^{3,5}	0.56	92	99	160	1.3	-
Conductivity	1	uS/cm	-	29	97	-	35	79	-

Notes:

1 = AEP Environmental Quality Guidelines for Alberta Surface Waters (July 2014) Table 1: Surface water quality guidelines for the protection of freshwater aquatic life (PAL).

2 = Varies with water hardness. For hardness < 30 mg/L, guideline = 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 minimum value

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

8 = Elevated reporting limit due to sample matrix.

9 = Elevated reporting limit due to turbidity.

RDL = Reportable Detection Limit

nd = Not detected above RDL.

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

Shaded = Value exceeds applicable guideline.

Table F.14 Results of Laboratory Analysis of PAHs in Surface Water
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area			Former Contractors Village (1951 - 1953)	Main Complex	Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-SW2	CWT-SW2 Lab-Dup	CWT-SW-3	CWT-SW-5	CWT-SW-6	CWT-SW-7	CWT-SW-8
1-Methylnaphthalene	0.050	µg/L	-	nd	nd (0.073)	nd	nd	nd	nd	nd
2-Methylnaphthalene	0.050	µg/L	-	nd	nd (0.073)	nd	nd	nd	nd	nd
Acenaphthene	0.010	µg/L	5.8 ¹	0.011	nd (0.015)	nd	nd	nd	nd	nd
Acenaphthylene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Anthracene	0.010	µg/L	0.012 ¹	nd	nd (0.015)	nd	nd	nd	nd	nd
Benzo(a)anthracene	0.010	µg/L	0.018 ¹	nd	nd (0.015)	nd	nd	nd	nd	nd
Benzo(a)pyrene	0.010	µg/L	0.015 ¹	nd	nd (0.015)	nd	nd	nd	nd	nd
Benzo(b)fluoranthene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Benzo(g,h,i)perylene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Benzo(j)fluoranthene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Benzo(k)fluoranthene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Chrysene	0.010	µg/L	1 ²	nd	nd (0.015)	nd	nd	0.011	nd	nd
Dibenzo(a,h,)anthracene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Fluoranthene	0.010	µg/L	0.04 ¹	0.025	0.038	nd	nd	0.022	0.01	0.011
Fluorene	0.010	µg/L	3 ¹	nd	nd (0.015)	nd	nd	nd	nd	nd
Indeno(1,2,3-c,d) pyrene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Naphthalene	0.20	µg/L	1.1 ¹	nd	nd (0.30)	nd	nd	nd	nd	nd
Perylene	0.010	µg/L	-	nd	nd (0.015)	nd	nd	nd	nd	nd
Phenanthrene	0.010	µg/L	0.4 ¹	0.024	0.034	0.019	0.021	0.03	0.016	0.021
Pyrene	0.010	µg/L	0.025 ¹	0.016	0.027	nd	nd	0.014	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 standard RDL.

nd (#) = Not detected above elevated RDL shown.

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

Table F.15 Results of Laboratory Analysis of Total Metals in Surface Water
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline ¹	Former U.S. Military Cartwright Site - General Area		Former Contractors Village (1951 - 1953)	Main Complex	Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-SW-2	CWT-SW-3	CWT-SW-5	CWT-SW-6	CWT-SW-7	CWT-SW-8
pH ² :				-	5.78	-	7.16	5.83	4.35
Hardness (mg/L as CaCO ₃) ² :				-	4.7	-	44	5.4	9
Aluminum Guideline ³				5	5	5	100	5	5
Cadmium Guideline ⁴				0.04	0.04	0.04	0.08	0.04	0.04
Copper Guideline ⁵				2.00	2.00	2.00	2.00	2.00	2.00
Lead Guideline ⁶				1.0	1.0	1.0	1.0	1.0	1.0
Nickel Guideline ⁷				25	25	25	25	25	25
Aluminum	5	µg/L	5 - 100 ^{1,3}	130	520	750	3,200	410	290
Antimony	1	µg/L	200 ⁸	nd	nd	nd	nd	nd	nd
Arsenic	1	µg/L	5 ¹	nd	nd	nd	nd	nd	nd
Barium	1	µg/L	10,000 ⁸	2.4	6.6	4.7	46	25	7.2
Beryllium	1	µg/L	56 ⁸	nd	nd	nd	nd	nd	nd
Bismuth	2	µg/L	-	nd	nd	nd	nd	nd	nd
Boron	50	µg/L	1500 ¹	nd	nd	nd	250	nd	nd
Cadmium	0.01	µg/L	0.04 - 0.37 ^{1,4}	nd	0.011	nd	0.18	0.018	0.03
Calcium	100	µg/L	-	900	790	1,100	15,000	1,100	1,600
Chromium	1	µg/L	-	nd	nd	nd	4.7	1.4	nd
Cobalt	0.4	µg/L	2.5 ⁹	nd	nd	nd	0.92	nd	nd
Copper	2	µg/L	2 - 4 ^{1,5}	nd	nd	2.7	8.2	nd	nd
Iron	50	µg/L	300 ¹	120	800	920	13,000	1,000	640
Lead	0.5	µg/L	1 - 7 ^{1,6}	nd	nd	2.0	3.0	nd	2.9
Magnesium	100	µg/L	-	460	670	910	1,400	630	1,200
Manganese	2	µg/L	-	2.2	17	8.2	120	12	44
Molybdenum	2	µg/L	73 ¹	nd	nd	nd	nd	nd	nd
Nickel	2	µg/L	25 - 150 ^{1,7}	nd	nd	nd	nd	nd	nd
Phosphorous	100	µg/L	-	nd	nd	nd	260	130	nd
Potassium	100	µg/L	-	230	180	290	1,900	380	110
Selenium	1	µg/L	1 ¹	nd	nd	nd	nd	nd	nd
Silver	0.1	µg/L	0.25 ¹	nd	nd	nd	nd	nd	nd
Sodium	100	µg/L	-	3,300	3,900	5,700	4,100	3,300	2,500
Strontium	2	µg/L	-	5.9	8.9	16	78	11	11
Thallium	0.1	µg/L	0.8 ¹	nd	nd	nd	nd	nd	nd
Tin	2	µg/L	-	6.2	nd	nd	nd	nd	nd
Titanium	2	µg/L	1,000 ⁸	2.2	10	16	160	4	10
Uranium	0.1	µg/L	15 ¹	nd	nd	nd	0.17	nd	nd
Vanadium	2	µg/L	-	nd	nd	nd	11	nd	nd
Zinc	5	µg/L	30 ¹	nd	nd	nd	20	12	18

Notes:

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

2 = From Table F.13

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(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(hardness)]-1.465}, for water hardness between 82 and 180 mg/L as CaCO₃

6 = Lead guideline [µg/L] = e^{1.273[ln(hardness)]-4.705}, for water hardness between 60 and 180 mg/L as CaCO₃

7 = Nickel guideline [µg/L] = e^{0.76[ln(hardness)]+1.06}, for hardness between 60 and 180 mg/L as CaCO₃

8 = AEP Environmental Quality Guidelines for Alberta Surface Waters (July 2014) Table 1: Surface water quality guidelines for the protection of freshwater aquatic life (PAL).

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 standard RDL.

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

Shaded = Value exceeds applicable guideline.

Table F.16 Results of Laboratory Analysis of PCBs in Surface Water
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area			Former Contractors Village (1951 - 1953)	Main Complex		Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-SW2	CWT-SW-3	CWT-SW-3 Lab-Dup	CWT-SW-5	CWT-SW-6	CWT-SW-6 Lab-Dup	CWT-SW-7	CWT-SW-8
Aroclor 1016	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1221	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1232	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1248	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1242	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1260	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd
Calculated Total PCB	0.05	ug/L	-	nd	nd	nd	nd	nd	nd	nd	nd

Notes:

RDL = Reportable Detection Limit.

nd = Not detected above RDL.

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

**Table F.17 Results of Laboratory Analysis of Available Metals in Vegetation
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300**

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area			Former Contractors Village (1951 - 1953)	Main Complex											Former USAF Dump Area and Former Ammunition Storage Area	
				CWT-VEG-5	CWT-VEG-9	CWT-BER-5	CWT-VEG-12	CWT-VEG-3	CWT-VEG-4	CWT-VEG-7	CWT-VEG-7 Lab-Dup	CWT-VEG-8	CWT-VEG-10	CWT-VEG-11	CWT-BERRY3	CWT-BERRY 4	CWT-BERRY 7	CWT-BERRY 8	CWT-VEG-1	CWT-VEG-2
Aluminum	10	mg/kg	-	660	120	14	660	210	3,200	280	240	170	140	1,100	1,200	34	36	34	110	110
Antimony	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Arsenic	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Barium	5	mg/kg	-	32	51	nd	60	43	56	41	40	28	31	120	34	33	32	20	49	37
Beryllium	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Boron	5	mg/kg	-	5.9	21	5.3	nd	16	12	21	22	16	17	12	9	7	7.7	8.4	11	13
Cadmium	0.3	mg/kg	-	nd	0.3	nd	nd	nd	0.44	nd	nd	nd	nd	0.58	nd	nd	nd	nd	nd	nd
Chromium	2	mg/kg	-	2.1	nd	nd	nd	nd	5.1	nd	nd	nd	nd	nd	110	nd	nd	nd	nd	nd
Cobalt	1	mg/kg	-	nd	nd	nd	nd	nd	1.9	nd	nd	nd	nd	nd	1.5	nd	nd	nd	nd	nd
Copper	2	mg/kg	-	2.4	4.4	4.5	3.4	2.9	25	6.9	6.9	2.9	2.9	12	5.6	2.9	2.8	2.8	4	6.4
Iron	50	mg/kg	-	750	140	nd	1,200	230	8,400	930	650	230	160	1,900	4,600	nd	nd	nd	67	180
Lead	0.5	mg/kg	-	2.9	1.1	nd	1.9	1.2	3.6	1.2	0.91	0.83	2.7	10	1.1	1.2	0.53	0.92	0.58	nd
Lithium	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Manganese	2	mg/kg	-	91	310	46	290	540	660	590	580	230	350	430	260	160	140	130	260	200
Molybdenum	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Nickel	2	mg/kg	-	nd	nd	nd	nd	nd	2.9	nd	nd	nd	nd	4.2	44	nd	nd	nd	nd	nd
Selenium	2	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Silver	0.5	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Strontium	5	mg/kg	-	26	18	nd	22	21	26	13	14	12	14	58	10	nd	nd	nd	34	18
Thallium	0.1	mg/kg	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Uranium	0.1	mg/kg	-	nd	nd	nd	nd	nd	0.21	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Vanadium	2	mg/kg	-	nd	nd	nd	nd	nd	13	nd	nd	nd	nd	nd	5	nd	nd	nd	nd	nd
Zinc	5	mg/kg	-	21	29	nd	31	29	65	120	110	13	16	680	25	6.6	6.7	6.7	23	20

Notes:

RDL = Reportable Detection Limit.

nd = Not detected above RDL.

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

Table F.18 Results of Laboratory Analysis of PCBs in Vegetation
Phase II Environmental Site Assessment
Former Military Site, Cartwright, NL
Stantec Project No. 121414915.300

Parameters	RDL	Units	Guideline	Former U.S. Military Cartwright Site - General Area					Former Contractors Village (1951 - 1953)	Main Complex										Former USAF Dump Area and Former Ammunition Storage Area		
				CWT-VEG-5	CWT-VEG-9	CWT-VEG-9 Lab-Dup	CWT-BER-5	CWT-BER-5 Lab-Dup	CWT-VEG-12	CWT-VEG-3	CWT-VEG-4	CWT-VEG-7	CWT-VEG-8	CWT-VEG-10	CWT-VEG-11	CWT-BERRY3	CWT-BERRY4	CWT-BERRY7	CWT-BERRY8	CWT-VEG-1	CWT-VEG-2	
Aroclor 1016	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	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	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	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	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	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1254	0.050	µg/g	-	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Aroclor 1260	0.050	µg/g	-	0.24	0.35	0.33	nd	nd	0.33	0.51	0.13	0.11	0.15	0.075	0.069	nd	nd	nd	nd	0.088	0.2	
Calculated Total PCB	0.050	µg/g	-	0.24	0.35	-	nd	-	0.33	0.51	0.13	0.11	0.15	0.075	0.069	nd	nd	nd	nd	0.088	0.2	

Notes:

RDL = Reportable Detection Limit

nd = Not detected above the standard RDL

"-" = Not applicable or no applicable guideline.

APPENDIX G

Laboratory Analytical Reports

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: n/a

Attention: Jim Slade

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

Report Date: 2017/10/27

Report #: R4806608

Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7N1793

Received: 2017/10/19, 10:14

Sample Matrix: Water
 # Samples Received: 6

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted		
Benzo(b/j)fluoranthene Sum (water) (1)	5	N/A	2017/10/27 N/A	Auto Calc.
TEH in Water (PIRI) (1)	6	2017/10/20	2017/10/24 ATL SOP 00113	Atl. RBCA v3.1 m
Metals Water Total MS (1)	4	2017/10/20	2017/10/20 ATL SOP 00058	EPA 6020A R1 m
Metals Water Total MS (1)	1	2017/10/20	2017/10/23 ATL SOP 00058	EPA 6020A R1 m
PAH in Water by GC/MS (SIM) (1)	5	2017/10/20	2017/10/27 ATL SOP 00103	EPA 8270D 2007 m
PCBs in water by GC/ECD (1)	5	2017/10/20	2017/10/24 ATL SOP 00107	EPA 8082A m
PCB Aroclor sum (water) (1)	5	N/A	2017/10/24 N/A	Auto Calc.
VPH in Water (PIRI) (1)	6	N/A	2017/10/21 ATL SOP 00118	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Water (1)	6	N/A	2017/10/24 N/A	Atl. RBCA v3 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

(1) This test was performed by Maxxam Bedford

Your Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: n/a

Attention: Jim Slade

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

Report Date: 2017/10/27
Report #: R4806608
Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7N1793
Received: 2017/10/19, 10:14

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

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

RBCA HYDROCARBONS IN WATER (WATER)

Maxxam ID		FJD268	FJD269	FJD270	FJD271	FJD272	FJD273		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		n/a	n/a	n/a	n/a	n/a	n/a		
	UNITS	CWT-SW-2	CWT-SW-3	CWT-SW-5	CWT-SW-6	CWT-SW-7	CWT-SW-8	RDL	QC Batch
Petroleum Hydrocarbons									
Benzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	5222396
Toluene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	5222396
Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	5222396
Total Xylenes	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	5222396
C6 - C10 (less BTEX)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222396
>C10-C16 Hydrocarbons	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222133
>C16-C21 Hydrocarbons	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222133
>C21-<C32 Hydrocarbons	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	0.10	5222133
Modified TPH (Tier1)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.11	0.10	5219962
Reached Baseline at C32	mg/L	NA	NA	NA	NA	NA	Yes	N/A	5222133
Hydrocarbon Resemblance	mg/L	NA	NA	NA	NA	NA	COMMENT (1)	N/A	5222133
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	93	91	95	97	92	95		5222133
n-Dotriacontane - Extractable	%	82	81	84	85	82	86		5222133
Isobutylbenzene - Volatile	%	77	77	77	71	78	73		5222396
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range.									

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

Maxxam ID		FJD269		FJD271	FJD272		FJD273		
Sampling Date		2017/10/13		2017/10/13	2017/10/13		2017/10/13		
COC Number		n/a		n/a	n/a		n/a		
	UNITS	CWT-SW-3	QC Batch	CWT-SW-6	CWT-SW-7	QC Batch	CWT-SW-8	RDL	QC Batch
Metals									
Total Aluminum (Al)	ug/L	520	5222289	3200	410	5222137	290	5.0	5222289
Total Antimony (Sb)	ug/L	<1.0	5222289	<1.0	<1.0	5222137	<1.0	1.0	5222289
Total Arsenic (As)	ug/L	<1.0	5222289	<1.0	<1.0	5222137	<1.0	1.0	5222289
Total Barium (Ba)	ug/L	6.6	5222289	46	25	5222137	7.2	1.0	5222289
Total Beryllium (Be)	ug/L	<1.0	5222289	<1.0	<1.0	5222137	<1.0	1.0	5222289
Total Bismuth (Bi)	ug/L	<2.0	5222289	<2.0	<2.0	5222137	<2.0	2.0	5222289
Total Boron (B)	ug/L	<50	5222289	250	<50	5222137	<50	50	5222289
Total Cadmium (Cd)	ug/L	0.011	5222289	0.18	0.018	5222137	0.030	0.010	5222289
Total Calcium (Ca)	ug/L	790	5222289	15000	1100	5222137	1600	100	5222289
Total Chromium (Cr)	ug/L	<1.0	5222289	4.7	1.4	5222137	<1.0	1.0	5222289
Total Cobalt (Co)	ug/L	<0.40	5222289	0.92	<0.40	5222137	<0.40	0.40	5222289
Total Copper (Cu)	ug/L	<2.0	5222289	8.2	<2.0	5222137	<2.0	2.0	5222289
Total Iron (Fe)	ug/L	800	5222289	13000	1000	5222137	640	50	5222289
Total Lead (Pb)	ug/L	<0.50	5222289	3.0	<0.50	5222137	2.9	0.50	5222289
Total Magnesium (Mg)	ug/L	670	5222289	1400	630	5222137	1200	100	5222289
Total Manganese (Mn)	ug/L	17	5222289	120	12	5222137	44	2.0	5222289
Total Molybdenum (Mo)	ug/L	<2.0	5222289	<2.0	<2.0	5222137	<2.0	2.0	5222289
Total Nickel (Ni)	ug/L	<2.0	5222289	<2.0	<2.0	5222137	<2.0	2.0	5222289
Total Phosphorus (P)	ug/L	<100	5222289	260	130	5222137	<100	100	5222289
Total Potassium (K)	ug/L	180	5222289	1900	380	5222137	110	100	5222289
Total Selenium (Se)	ug/L	<1.0	5222289	<1.0	<1.0	5222137	<1.0	1.0	5222289
Total Silver (Ag)	ug/L	<0.10	5222289	<0.10	<0.10	5222137	<0.10	0.10	5222289
Total Sodium (Na)	ug/L	3900	5222289	4100	3300	5222137	2500	100	5222289
Total Strontium (Sr)	ug/L	8.9	5222289	78	11	5222137	11	2.0	5222289
Total Thallium (Tl)	ug/L	<0.10	5222289	<0.10	<0.10	5222137	<0.10	0.10	5222289
Total Tin (Sn)	ug/L	<2.0	5222289	<2.0	<2.0	5222137	<2.0	2.0	5222289
Total Titanium (Ti)	ug/L	10	5222289	160	4.0	5222137	10	2.0	5222289
Total Uranium (U)	ug/L	<0.10	5222289	0.17	<0.10	5222137	<0.10	0.10	5222289
Total Vanadium (V)	ug/L	<2.0	5222289	11	<2.0	5222137	<2.0	2.0	5222289
Total Zinc (Zn)	ug/L	<5.0	5222289	20	12	5222137	18	5.0	5222289
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FJD270		
Sampling Date		2017/10/13		
COC Number		n/a		
	UNITS	CWT-SW-5	RDL	QC Batch
Metals				
Total Aluminum (Al)	ug/L	750	5.0	5222137
Total Antimony (Sb)	ug/L	<1.0	1.0	5222137
Total Arsenic (As)	ug/L	<1.0	1.0	5222137
Total Barium (Ba)	ug/L	4.7	1.0	5222137
Total Beryllium (Be)	ug/L	<1.0	1.0	5222137
Total Bismuth (Bi)	ug/L	<2.0	2.0	5222137
Total Boron (B)	ug/L	<50	50	5222137
Total Cadmium (Cd)	ug/L	<0.010	0.010	5222137
Total Calcium (Ca)	ug/L	1100	100	5222137
Total Chromium (Cr)	ug/L	<1.0	1.0	5222137
Total Cobalt (Co)	ug/L	<0.40	0.40	5222137
Total Copper (Cu)	ug/L	2.7	2.0	5222137
Total Iron (Fe)	ug/L	920	50	5222137
Total Lead (Pb)	ug/L	2.0	0.50	5222137
Total Magnesium (Mg)	ug/L	910	100	5222137
Total Manganese (Mn)	ug/L	8.2	2.0	5222137
Total Molybdenum (Mo)	ug/L	<2.0	2.0	5222137
Total Nickel (Ni)	ug/L	<2.0	2.0	5222137
Total Phosphorus (P)	ug/L	<100	100	5222137
Total Potassium (K)	ug/L	290	100	5222137
Total Selenium (Se)	ug/L	<1.0	1.0	5222137
Total Silver (Ag)	ug/L	<0.10	0.10	5222137
Total Sodium (Na)	ug/L	5700	100	5222137
Total Strontium (Sr)	ug/L	16	2.0	5222137
Total Thallium (Tl)	ug/L	<0.10	0.10	5222137
Total Tin (Sn)	ug/L	<2.0	2.0	5222137
Total Titanium (Ti)	ug/L	16	2.0	5222137
Total Uranium (U)	ug/L	<0.10	0.10	5222137
Total Vanadium (V)	ug/L	<2.0	2.0	5222137
Total Zinc (Zn)	ug/L	<5.0	5.0	5222137
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FJD269	FJD270	FJD271	FJD272	FJD273		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		n/a	n/a	n/a	n/a	n/a		
	UNITS	CWT-SW-3	CWT-SW-5	CWT-SW-6	CWT-SW-7	CWT-SW-8	RDL	QC Batch
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222153
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222153
Acenaphthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5220514
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Chrysene	ug/L	<0.010	<0.010	0.011	<0.010	<0.010	0.010	5222153
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Fluoranthene	ug/L	<0.010	<0.010	0.022	0.010	0.011	0.010	5222153
Fluorene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5222153
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153
Phenanthrene	ug/L	0.019	0.021	0.030	0.016	0.021	0.010	5222153
Pyrene	ug/L	<0.010	<0.010	0.014	<0.010	<0.010	0.010	5222153
Surrogate Recovery (%)								
D10-Anthracene	%	64	58	50	58	64		5222153
D14-Terphenyl	%	72	69	53	66	75		5222153
D8-Acenaphthylene	%	71	58	50	66	58		5222153
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		FJD269	FJD269	FJD270		FJD271	FJD271	FJD272		
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		n/a	n/a	n/a		n/a	n/a	n/a		
	UNITS	CWT-SW-3	CWT-SW-3 Lab-Dup	CWT-SW-5	QC Batch	CWT-SW-6	CWT-SW-6 Lab-Dup	CWT-SW-7	RDL	QC Batch
PCBs										
Aroclor 1016	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Aroclor 1221	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Aroclor 1232	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Aroclor 1248	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Aroclor 1242	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Aroclor 1254	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Aroclor 1260	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664
Calculated Total PCB	ug/L	<0.050		<0.050	5220380	<0.050		<0.050	0.050	5220380
Surrogate Recovery (%)										
Decachlorobiphenyl	%	52	69	61	5222421	62	63	60 (1)		5222664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate (1) PCB:Unidentified (possibly halogenated) compounds detected.										

Maxxam ID		FJD273		
Sampling Date		2017/10/13		
COC Number		n/a		
	UNITS	CWT-SW-8	RDL	QC Batch
PCBs				
Aroclor 1016	ug/L	<0.050	0.050	5222664
Aroclor 1221	ug/L	<0.050	0.050	5222664
Aroclor 1232	ug/L	<0.050	0.050	5222664
Aroclor 1248	ug/L	<0.050	0.050	5222664
Aroclor 1242	ug/L	<0.050	0.050	5222664
Aroclor 1254	ug/L	<0.050	0.050	5222664
Aroclor 1260	ug/L	<0.050	0.050	5222664
Calculated Total PCB	ug/L	<0.050	0.050	5220380
Surrogate Recovery (%)				
Decachlorobiphenyl	%	40		5222664
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

Maxxam Analytics International Corporation - Environmental Data Reporting

GENERAL COMMENTS

Results relate only to the items tested.

Maxxam Analytics International Corporation

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222133	Isobutylbenzene - Extractable	2017/10/23	91	30 - 130	90	30 - 130	88	%		
5222133	n-Dotriacontane - Extractable	2017/10/23	92	30 - 130	96	30 - 130	78	%		
5222153	D10-Anthracene	2017/10/26	76	50 - 130	97	50 - 130	99	%		
5222153	D14-Terphenyl	2017/10/26	83	50 - 130	86	50 - 130	95	%		
5222153	D8-Acenaphthylene	2017/10/26	73	50 - 130	100	50 - 130	112	%		
5222396	Isobutylbenzene - Volatile	2017/10/20	79	70 - 130	79	70 - 130	80	%		
5222421	Decachlorobiphenyl	2017/10/24	57	30 - 130	77	30 - 130	73	%		
5222664	Decachlorobiphenyl	2017/10/24	57	30 - 130	38	30 - 130	33	%		
5222133	>C10-C16 Hydrocarbons	2017/10/23	86	70 - 130	87	70 - 130	<0.050	mg/L	NC	40
5222133	>C16-C21 Hydrocarbons	2017/10/23	83	70 - 130	82	70 - 130	<0.050	mg/L	NC	40
5222133	>C21-<C32 Hydrocarbons	2017/10/23	93	70 - 130	94	70 - 130	<0.10	mg/L	NC	40
5222137	Total Aluminum (Al)	2017/10/20	99	80 - 120	101	80 - 120	<5.0	ug/L		
5222137	Total Antimony (Sb)	2017/10/20	101	80 - 120	103	80 - 120	<1.0	ug/L		
5222137	Total Arsenic (As)	2017/10/20	95	80 - 120	96	80 - 120	<1.0	ug/L		
5222137	Total Barium (Ba)	2017/10/20	103	80 - 120	103	80 - 120	<1.0	ug/L		
5222137	Total Beryllium (Be)	2017/10/20	96	80 - 120	97	80 - 120	<1.0	ug/L		
5222137	Total Bismuth (Bi)	2017/10/20	100	80 - 120	103	80 - 120	<2.0	ug/L		
5222137	Total Boron (B)	2017/10/20	96	80 - 120	97	80 - 120	<50	ug/L		
5222137	Total Cadmium (Cd)	2017/10/20	97	80 - 120	99	80 - 120	<0.010	ug/L		
5222137	Total Calcium (Ca)	2017/10/20	101	80 - 120	104	80 - 120	<100	ug/L		
5222137	Total Chromium (Cr)	2017/10/20	92	80 - 120	95	80 - 120	<1.0	ug/L		
5222137	Total Cobalt (Co)	2017/10/20	94	80 - 120	97	80 - 120	<0.40	ug/L		
5222137	Total Copper (Cu)	2017/10/20	90	80 - 120	95	80 - 120	<2.0	ug/L		
5222137	Total Iron (Fe)	2017/10/20	98	80 - 120	102	80 - 120	<50	ug/L		
5222137	Total Lead (Pb)	2017/10/20	96	80 - 120	99	80 - 120	<0.50	ug/L		
5222137	Total Magnesium (Mg)	2017/10/20	96	80 - 120	101	80 - 120	<100	ug/L		
5222137	Total Manganese (Mn)	2017/10/20	96	80 - 120	99	80 - 120	<2.0	ug/L		
5222137	Total Molybdenum (Mo)	2017/10/20	102	80 - 120	101	80 - 120	<2.0	ug/L		
5222137	Total Nickel (Ni)	2017/10/20	92	80 - 120	97	80 - 120	<2.0	ug/L		
5222137	Total Phosphorus (P)	2017/10/20	101	80 - 120	102	80 - 120	<100	ug/L		
5222137	Total Potassium (K)	2017/10/20	97	80 - 120	100	80 - 120	<100	ug/L		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222137	Total Selenium (Se)	2017/10/20	95	80 - 120	98	80 - 120	<1.0	ug/L		
5222137	Total Silver (Ag)	2017/10/20	97	80 - 120	99	80 - 120	<0.10	ug/L		
5222137	Total Sodium (Na)	2017/10/20	NC	80 - 120	96	80 - 120	<100	ug/L		
5222137	Total Strontium (Sr)	2017/10/20	101	80 - 120	104	80 - 120	<2.0	ug/L		
5222137	Total Thallium (Tl)	2017/10/20	100	80 - 120	103	80 - 120	<0.10	ug/L		
5222137	Total Tin (Sn)	2017/10/20	107	80 - 120	106	80 - 120	<2.0	ug/L		
5222137	Total Titanium (Ti)	2017/10/20	98	80 - 120	102	80 - 120	<2.0	ug/L		
5222137	Total Uranium (U)	2017/10/20	104	80 - 120	106	80 - 120	<0.10	ug/L	0.080	20
5222137	Total Vanadium (V)	2017/10/20	95	80 - 120	98	80 - 120	<2.0	ug/L		
5222137	Total Zinc (Zn)	2017/10/20	94	80 - 120	96	80 - 120	<5.0	ug/L		
5222153	1-Methylnaphthalene	2017/10/26	71	30 - 130	89	30 - 130	<0.050	ug/L	NC	40
5222153	2-Methylnaphthalene	2017/10/26	75	30 - 130	95	30 - 130	<0.050	ug/L	NC	40
5222153	Acenaphthene	2017/10/26	81	30 - 130	103	30 - 130	<0.010	ug/L	NC	40
5222153	Acenaphthylene	2017/10/26	71	30 - 130	89	30 - 130	<0.010	ug/L	NC	40
5222153	Anthracene	2017/10/26	83	30 - 130	108	30 - 130	<0.010	ug/L	NC	40
5222153	Benzo(a)anthracene	2017/10/26	90	30 - 130	114	30 - 130	<0.010	ug/L	NC	40
5222153	Benzo(a)pyrene	2017/10/26	74	30 - 130	101	30 - 130	<0.010	ug/L	NC	40
5222153	Benzo(b)fluoranthene	2017/10/26	71	30 - 130	102	30 - 130	<0.010	ug/L	NC	40
5222153	Benzo(g,h,i)perylene	2017/10/26	78	30 - 130	102	30 - 130	<0.010	ug/L	NC	40
5222153	Benzo(j)fluoranthene	2017/10/26	75	30 - 130	107	30 - 130	<0.010	ug/L	NC	40
5222153	Benzo(k)fluoranthene	2017/10/26	74	30 - 130	101	30 - 130	<0.010	ug/L	NC	40
5222153	Chrysene	2017/10/26	88	30 - 130	104	30 - 130	<0.010	ug/L	NC	40
5222153	Dibenz(a,h)anthracene	2017/10/26	73	30 - 130	82	30 - 130	<0.010	ug/L	NC	40
5222153	Fluoranthene	2017/10/26	91	30 - 130	115	30 - 130	<0.010	ug/L	NC	40
5222153	Fluorene	2017/10/26	84	30 - 130	105	30 - 130	<0.010	ug/L	NC	40
5222153	Indeno(1,2,3-cd)pyrene	2017/10/26	79	30 - 130	101	30 - 130	<0.010	ug/L	NC	40
5222153	Naphthalene	2017/10/26	74	30 - 130	92	30 - 130	<0.20	ug/L	NC	40
5222153	Perylene	2017/10/26	77	30 - 130	103	30 - 130	<0.010	ug/L	NC	40
5222153	Phenanthrene	2017/10/26	87	30 - 130	110	30 - 130	<0.010	ug/L	NC	40
5222153	Pyrene	2017/10/26	88	30 - 130	114	30 - 130	<0.010	ug/L	NC	40
5222289	Total Aluminum (Al)	2017/10/20	NC	80 - 120	100	80 - 120	<5.0	ug/L	0.26	20

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222289	Total Antimony (Sb)	2017/10/20	105	80 - 120	102	80 - 120	<1.0	ug/L		
5222289	Total Arsenic (As)	2017/10/20	97	80 - 120	96	80 - 120	<1.0	ug/L		
5222289	Total Barium (Ba)	2017/10/20	97	80 - 120	99	80 - 120	<1.0	ug/L		
5222289	Total Beryllium (Be)	2017/10/20	100	80 - 120	99	80 - 120	<1.0	ug/L		
5222289	Total Bismuth (Bi)	2017/10/20	103	80 - 120	105	80 - 120	<2.0	ug/L		
5222289	Total Boron (B)	2017/10/20	99	80 - 120	99	80 - 120	<50	ug/L		
5222289	Total Cadmium (Cd)	2017/10/20	101	80 - 120	101	80 - 120	<0.010	ug/L		
5222289	Total Calcium (Ca)	2017/10/20	102	80 - 120	104	80 - 120	<100	ug/L		
5222289	Total Chromium (Cr)	2017/10/20	97	80 - 120	97	80 - 120	<1.0	ug/L		
5222289	Total Cobalt (Co)	2017/10/20	97	80 - 120	98	80 - 120	<0.40	ug/L		
5222289	Total Copper (Cu)	2017/10/20	NC	80 - 120	96	80 - 120	<2.0	ug/L		
5222289	Total Iron (Fe)	2017/10/20	NC	80 - 120	103	80 - 120	<50	ug/L	NC	20
5222289	Total Lead (Pb)	2017/10/20	100	80 - 120	100	80 - 120	<0.50	ug/L		
5222289	Total Magnesium (Mg)	2017/10/20	99	80 - 120	100	80 - 120	<100	ug/L		
5222289	Total Manganese (Mn)	2017/10/20	NC	80 - 120	99	80 - 120	<2.0	ug/L	8.5	20
5222289	Total Molybdenum (Mo)	2017/10/20	106	80 - 120	104	80 - 120	<2.0	ug/L		
5222289	Total Nickel (Ni)	2017/10/20	96	80 - 120	97	80 - 120	<2.0	ug/L		
5222289	Total Phosphorus (P)	2017/10/20	103	80 - 120	103	80 - 120	<100	ug/L		
5222289	Total Potassium (K)	2017/10/20	102	80 - 120	102	80 - 120	<100	ug/L		
5222289	Total Selenium (Se)	2017/10/20	99	80 - 120	98	80 - 120	<1.0	ug/L		
5222289	Total Silver (Ag)	2017/10/20	99	80 - 120	99	80 - 120	<0.10	ug/L		
5222289	Total Sodium (Na)	2017/10/20	NC	80 - 120	99	80 - 120	<100	ug/L		
5222289	Total Strontium (Sr)	2017/10/20	100	80 - 120	102	80 - 120	<2.0	ug/L		
5222289	Total Thallium (Tl)	2017/10/20	103	80 - 120	105	80 - 120	<0.10	ug/L		
5222289	Total Tin (Sn)	2017/10/20	105	80 - 120	104	80 - 120	<2.0	ug/L		
5222289	Total Titanium (Ti)	2017/10/20	97	80 - 120	97	80 - 120	<2.0	ug/L		
5222289	Total Uranium (U)	2017/10/20	108	80 - 120	106	80 - 120	<0.10	ug/L		
5222289	Total Vanadium (V)	2017/10/20	100	80 - 120	99	80 - 120	<2.0	ug/L		
5222289	Total Zinc (Zn)	2017/10/20	94	80 - 120	98	80 - 120	<5.0	ug/L	2.1	20
5222396	Benzene	2017/10/20	114	70 - 130	112	70 - 130	<0.0010	mg/L	NC	40
5222396	C6 - C10 (less BTEX)	2017/10/20					<0.010	mg/L	NC	40

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222396	Ethylbenzene	2017/10/20	106	70 - 130	105	70 - 130	<0.0010	mg/L	NC	40
5222396	Toluene	2017/10/20	112	70 - 130	111	70 - 130	<0.0010	mg/L	NC	40
5222396	Total Xylenes	2017/10/20	103	70 - 130	102	70 - 130	<0.0020	mg/L	NC	40
5222421	Aroclor 1016	2017/10/24					<0.050	ug/L	NC	40
5222421	Aroclor 1221	2017/10/24					<0.050	ug/L	NC	40
5222421	Aroclor 1232	2017/10/24					<0.050	ug/L	NC	40
5222421	Aroclor 1242	2017/10/24					<0.050	ug/L	NC	40
5222421	Aroclor 1248	2017/10/24					<0.050	ug/L	NC	40
5222421	Aroclor 1254	2017/10/24	78	30 - 130	89	30 - 130	<0.050	ug/L	NC	40
5222421	Aroclor 1260	2017/10/24					<0.050	ug/L	NC	40
5222664	Aroclor 1016	2017/10/24					<0.050	ug/L	NC	40
5222664	Aroclor 1221	2017/10/24					<0.050	ug/L	NC	40
5222664	Aroclor 1232	2017/10/24					<0.050	ug/L	NC	40
5222664	Aroclor 1242	2017/10/24					<0.050	ug/L	NC	40
5222664	Aroclor 1248	2017/10/24					<0.050	ug/L	NC	40
5222664	Aroclor 1254	2017/10/24	73	30 - 130	97	30 - 130	<0.050	ug/L	NC	40
5222664	Aroclor 1260	2017/10/24					<0.050	ug/L	NC	40

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

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

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

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

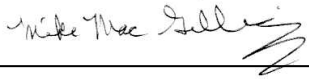
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

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


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

VALIDATION SIGNATURE PAGE

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



Mike MacGillivray, Scientific Specialist (Inorganics)



Phil Deveau, Scientific Specialist (Organics)



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.

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: n/a

Attention: Jim Slade

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

Report Date: 2017/10/30
 Report #: R4812539
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N1793

Received: 2017/10/19, 10:14

Sample Matrix: Water
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2017/10/25	N/A	SM 22 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide (1)	2	N/A	2017/10/26	N/A	SM 22 4500-CO2 D
Alkalinity (1)	4	N/A	2017/10/26	ATL SOP 00013	EPA 310.2 R1974 m
Benzo(b/j)fluoranthene Sum (water) (1)	5	N/A	2017/10/27	N/A	Auto Calc.
Chloride (1)	4	N/A	2017/10/30	ATL SOP 00014	SM 22 4500-Cl- E m
Colour (1)	4	N/A	2017/10/30	ATL SOP 00020	SM 22 2120C m
Conductance - water (1)	2	N/A	2017/10/25	ATL SOP 00004	SM 22 2510B m
Conductance - water (1)	2	N/A	2017/10/26	ATL SOP 00004	SM 22 2510B m
TEH in Water (PIRI) (1)	6	2017/10/20	2017/10/24	ATL SOP 00113	Atl. RBCA v3.1 m
Hardness (calculated as CaCO3) (1)	4	N/A	2017/10/24	ATL SOP 00048	SM 22 2340 B
Metals Water Total MS (1)	4	2017/10/20	2017/10/20	ATL SOP 00058	EPA 6020A R1 m
Metals Water Total MS (1)	1	2017/10/20	2017/10/23	ATL SOP 00058	EPA 6020A R1 m
Ion Balance (% Difference) (1)	4	N/A	2017/10/30	N/A	Auto Calc.
Anion and Cation Sum (1)	4	N/A	2017/10/27	N/A	Auto Calc.
Nitrogen Ammonia - water (1)	4	N/A	2017/10/27	ATL SOP 00015	EPA 350.1 R2 m
Nitrogen - Nitrate + Nitrite (1)	4	N/A	2017/10/30	ATL SOP 00016	USGS SOPINCF0452.2 m
Nitrogen - Nitrite (1)	4	N/A	2017/10/27	ATL SOP 00017	SM 22 4500-NO2- B m
Nitrogen - Nitrate (as N) (1)	4	N/A	2017/10/30	ATL SOP 00018	ASTM D3867-16
PAH in Water by GC/MS (SIM) (1)	5	2017/10/20	2017/10/27	ATL SOP 00103	EPA 8270D 2007 m
PCBs in water by GC/ECD (1)	5	2017/10/20	2017/10/24	ATL SOP 00107	EPA 8082A m
PCB Aroclor sum (water) (1)	5	N/A	2017/10/24	N/A	Auto Calc.
pH (1, 2)	2	N/A	2017/10/25	ATL SOP 00003	SM 22 4500-H+ B m
pH (1, 2)	2	N/A	2017/10/26	ATL SOP 00003	SM 22 4500-H+ B m
Phosphorus - ortho (1)	4	N/A	2017/10/30	ATL SOP 00021	SM 22 4500-P E m
VPH in Water (PIRI) (1)	6	N/A	2017/10/21	ATL SOP 00118	Atl. RBCA v3.1 m
Sat. pH and Langelier Index (@ 20C) (1)	2	N/A	2017/10/27	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 20C) (1)	2	N/A	2017/10/30	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	2	N/A	2017/10/27	ATL SOP 00049	Auto Calc.
Sat. pH and Langelier Index (@ 4C) (1)	2	N/A	2017/10/30	ATL SOP 00049	Auto Calc.
Reactive Silica (1)	4	N/A	2017/10/27	ATL SOP 00022	EPA 366.0 m

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: n/a

Attention: Jim Slade

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

Report Date: 2017/10/30
 Report #: R4812539
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N1793

Received: 2017/10/19, 10:14

Sample Matrix: Water
 # Samples Received: 6

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted		
Sulphate (1)	4	N/A	2017/10/27 ATL SOP 00023	ASTM D516-16 m
Total Dissolved Solids (TDS calc) (1)	4	N/A	2017/10/30 N/A	Auto Calc.
Organic carbon - Total (TOC) (1, 3)	4	N/A	2017/10/27 ATL SOP 00037	SM 22 5310C m
ModTPH (T1) Calc. for Water (1)	6	N/A	2017/10/24 N/A	Atl. RBCA v3 m
Turbidity (1)	1	N/A	2017/10/25 ATL SOP 00011	EPA 180.1 R2 m
Turbidity (1)	3	N/A	2017/10/26 ATL SOP 00011	EPA 180.1 R2 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

Your Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: n/a

Attention: Jim Slade

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

Report Date: 2017/10/30
Report #: R4812539
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N1793
Received: 2017/10/19, 10:14

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

=====
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RBCA HYDROCARBONS IN WATER (WATER)

Maxxam ID		FJD268	FJD269	FJD270	FJD271	FJD272			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	CWT-SW-2	CWT-SW-3	CWT-SW-5	CWT-SW-6	CWT-SW-7	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	5222396	N/A
Toluene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	5222396	N/A
Ethylbenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	5222396	N/A
Total Xylenes	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	5222396	N/A
C6 - C10 (less BTEX)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222396	N/A
>C10-C16 Hydrocarbons	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222133	N/A
>C16-C21 Hydrocarbons	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222133	N/A
>C21-<C32 Hydrocarbons	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5222133	N/A
Modified TPH (Tier1)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5219962	N/A
Reached Baseline at C32	mg/L	NA	NA	NA	NA	NA	N/A	5222133	N/A
Hydrocarbon Resemblance	mg/L	NA	NA	NA	NA	NA	N/A	5222133	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	93	91	95	97	92		5222133	
n-Dotriacontane - Extractable	%	82	81	84	85	82		5222133	
Isobutylbenzene - Volatile	%	77	77	77	71	78		5222396	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

RBCA HYDROCARBONS IN WATER (WATER)

Maxxam ID		FJD273			
Sampling Date		2017/10/13			
COC Number		n/a			
	UNITS	CWT-SW-8	RDL	QC Batch	MDL
Petroleum Hydrocarbons					
Benzene	mg/L	<0.0010	0.0010	5222396	N/A
Toluene	mg/L	<0.0010	0.0010	5222396	N/A
Ethylbenzene	mg/L	<0.0010	0.0010	5222396	N/A
Total Xylenes	mg/L	<0.0020	0.0020	5222396	N/A
C6 - C10 (less BTEX)	mg/L	<0.010	0.010	5222396	N/A
>C10-C16 Hydrocarbons	mg/L	<0.050	0.050	5222133	N/A
>C16-C21 Hydrocarbons	mg/L	<0.050	0.050	5222133	N/A
>C21-<C32 Hydrocarbons	mg/L	0.11	0.10	5222133	N/A
Modified TPH (Tier1)	mg/L	0.11	0.10	5219962	N/A
Reached Baseline at C32	mg/L	Yes	N/A	5222133	N/A
Hydrocarbon Resemblance	mg/L	COMMENT (1)	N/A	5222133	N/A
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	95		5222133	
n-Dotriacontane - Extractable	%	86		5222133	
Isobutylbenzene - Volatile	%	73		5222396	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range.					

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

Maxxam ID		FJD269			FJD271	FJD271			
Sampling Date		2017/10/13			2017/10/13	2017/10/13			
COC Number		n/a			n/a	n/a			
	UNITS	CWT-SW-3	RDL	QC Batch	CWT-SW-6	CWT-SW-6 Lab-Dup	RDL	QC Batch	MDL
Calculated Parameters									
Anion Sum	me/L	0.180	N/A	5227430	1.02		N/A	5227430	N/A
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5227426	31		1.0	5227426	0.20
Calculated TDS	mg/L	17	1.0	5227435	79		1.0	5227435	0.20
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5227426	<1.0		1.0	5227426	0.20
Cation Sum	me/L	0.300	N/A	5227430	1.60		N/A	5227430	N/A
Hardness (CaCO3)	mg/L	4.7	1.0	5227428	44		1.0	5227428	1.0
Ion Balance (% Difference)	%	25.0	N/A	5227429	22.1		N/A	5227429	N/A
Langelier Index (@ 20C)	N/A	NC		5227433	-1.49			5227433	
Langelier Index (@ 4C)	N/A	NC		5227434	-1.74			5227434	
Nitrate (N)	mg/L	<0.050	0.050	5227431	0.50		0.050	5227431	N/A
Saturation pH (@ 20C)	N/A	NC		5227433	8.65			5227433	
Saturation pH (@ 4C)	N/A	NC		5227434	8.90			5227434	
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	<5.0	5.0	5232354	31		5.0	5232354	N/A
Dissolved Chloride (Cl)	mg/L	6.4	1.0	5232360	5.0		1.0	5232360	N/A
Colour	TCU	190 (1)	25	5232365	37		5.0	5232365	N/A
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5232379	0.50		0.050	5232379	N/A
Nitrite (N)	mg/L	<0.010	0.010	5232383	<0.010		0.010	5232383	N/A
Nitrogen (Ammonia Nitrogen)	mg/L	<0.050	0.050	5232206	0.21		0.050	5232206	N/A
Total Organic Carbon (C)	mg/L	18 (2)	5.0	5235399	22 (2)		5.0	5235399	N/A
Orthophosphate (P)	mg/L	<0.010	0.010	5232372	<0.010		0.010	5232372	N/A
pH	pH	5.78	N/A	5229705	7.16		N/A	5232088	N/A
Reactive Silica (SiO2)	mg/L	4.2	0.50	5232364	5.6		0.50	5232364	N/A
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	5232362	11		2.0	5232362	N/A
Turbidity	NTU	0.56	0.10	5229761	92	99	0.10	5232107	0.10
Conductivity	uS/cm	29	1.0	5229706	97		1.0	5232089	N/A
Metals									
Total Aluminum (Al)	ug/L	520	5.0	5222289	3200		5.0	5222137	N/A
Total Antimony (Sb)	ug/L	<1.0	1.0	5222289	<1.0		1.0	5222137	N/A
Total Arsenic (As)	ug/L	<1.0	1.0	5222289	<1.0		1.0	5222137	N/A
Total Barium (Ba)	ug/L	6.6	1.0	5222289	46		1.0	5222137	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Elevated reporting limit due to sample matrix. (2) Reporting limit was increased due to turbidity.									

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

Maxxam ID		FJD269			FJD271	FJD271			
Sampling Date		2017/10/13			2017/10/13	2017/10/13			
COC Number		n/a			n/a	n/a			
	UNITS	CWT-SW-3	RDL	QC Batch	CWT-SW-6	CWT-SW-6 Lab-Dup	RDL	QC Batch	MDL
Total Beryllium (Be)	ug/L	<1.0	1.0	5222289	<1.0		1.0	5222137	N/A
Total Bismuth (Bi)	ug/L	<2.0	2.0	5222289	<2.0		2.0	5222137	N/A
Total Boron (B)	ug/L	<50	50	5222289	250		50	5222137	N/A
Total Cadmium (Cd)	ug/L	0.011	0.010	5222289	0.18		0.010	5222137	N/A
Total Calcium (Ca)	ug/L	790	100	5222289	15000		100	5222137	N/A
Total Chromium (Cr)	ug/L	<1.0	1.0	5222289	4.7		1.0	5222137	N/A
Total Cobalt (Co)	ug/L	<0.40	0.40	5222289	0.92		0.40	5222137	N/A
Total Copper (Cu)	ug/L	<2.0	2.0	5222289	8.2		2.0	5222137	N/A
Total Iron (Fe)	ug/L	800	50	5222289	13000		50	5222137	N/A
Total Lead (Pb)	ug/L	<0.50	0.50	5222289	3.0		0.50	5222137	N/A
Total Magnesium (Mg)	ug/L	670	100	5222289	1400		100	5222137	N/A
Total Manganese (Mn)	ug/L	17	2.0	5222289	120		2.0	5222137	N/A
Total Molybdenum (Mo)	ug/L	<2.0	2.0	5222289	<2.0		2.0	5222137	N/A
Total Nickel (Ni)	ug/L	<2.0	2.0	5222289	<2.0		2.0	5222137	N/A
Total Phosphorus (P)	ug/L	<100	100	5222289	260		100	5222137	N/A
Total Potassium (K)	ug/L	180	100	5222289	1900		100	5222137	N/A
Total Selenium (Se)	ug/L	<1.0	1.0	5222289	<1.0		1.0	5222137	N/A
Total Silver (Ag)	ug/L	<0.10	0.10	5222289	<0.10		0.10	5222137	N/A
Total Sodium (Na)	ug/L	3900	100	5222289	4100		100	5222137	N/A
Total Strontium (Sr)	ug/L	8.9	2.0	5222289	78		2.0	5222137	N/A
Total Thallium (Tl)	ug/L	<0.10	0.10	5222289	<0.10		0.10	5222137	N/A
Total Tin (Sn)	ug/L	<2.0	2.0	5222289	<2.0		2.0	5222137	N/A
Total Titanium (Ti)	ug/L	10	2.0	5222289	160		2.0	5222137	N/A
Total Uranium (U)	ug/L	<0.10	0.10	5222289	0.17		0.10	5222137	N/A
Total Vanadium (V)	ug/L	<2.0	2.0	5222289	11		2.0	5222137	N/A
Total Zinc (Zn)	ug/L	<5.0	5.0	5222289	20		5.0	5222137	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

Maxxam ID		FJD272			FJD273	FJD273			
Sampling Date		2017/10/13			2017/10/13	2017/10/13			
COC Number		n/a			n/a	n/a			
	UNITS	CWT-SW-7	RDL	QC Batch	CWT-SW-8	CWT-SW-8 Lab-Dup	RDL	QC Batch	MDL
Calculated Parameters									
Anion Sum	me/L	0.300	N/A	5227430	0.330		N/A	5227430	N/A
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	5.9	1.0	5227426	<1.0		1.0	5227426	0.20
Calculated TDS	mg/L	24	1.0	5227435	21		1.0	5227435	0.20
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1.0	1.0	5227426	<1.0		1.0	5227426	0.20
Cation Sum	me/L	0.310	N/A	5227430	0.360		N/A	5227430	N/A
Hardness (CaCO3)	mg/L	5.4	1.0	5227428	9.0		1.0	5227428	1.0
Ion Balance (% Difference)	%	1.64	N/A	5227429	4.35		N/A	5227429	N/A
Langelier Index (@ 20C)	N/A	-4.63		5227433	NC			5227433	
Langelier Index (@ 4C)	N/A	-4.88		5227434	NC			5227434	
Nitrate (N)	mg/L	<0.050	0.050	5227431	1.3		0.050	5227431	N/A
Saturation pH (@ 20C)	N/A	10.5		5227433	NC			5227433	
Saturation pH (@ 4C)	N/A	10.7		5227434	NC			5227434	
Inorganics									
Total Alkalinity (Total as CaCO3)	mg/L	5.9	5.0	5232354	<5.0	<5.0	5.0	5232354	N/A
Dissolved Chloride (Cl)	mg/L	6.6	1.0	5232360	8.4	8.1	1.0	5232360	N/A
Colour	TCU	63 (1)	25	5232365	330 (1)	340 (1)	50	5232365	N/A
Nitrate + Nitrite (N)	mg/L	<0.050	0.050	5232379	1.3	1.3	0.050	5232379	N/A
Nitrite (N)	mg/L	<0.010	0.010	5232383	<0.010	<0.010	0.010	5232383	N/A
Nitrogen (Ammonia Nitrogen)	mg/L	0.058	0.050	5232206	0.087		0.050	5232206	N/A
Total Organic Carbon (C)	mg/L	18 (2)	5.0	5235399	38 (2)		5.0	5235399	N/A
Orthophosphate (P)	mg/L	<0.010	0.010	5232372	<0.010	<0.010	0.010	5232372	N/A
pH	pH	5.83	N/A	5229705	4.35		N/A	5232092	N/A
Reactive Silica (SiO2)	mg/L	6.9	0.50	5232364	0.78	0.78	0.50	5232364	N/A
Dissolved Sulphate (SO4)	mg/L	<2.0	2.0	5232362	<2.0	<2.0	2.0	5232362	N/A
Turbidity	NTU	160	1.0	5232101	1.3		0.10	5232107	0.10
Conductivity	uS/cm	35	1.0	5229706	79		1.0	5232093	N/A
Metals									
Total Aluminum (Al)	ug/L	410	5.0	5222137	290		5.0	5222289	N/A
Total Antimony (Sb)	ug/L	<1.0	1.0	5222137	<1.0		1.0	5222289	N/A
Total Arsenic (As)	ug/L	<1.0	1.0	5222137	<1.0		1.0	5222289	N/A
Total Barium (Ba)	ug/L	25	1.0	5222137	7.2		1.0	5222289	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Elevated reporting limit due to sample matrix. (2) Reporting limit was increased due to turbidity.									

ATLANTIC RCAP-MS TOTAL METALS IN WATER (WATER)

Maxxam ID		FJD272			FJD273	FJD273			
Sampling Date		2017/10/13			2017/10/13	2017/10/13			
COC Number		n/a			n/a	n/a			
	UNITS	CWT-SW-7	RDL	QC Batch	CWT-SW-8	CWT-SW-8 Lab-Dup	RDL	QC Batch	MDL
Total Beryllium (Be)	ug/L	<1.0	1.0	5222137	<1.0		1.0	5222289	N/A
Total Bismuth (Bi)	ug/L	<2.0	2.0	5222137	<2.0		2.0	5222289	N/A
Total Boron (B)	ug/L	<50	50	5222137	<50		50	5222289	N/A
Total Cadmium (Cd)	ug/L	0.018	0.010	5222137	0.030		0.010	5222289	N/A
Total Calcium (Ca)	ug/L	1100	100	5222137	1600		100	5222289	N/A
Total Chromium (Cr)	ug/L	1.4	1.0	5222137	<1.0		1.0	5222289	N/A
Total Cobalt (Co)	ug/L	<0.40	0.40	5222137	<0.40		0.40	5222289	N/A
Total Copper (Cu)	ug/L	<2.0	2.0	5222137	<2.0		2.0	5222289	N/A
Total Iron (Fe)	ug/L	1000	50	5222137	640		50	5222289	N/A
Total Lead (Pb)	ug/L	<0.50	0.50	5222137	2.9		0.50	5222289	N/A
Total Magnesium (Mg)	ug/L	630	100	5222137	1200		100	5222289	N/A
Total Manganese (Mn)	ug/L	12	2.0	5222137	44		2.0	5222289	N/A
Total Molybdenum (Mo)	ug/L	<2.0	2.0	5222137	<2.0		2.0	5222289	N/A
Total Nickel (Ni)	ug/L	<2.0	2.0	5222137	<2.0		2.0	5222289	N/A
Total Phosphorus (P)	ug/L	130	100	5222137	<100		100	5222289	N/A
Total Potassium (K)	ug/L	380	100	5222137	110		100	5222289	N/A
Total Selenium (Se)	ug/L	<1.0	1.0	5222137	<1.0		1.0	5222289	N/A
Total Silver (Ag)	ug/L	<0.10	0.10	5222137	<0.10		0.10	5222289	N/A
Total Sodium (Na)	ug/L	3300	100	5222137	2500		100	5222289	N/A
Total Strontium (Sr)	ug/L	11	2.0	5222137	11		2.0	5222289	N/A
Total Thallium (Tl)	ug/L	<0.10	0.10	5222137	<0.10		0.10	5222289	N/A
Total Tin (Sn)	ug/L	<2.0	2.0	5222137	<2.0		2.0	5222289	N/A
Total Titanium (Ti)	ug/L	4.0	2.0	5222137	10		2.0	5222289	N/A
Total Uranium (U)	ug/L	<0.10	0.10	5222137	<0.10		0.10	5222289	N/A
Total Vanadium (V)	ug/L	<2.0	2.0	5222137	<2.0		2.0	5222289	N/A
Total Zinc (Zn)	ug/L	12	5.0	5222137	18		5.0	5222289	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FJD270			
Sampling Date		2017/10/13			
COC Number		n/a			
	UNITS	CWT-SW-5	RDL	QC Batch	MDL
Metals					
Total Aluminum (Al)	ug/L	750	5.0	5222137	N/A
Total Antimony (Sb)	ug/L	<1.0	1.0	5222137	N/A
Total Arsenic (As)	ug/L	<1.0	1.0	5222137	N/A
Total Barium (Ba)	ug/L	4.7	1.0	5222137	N/A
Total Beryllium (Be)	ug/L	<1.0	1.0	5222137	N/A
Total Bismuth (Bi)	ug/L	<2.0	2.0	5222137	N/A
Total Boron (B)	ug/L	<50	50	5222137	N/A
Total Cadmium (Cd)	ug/L	<0.010	0.010	5222137	N/A
Total Calcium (Ca)	ug/L	1100	100	5222137	N/A
Total Chromium (Cr)	ug/L	<1.0	1.0	5222137	N/A
Total Cobalt (Co)	ug/L	<0.40	0.40	5222137	N/A
Total Copper (Cu)	ug/L	2.7	2.0	5222137	N/A
Total Iron (Fe)	ug/L	920	50	5222137	N/A
Total Lead (Pb)	ug/L	2.0	0.50	5222137	N/A
Total Magnesium (Mg)	ug/L	910	100	5222137	N/A
Total Manganese (Mn)	ug/L	8.2	2.0	5222137	N/A
Total Molybdenum (Mo)	ug/L	<2.0	2.0	5222137	N/A
Total Nickel (Ni)	ug/L	<2.0	2.0	5222137	N/A
Total Phosphorus (P)	ug/L	<100	100	5222137	N/A
Total Potassium (K)	ug/L	290	100	5222137	N/A
Total Selenium (Se)	ug/L	<1.0	1.0	5222137	N/A
Total Silver (Ag)	ug/L	<0.10	0.10	5222137	N/A
Total Sodium (Na)	ug/L	5700	100	5222137	N/A
Total Strontium (Sr)	ug/L	16	2.0	5222137	N/A
Total Thallium (Tl)	ug/L	<0.10	0.10	5222137	N/A
Total Tin (Sn)	ug/L	<2.0	2.0	5222137	N/A
Total Titanium (Ti)	ug/L	16	2.0	5222137	N/A
Total Uranium (U)	ug/L	<0.10	0.10	5222137	N/A
Total Vanadium (V)	ug/L	<2.0	2.0	5222137	N/A
Total Zinc (Zn)	ug/L	<5.0	5.0	5222137	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FJD269	FJD270	FJD271	FJD272	FJD273			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		n/a	n/a	n/a	n/a	n/a			
	UNITS	CWT-SW-3	CWT-SW-5	CWT-SW-6	CWT-SW-7	CWT-SW-8	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222153	N/A
2-Methylnaphthalene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222153	N/A
Acenaphthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Acenaphthylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Benzo(a)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Benzo(a)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Benzo(b)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Benzo(b/j)fluoranthene	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5220514	N/A
Benzo(g,h,i)perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Benzo(j)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Benzo(k)fluoranthene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Chrysene	ug/L	<0.010	<0.010	0.011	<0.010	<0.010	0.010	5222153	N/A
Dibenz(a,h)anthracene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Fluoranthene	ug/L	<0.010	<0.010	0.022	0.010	0.011	0.010	5222153	N/A
Fluorene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Naphthalene	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	5222153	N/A
Perylene	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5222153	N/A
Phenanthrene	ug/L	0.019	0.021	0.030	0.016	0.021	0.010	5222153	N/A
Pyrene	ug/L	<0.010	<0.010	0.014	<0.010	<0.010	0.010	5222153	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	64	58	50	58	64		5222153	
D14-Terphenyl	%	72	69	53	66	75		5222153	
D8-Acenaphthylene	%	71	58	50	66	58		5222153	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		FJD269	FJD269	FJD270		FJD271	FJD271	FJD272			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		n/a	n/a	n/a		n/a	n/a	n/a			
	UNITS	CWT-SW-3	CWT-SW-3 Lab-Dup	CWT-SW-5	QC Batch	CWT-SW-6	CWT-SW-6 Lab-Dup	CWT-SW-7	RDL	QC Batch	MDL

PCBs											
Aroclor 1016	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Aroclor 1221	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Aroclor 1232	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Aroclor 1248	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Aroclor 1242	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Aroclor 1254	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Aroclor 1260	ug/L	<0.050	<0.050	<0.050	5222421	<0.050	<0.050	<0.050	0.050	5222664	N/A
Calculated Total PCB	ug/L	<0.050		<0.050	5220380	<0.050		<0.050	0.050	5220380	N/A

Surrogate Recovery (%)											
Decachlorobiphenyl	%	52	69	61	5222421	62	63	60 (1)		5222664	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) PCB: Unidentified (possibly halogenated) compounds detected.

Maxxam ID		FJD273			
Sampling Date		2017/10/13			
COC Number		n/a			
	UNITS	CWT-SW-8	RDL	QC Batch	MDL
PCBs					
Aroclor 1016	ug/L	<0.050	0.050	5222664	N/A
Aroclor 1221	ug/L	<0.050	0.050	5222664	N/A
Aroclor 1232	ug/L	<0.050	0.050	5222664	N/A
Aroclor 1248	ug/L	<0.050	0.050	5222664	N/A
Aroclor 1242	ug/L	<0.050	0.050	5222664	N/A
Aroclor 1254	ug/L	<0.050	0.050	5222664	N/A
Aroclor 1260	ug/L	<0.050	0.050	5222664	N/A
Calculated Total PCB	ug/L	<0.050	0.050	5220380	N/A
Surrogate Recovery (%)					
Decachlorobiphenyl	%	40		5222664	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

TEST SUMMARY

Maxxam ID: FJD268
Sample ID: CWT-SW-2
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Water (PIRI)	GC/FID	5222133	2017/10/20	2017/10/24	Brittany Matthews
VPH in Water (PIRI)	PTGC/MS	5222396	N/A	2017/10/21	Michelle Shearer
ModTPH (T1) Calc. for Water	CALC	5219962	N/A	2017/10/24	Automated Statchk

Maxxam ID: FJD269
Sample ID: CWT-SW-3
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5227426	N/A	2017/10/25	Automated Statchk
Alkalinity	KONE	5232354	N/A	2017/10/26	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5220514	N/A	2017/10/27	Automated Statchk
Chloride	KONE	5232360	N/A	2017/10/30	Nancy Rogers
Colour	KONE	5232365	N/A	2017/10/30	Nancy Rogers
Conductance - water	AT	5229706	N/A	2017/10/25	Julia McGovern
TEH in Water (PIRI)	GC/FID	5222133	2017/10/20	2017/10/24	Brittany Matthews
Hardness (calculated as CaCO3)		5227428	N/A	2017/10/24	Automated Statchk
Metals Water Total MS	CICP/MS	5222289	2017/10/20	2017/10/20	Bryon Angevine
Ion Balance (% Difference)	CALC	5227429	N/A	2017/10/30	Automated Statchk
Anion and Cation Sum	CALC	5227430	N/A	2017/10/27	Automated Statchk
Nitrogen Ammonia - water	KONE	5232206	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate + Nitrite	KONE	5232379	N/A	2017/10/30	Nancy Rogers
Nitrogen - Nitrite	KONE	5232383	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate (as N)	CALC	5227431	N/A	2017/10/30	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5222153	2017/10/20	2017/10/27	Gina Thompson
PCBs in water by GC/ECD	GC/ECD	5222421	2017/10/20	2017/10/24	Lisa Gates
PCB Aroclor sum (water)	CALC	5220380	N/A	2017/10/24	Automated Statchk
pH	AT	5229705	N/A	2017/10/25	Julia McGovern
Phosphorus - ortho	KONE	5232372	N/A	2017/10/30	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5222396	N/A	2017/10/21	Michelle Shearer
Sat. pH and Langelier Index (@ 20C)	CALC	5227433	N/A	2017/10/27	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5227434	N/A	2017/10/27	Automated Statchk
Reactive Silica	KONE	5232364	N/A	2017/10/27	Nancy Rogers
Sulphate	KONE	5232362	N/A	2017/10/27	Nancy Rogers
Total Dissolved Solids (TDS calc)	CALC	5227435	N/A	2017/10/30	Automated Statchk
Organic carbon - Total (TOC)	TECH	5235399	N/A	2017/10/27	Steven Smith
ModTPH (T1) Calc. for Water	CALC	5219962	N/A	2017/10/24	Automated Statchk
Turbidity	TURB	5229761	N/A	2017/10/25	Julia McGovern

TEST SUMMARY

Maxxam ID: FJD269 Dup
Sample ID: CWT-SW-3
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in water by GC/ECD	GC/ECD	5222421	2017/10/20	2017/10/24	Lisa Gates

Maxxam ID: FJD270
Sample ID: CWT-SW-5
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (water)	CALC	5220514	N/A	2017/10/27	Automated Statchk
TEH in Water (PIRI)	GC/FID	5222133	2017/10/20	2017/10/24	Brittany Matthews
Metals Water Total MS	CICP/MS	5222137	2017/10/20	2017/10/20	Bryon Angevine
PAH in Water by GC/MS (SIM)	GC/MS	5222153	2017/10/20	2017/10/27	Gina Thompson
PCBs in water by GC/ECD	GC/ECD	5222421	2017/10/20	2017/10/24	Lisa Gates
PCB Aroclor sum (water)	CALC	5220380	N/A	2017/10/24	Automated Statchk
VPH in Water (PIRI)	PTGC/MS	5222396	N/A	2017/10/21	Michelle Shearer
ModTPH (T1) Calc. for Water	CALC	5219962	N/A	2017/10/24	Automated Statchk

Maxxam ID: FJD271
Sample ID: CWT-SW-6
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5227426	N/A	2017/10/26	Automated Statchk
Alkalinity	KONE	5232354	N/A	2017/10/26	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5220514	N/A	2017/10/27	Automated Statchk
Chloride	KONE	5232360	N/A	2017/10/30	Nancy Rogers
Colour	KONE	5232365	N/A	2017/10/30	Nancy Rogers
Conductance - water	AT	5232089	N/A	2017/10/26	Julia McGovern
TEH in Water (PIRI)	GC/FID	5222133	2017/10/20	2017/10/24	Brittany Matthews
Hardness (calculated as CaCO3)		5227428	N/A	2017/10/24	Automated Statchk
Metals Water Total MS	CICP/MS	5222137	2017/10/20	2017/10/20	Bryon Angevine
Ion Balance (% Difference)	CALC	5227429	N/A	2017/10/30	Automated Statchk
Anion and Cation Sum	CALC	5227430	N/A	2017/10/27	Automated Statchk
Nitrogen Ammonia - water	KONE	5232206	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate + Nitrite	KONE	5232379	N/A	2017/10/30	Nancy Rogers
Nitrogen - Nitrite	KONE	5232383	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate (as N)	CALC	5227431	N/A	2017/10/30	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5222153	2017/10/20	2017/10/27	Gina Thompson
PCBs in water by GC/ECD	GC/ECD	5222664	2017/10/20	2017/10/24	Lisa Gates
PCB Aroclor sum (water)	CALC	5220380	N/A	2017/10/24	Automated Statchk
pH	AT	5232088	N/A	2017/10/26	Julia McGovern
Phosphorus - ortho	KONE	5232372	N/A	2017/10/30	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5222396	N/A	2017/10/21	Michelle Shearer
Sat. pH and Langelier Index (@ 20C)	CALC	5227433	N/A	2017/10/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5227434	N/A	2017/10/30	Automated Statchk

TEST SUMMARY

Maxxam ID: FJD271
Sample ID: CWT-SW-6
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Reactive Silica	KONE	5232364	N/A	2017/10/27	Nancy Rogers
Sulphate	KONE	5232362	N/A	2017/10/27	Nancy Rogers
Total Dissolved Solids (TDS calc)	CALC	5227435	N/A	2017/10/30	Automated Statchk
Organic carbon - Total (TOC)	TECH	5235399	N/A	2017/10/27	Steven Smith
ModTPH (T1) Calc. for Water	CALC	5219962	N/A	2017/10/24	Automated Statchk
Turbidity	TURB	5232107	N/A	2017/10/26	Julia McGovern

Maxxam ID: FJD271 Dup
Sample ID: CWT-SW-6
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in water by GC/ECD	GC/ECD	5222664	2017/10/20	2017/10/24	Lisa Gates
Turbidity	TURB	5232107	N/A	2017/10/26	Julia McGovern

Maxxam ID: FJD272
Sample ID: CWT-SW-7
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5227426	N/A	2017/10/25	Automated Statchk
Alkalinity	KONE	5232354	N/A	2017/10/26	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5220514	N/A	2017/10/27	Automated Statchk
Chloride	KONE	5232360	N/A	2017/10/30	Nancy Rogers
Colour	KONE	5232365	N/A	2017/10/30	Nancy Rogers
Conductance - water	AT	5229706	N/A	2017/10/25	Julia McGovern
TEH in Water (PIRI)	GC/FID	5222133	2017/10/20	2017/10/24	Brittany Matthews
Hardness (calculated as CaCO3)		5227428	N/A	2017/10/24	Automated Statchk
Metals Water Total MS	CICP/MS	5222137	2017/10/20	2017/10/20	Bryon Angevine
Ion Balance (% Difference)	CALC	5227429	N/A	2017/10/30	Automated Statchk
Anion and Cation Sum	CALC	5227430	N/A	2017/10/27	Automated Statchk
Nitrogen Ammonia - water	KONE	5232206	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate + Nitrite	KONE	5232379	N/A	2017/10/30	Nancy Rogers
Nitrogen - Nitrite	KONE	5232383	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate (as N)	CALC	5227431	N/A	2017/10/30	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5222153	2017/10/20	2017/10/27	Gina Thompson
PCBs in water by GC/ECD	GC/ECD	5222664	2017/10/20	2017/10/24	Lisa Gates
PCB Aroclor sum (water)	CALC	5220380	N/A	2017/10/24	Automated Statchk
pH	AT	5229705	N/A	2017/10/25	Julia McGovern
Phosphorus - ortho	KONE	5232372	N/A	2017/10/30	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5222396	N/A	2017/10/21	Michelle Shearer
Sat. pH and Langelier Index (@ 20C)	CALC	5227433	N/A	2017/10/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5227434	N/A	2017/10/30	Automated Statchk
Reactive Silica	KONE	5232364	N/A	2017/10/27	Nancy Rogers

TEST SUMMARY

Maxxam ID: FJD272
Sample ID: CWT-SW-7
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sulphate	KONE	5232362	N/A	2017/10/27	Nancy Rogers
Total Dissolved Solids (TDS calc)	CALC	5227435	N/A	2017/10/30	Automated Statchk
Organic carbon - Total (TOC)	TECH	5235399	N/A	2017/10/27	Steven Smith
ModTPH (T1) Calc. for Water	CALC	5219962	N/A	2017/10/24	Automated Statchk
Turbidity	TURB	5232101	N/A	2017/10/26	Julia McGovern

Maxxam ID: FJD273
Sample ID: CWT-SW-8
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	5227426	N/A	2017/10/26	Automated Statchk
Alkalinity	KONE	5232354	N/A	2017/10/26	Nancy Rogers
Benzo(b/j)fluoranthene Sum (water)	CALC	5220514	N/A	2017/10/27	Automated Statchk
Chloride	KONE	5232360	N/A	2017/10/30	Nancy Rogers
Colour	KONE	5232365	N/A	2017/10/30	Nancy Rogers
Conductance - water	AT	5232093	N/A	2017/10/26	Julia McGovern
TEH in Water (PIRI)	GC/FID	5222133	2017/10/20	2017/10/24	Brittany Matthews
Hardness (calculated as CaCO3)		5227428	N/A	2017/10/24	Automated Statchk
Metals Water Total MS	CICP/MS	5222289	2017/10/20	2017/10/23	Bryon Angevine
Ion Balance (% Difference)	CALC	5227429	N/A	2017/10/30	Automated Statchk
Anion and Cation Sum	CALC	5227430	N/A	2017/10/27	Automated Statchk
Nitrogen Ammonia - water	KONE	5232206	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate + Nitrite	KONE	5232379	N/A	2017/10/30	Nancy Rogers
Nitrogen - Nitrite	KONE	5232383	N/A	2017/10/27	Nancy Rogers
Nitrogen - Nitrate (as N)	CALC	5227431	N/A	2017/10/30	Automated Statchk
PAH in Water by GC/MS (SIM)	GC/MS	5222153	2017/10/20	2017/10/27	Gina Thompson
PCBs in water by GC/ECD	GC/ECD	5222664	2017/10/20	2017/10/24	Lisa Gates
PCB Aroclor sum (water)	CALC	5220380	N/A	2017/10/24	Automated Statchk
pH	AT	5232092	N/A	2017/10/26	Julia McGovern
Phosphorus - ortho	KONE	5232372	N/A	2017/10/30	Mary Clancey
VPH in Water (PIRI)	PTGC/MS	5222396	N/A	2017/10/21	Michelle Shearer
Sat. pH and Langelier Index (@ 20C)	CALC	5227433	N/A	2017/10/27	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5227434	N/A	2017/10/27	Automated Statchk
Reactive Silica	KONE	5232364	N/A	2017/10/27	Nancy Rogers
Sulphate	KONE	5232362	N/A	2017/10/27	Nancy Rogers
Total Dissolved Solids (TDS calc)	CALC	5227435	N/A	2017/10/30	Automated Statchk
Organic carbon - Total (TOC)	TECH	5235399	N/A	2017/10/27	Steven Smith
ModTPH (T1) Calc. for Water	CALC	5219962	N/A	2017/10/24	Automated Statchk
Turbidity	TURB	5232107	N/A	2017/10/26	Julia McGovern

Maxxam Job #: B7N1793
Report Date: 2017/10/30

Stantec Consulting Ltd
Client Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Sampler Initials: RP

TEST SUMMARY

Maxxam ID: FJD273 Dup
Sample ID: CWT-SW-8
Matrix: Water

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	KONE	5232354	N/A	2017/10/26	Nancy Rogers
Chloride	KONE	5232360	N/A	2017/10/30	Nancy Rogers
Colour	KONE	5232365	N/A	2017/10/30	Nancy Rogers
Nitrogen - Nitrate + Nitrite	KONE	5232379	N/A	2017/10/30	Nancy Rogers
Nitrogen - Nitrite	KONE	5232383	N/A	2017/10/27	Nancy Rogers
Phosphorus - ortho	KONE	5232372	N/A	2017/10/30	Mary Clancey
Reactive Silica	KONE	5232364	N/A	2017/10/26	Nancy Rogers
Sulphate	KONE	5232362	N/A	2017/10/27	Nancy Rogers

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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Sample FJD269 [CWT-SW-3] : RCap Ion Balance acceptable. Anion/cation agreement within 0.2 meq/L.

Sample FJD271 [CWT-SW-6] : Poor RCap Ion Balance due to sample matrix. Excess cations due to presence of turbidity.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5222133	Isobutylbenzene - Extractable	2017/10/23	91	30 - 130	90	30 - 130	88	%				
5222133	n-Dotriacontane - Extractable	2017/10/23	92	30 - 130	96	30 - 130	78	%				
5222153	D10-Anthracene	2017/10/26	76	50 - 130	97	50 - 130	99	%				
5222153	D14-Terphenyl	2017/10/26	83	50 - 130	86	50 - 130	95	%				
5222153	D8-Acenaphthylene	2017/10/26	73	50 - 130	100	50 - 130	112	%				
5222396	Isobutylbenzene - Volatile	2017/10/20	79	70 - 130	79	70 - 130	80	%				
5222421	Decachlorobiphenyl	2017/10/24	57	30 - 130	77	30 - 130	73	%				
5222664	Decachlorobiphenyl	2017/10/24	57	30 - 130	38	30 - 130	33	%				
5222133	>C10-C16 Hydrocarbons	2017/10/23	86	70 - 130	87	70 - 130	<0.050	mg/L	NC	40		
5222133	>C16-C21 Hydrocarbons	2017/10/23	83	70 - 130	82	70 - 130	<0.050	mg/L	NC	40		
5222133	>C21-<C32 Hydrocarbons	2017/10/23	93	70 - 130	94	70 - 130	<0.10	mg/L	NC	40		
5222137	Total Aluminum (Al)	2017/10/20	99	80 - 120	101	80 - 120	<5.0	ug/L				
5222137	Total Antimony (Sb)	2017/10/20	101	80 - 120	103	80 - 120	<1.0	ug/L				
5222137	Total Arsenic (As)	2017/10/20	95	80 - 120	96	80 - 120	<1.0	ug/L				
5222137	Total Barium (Ba)	2017/10/20	103	80 - 120	103	80 - 120	<1.0	ug/L				
5222137	Total Beryllium (Be)	2017/10/20	96	80 - 120	97	80 - 120	<1.0	ug/L				
5222137	Total Bismuth (Bi)	2017/10/20	100	80 - 120	103	80 - 120	<2.0	ug/L				
5222137	Total Boron (B)	2017/10/20	96	80 - 120	97	80 - 120	<50	ug/L				
5222137	Total Cadmium (Cd)	2017/10/20	97	80 - 120	99	80 - 120	<0.010	ug/L				
5222137	Total Calcium (Ca)	2017/10/20	101	80 - 120	104	80 - 120	<100	ug/L				
5222137	Total Chromium (Cr)	2017/10/20	92	80 - 120	95	80 - 120	<1.0	ug/L				
5222137	Total Cobalt (Co)	2017/10/20	94	80 - 120	97	80 - 120	<0.40	ug/L				
5222137	Total Copper (Cu)	2017/10/20	90	80 - 120	95	80 - 120	<2.0	ug/L				
5222137	Total Iron (Fe)	2017/10/20	98	80 - 120	102	80 - 120	<50	ug/L				
5222137	Total Lead (Pb)	2017/10/20	96	80 - 120	99	80 - 120	<0.50	ug/L				
5222137	Total Magnesium (Mg)	2017/10/20	96	80 - 120	101	80 - 120	<100	ug/L				
5222137	Total Manganese (Mn)	2017/10/20	96	80 - 120	99	80 - 120	<2.0	ug/L				
5222137	Total Molybdenum (Mo)	2017/10/20	102	80 - 120	101	80 - 120	<2.0	ug/L				
5222137	Total Nickel (Ni)	2017/10/20	92	80 - 120	97	80 - 120	<2.0	ug/L				
5222137	Total Phosphorus (P)	2017/10/20	101	80 - 120	102	80 - 120	<100	ug/L				
5222137	Total Potassium (K)	2017/10/20	97	80 - 120	100	80 - 120	<100	ug/L				

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5222137	Total Selenium (Se)	2017/10/20	95	80 - 120	98	80 - 120	<1.0	ug/L				
5222137	Total Silver (Ag)	2017/10/20	97	80 - 120	99	80 - 120	<0.10	ug/L				
5222137	Total Sodium (Na)	2017/10/20	NC	80 - 120	96	80 - 120	<100	ug/L				
5222137	Total Strontium (Sr)	2017/10/20	101	80 - 120	104	80 - 120	<2.0	ug/L				
5222137	Total Thallium (Tl)	2017/10/20	100	80 - 120	103	80 - 120	<0.10	ug/L				
5222137	Total Tin (Sn)	2017/10/20	107	80 - 120	106	80 - 120	<2.0	ug/L				
5222137	Total Titanium (Ti)	2017/10/20	98	80 - 120	102	80 - 120	<2.0	ug/L				
5222137	Total Uranium (U)	2017/10/20	104	80 - 120	106	80 - 120	<0.10	ug/L	0.080	20		
5222137	Total Vanadium (V)	2017/10/20	95	80 - 120	98	80 - 120	<2.0	ug/L				
5222137	Total Zinc (Zn)	2017/10/20	94	80 - 120	96	80 - 120	<5.0	ug/L				
5222153	1-Methylnaphthalene	2017/10/26	71	30 - 130	89	30 - 130	<0.050	ug/L	NC	40		
5222153	2-Methylnaphthalene	2017/10/26	75	30 - 130	95	30 - 130	<0.050	ug/L	NC	40		
5222153	Acenaphthene	2017/10/26	81	30 - 130	103	30 - 130	<0.010	ug/L	NC	40		
5222153	Acenaphthylene	2017/10/26	71	30 - 130	89	30 - 130	<0.010	ug/L	NC	40		
5222153	Anthracene	2017/10/26	83	30 - 130	108	30 - 130	<0.010	ug/L	NC	40		
5222153	Benzo(a)anthracene	2017/10/26	90	30 - 130	114	30 - 130	<0.010	ug/L	NC	40		
5222153	Benzo(a)pyrene	2017/10/26	74	30 - 130	101	30 - 130	<0.010	ug/L	NC	40		
5222153	Benzo(b)fluoranthene	2017/10/26	71	30 - 130	102	30 - 130	<0.010	ug/L	NC	40		
5222153	Benzo(g,h,i)perylene	2017/10/26	78	30 - 130	102	30 - 130	<0.010	ug/L	NC	40		
5222153	Benzo(j)fluoranthene	2017/10/26	75	30 - 130	107	30 - 130	<0.010	ug/L	NC	40		
5222153	Benzo(k)fluoranthene	2017/10/26	74	30 - 130	101	30 - 130	<0.010	ug/L	NC	40		
5222153	Chrysene	2017/10/26	88	30 - 130	104	30 - 130	<0.010	ug/L	NC	40		
5222153	Dibenz(a,h)anthracene	2017/10/26	73	30 - 130	82	30 - 130	<0.010	ug/L	NC	40		
5222153	Fluoranthene	2017/10/26	91	30 - 130	115	30 - 130	<0.010	ug/L	NC	40		
5222153	Fluorene	2017/10/26	84	30 - 130	105	30 - 130	<0.010	ug/L	NC	40		
5222153	Indeno(1,2,3-cd)pyrene	2017/10/26	79	30 - 130	101	30 - 130	<0.010	ug/L	NC	40		
5222153	Naphthalene	2017/10/26	74	30 - 130	92	30 - 130	<0.20	ug/L	NC	40		
5222153	Perylene	2017/10/26	77	30 - 130	103	30 - 130	<0.010	ug/L	NC	40		
5222153	Phenanthrene	2017/10/26	87	30 - 130	110	30 - 130	<0.010	ug/L	NC	40		
5222153	Pyrene	2017/10/26	88	30 - 130	114	30 - 130	<0.010	ug/L	NC	40		
5222289	Total Aluminum (Al)	2017/10/20	NC	80 - 120	100	80 - 120	<5.0	ug/L	0.26	20		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5222289	Total Antimony (Sb)	2017/10/20	105	80 - 120	102	80 - 120	<1.0	ug/L				
5222289	Total Arsenic (As)	2017/10/20	97	80 - 120	96	80 - 120	<1.0	ug/L				
5222289	Total Barium (Ba)	2017/10/20	97	80 - 120	99	80 - 120	<1.0	ug/L				
5222289	Total Beryllium (Be)	2017/10/20	100	80 - 120	99	80 - 120	<1.0	ug/L				
5222289	Total Bismuth (Bi)	2017/10/20	103	80 - 120	105	80 - 120	<2.0	ug/L				
5222289	Total Boron (B)	2017/10/20	99	80 - 120	99	80 - 120	<50	ug/L				
5222289	Total Cadmium (Cd)	2017/10/20	101	80 - 120	101	80 - 120	<0.010	ug/L				
5222289	Total Calcium (Ca)	2017/10/20	102	80 - 120	104	80 - 120	<100	ug/L				
5222289	Total Chromium (Cr)	2017/10/20	97	80 - 120	97	80 - 120	<1.0	ug/L				
5222289	Total Cobalt (Co)	2017/10/20	97	80 - 120	98	80 - 120	<0.40	ug/L				
5222289	Total Copper (Cu)	2017/10/20	NC	80 - 120	96	80 - 120	<2.0	ug/L				
5222289	Total Iron (Fe)	2017/10/20	NC	80 - 120	103	80 - 120	<50	ug/L	NC	20		
5222289	Total Lead (Pb)	2017/10/20	100	80 - 120	100	80 - 120	<0.50	ug/L				
5222289	Total Magnesium (Mg)	2017/10/20	99	80 - 120	100	80 - 120	<100	ug/L				
5222289	Total Manganese (Mn)	2017/10/20	NC	80 - 120	99	80 - 120	<2.0	ug/L	8.5	20		
5222289	Total Molybdenum (Mo)	2017/10/20	106	80 - 120	104	80 - 120	<2.0	ug/L				
5222289	Total Nickel (Ni)	2017/10/20	96	80 - 120	97	80 - 120	<2.0	ug/L				
5222289	Total Phosphorus (P)	2017/10/20	103	80 - 120	103	80 - 120	<100	ug/L				
5222289	Total Potassium (K)	2017/10/20	102	80 - 120	102	80 - 120	<100	ug/L				
5222289	Total Selenium (Se)	2017/10/20	99	80 - 120	98	80 - 120	<1.0	ug/L				
5222289	Total Silver (Ag)	2017/10/20	99	80 - 120	99	80 - 120	<0.10	ug/L				
5222289	Total Sodium (Na)	2017/10/20	NC	80 - 120	99	80 - 120	<100	ug/L				
5222289	Total Strontium (Sr)	2017/10/20	100	80 - 120	102	80 - 120	<2.0	ug/L				
5222289	Total Thallium (Tl)	2017/10/20	103	80 - 120	105	80 - 120	<0.10	ug/L				
5222289	Total Tin (Sn)	2017/10/20	105	80 - 120	104	80 - 120	<2.0	ug/L				
5222289	Total Titanium (Ti)	2017/10/20	97	80 - 120	97	80 - 120	<2.0	ug/L				
5222289	Total Uranium (U)	2017/10/20	108	80 - 120	106	80 - 120	<0.10	ug/L				
5222289	Total Vanadium (V)	2017/10/20	100	80 - 120	99	80 - 120	<2.0	ug/L				
5222289	Total Zinc (Zn)	2017/10/20	94	80 - 120	98	80 - 120	<5.0	ug/L	2.1	20		
5222396	Benzene	2017/10/20	114	70 - 130	112	70 - 130	<0.0010	mg/L	NC	40		
5222396	C6 - C10 (less BTEX)	2017/10/20					<0.010	mg/L	NC	40		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5222396	Ethylbenzene	2017/10/20	106	70 - 130	105	70 - 130	<0.0010	mg/L	NC	40		
5222396	Toluene	2017/10/20	112	70 - 130	111	70 - 130	<0.0010	mg/L	NC	40		
5222396	Total Xylenes	2017/10/20	103	70 - 130	102	70 - 130	<0.0020	mg/L	NC	40		
5222421	Aroclor 1016	2017/10/24					<0.050	ug/L	NC	40		
5222421	Aroclor 1221	2017/10/24					<0.050	ug/L	NC	40		
5222421	Aroclor 1232	2017/10/24					<0.050	ug/L	NC	40		
5222421	Aroclor 1242	2017/10/24					<0.050	ug/L	NC	40		
5222421	Aroclor 1248	2017/10/24					<0.050	ug/L	NC	40		
5222421	Aroclor 1254	2017/10/24	78	30 - 130	89	30 - 130	<0.050	ug/L	NC	40		
5222421	Aroclor 1260	2017/10/24					<0.050	ug/L	NC	40		
5222664	Aroclor 1016	2017/10/24					<0.050	ug/L	NC	40		
5222664	Aroclor 1221	2017/10/24					<0.050	ug/L	NC	40		
5222664	Aroclor 1232	2017/10/24					<0.050	ug/L	NC	40		
5222664	Aroclor 1242	2017/10/24					<0.050	ug/L	NC	40		
5222664	Aroclor 1248	2017/10/24					<0.050	ug/L	NC	40		
5222664	Aroclor 1254	2017/10/24	73	30 - 130	97	30 - 130	<0.050	ug/L	NC	40		
5222664	Aroclor 1260	2017/10/24					<0.050	ug/L	NC	40		
5229705	pH	2017/10/25							0.71	N/A	100	97 - 103
5229706	Conductivity	2017/10/25			100	80 - 120	<1.0	uS/cm	0.53	25		
5229761	Turbidity	2017/10/25			93	80 - 120	<0.10	NTU	2.6	20	95	80 - 120
5232088	pH	2017/10/26							1.7	N/A	100	97 - 103
5232089	Conductivity	2017/10/26			101	80 - 120	1.3, RDL=1.0	uS/cm	0.59	25		
5232092	pH	2017/10/26							1.6	N/A	100	97 - 103
5232093	Conductivity	2017/10/26			101	80 - 120	1.5, RDL=1.0	uS/cm	0.31	25		
5232101	Turbidity	2017/10/26			92	80 - 120	<0.10	NTU	2.9	20	90	80 - 120
5232107	Turbidity	2017/10/26			93	80 - 120	<0.10	NTU	7.9	20	90	80 - 120
5232206	Nitrogen (Ammonia Nitrogen)	2017/10/27	105	80 - 120	105	80 - 120	<0.050	mg/L	NC	20		
5232354	Total Alkalinity (Total as CaCO3)	2017/10/26	85	80 - 120	106	80 - 120	<5.0	mg/L	NC	25		
5232360	Dissolved Chloride (Cl)	2017/10/30	104	80 - 120	105	80 - 120	<1.0	mg/L	3.5	25	107	80 - 120
5232362	Dissolved Sulphate (SO4)	2017/10/27	94	80 - 120	99	80 - 120	<2.0	mg/L	NC	25		
5232364	Reactive Silica (SiO2)	2017/10/26	96	80 - 120	94	80 - 120	<0.50	mg/L	0.64	25		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5232365	Colour	2017/10/30			100	80 - 120	<5.0	TCU	3.8 (1)	20		
5232372	Orthophosphate (P)	2017/10/30	93	80 - 120	102	80 - 120	<0.010	mg/L	NC	25		
5232379	Nitrate + Nitrite (N)	2017/10/30	105	80 - 120	101	80 - 120	<0.050	mg/L	0.84	25		
5232383	Nitrite (N)	2017/10/27	79 (2)	80 - 120	98	80 - 120	<0.010	mg/L	NC	25		
5235399	Total Organic Carbon (C)	2017/10/27	102	80 - 120	105	80 - 120	<0.50	mg/L	3.4	20		

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) Elevated reporting limit due to sample matrix.

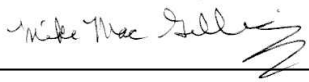
(2) Poor spike recovery due to sample matrix, results confirmed by repeat analysis.

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



Mike MacGillivray, Scientific Specialist (Inorganics)



Phil Deveau, Scientific Specialist (Organics)



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.

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE, CARTWRI
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/27
 Report #: R4807029
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2138

Received: 2017/10/19, 10:14

Sample Matrix: SEDIMENT
 # Samples Received: 7

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted		
Benzo(b/j)fluoranthene Sum (soil)	7	N/A	2017/10/23 N/A	Auto Calc.
TEH in Soil (PIRI) (1)	5	2017/10/23	2017/10/24 ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	2	2017/10/26	2017/10/26 ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	5	2017/10/23	2017/10/23 ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	2	2017/10/23	2017/10/24 ATL SOP 00058	EPA 6020A R1 m
Moisture	7	N/A	2017/10/20 ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (1)	3	2017/10/20	2017/10/22 ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (1)	2	2017/10/20	2017/10/23 ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (1)	2	2017/10/26	2017/10/27 ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (1)	7	2017/10/23	2017/10/24 ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	7	N/A	2017/10/24 N/A	Auto Calc.
ModTPH (T1) Calc. for Soil	7	N/A	2017/10/24 N/A	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	7	N/A	2017/10/23 ATL SOP 00119	Atl. RBCA v3.1 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

Your P.O. #: 121414915.300.002
Your Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/27
Report #: R4807029
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2138

Received: 2017/10/19, 10:14

* 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.

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

=====

This report has been generated and distributed using a secure automated process.

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

RESULTS OF ANALYSES OF SEDIMENT

Maxxam ID		FJF162	FJF163	FJF164	FJF165	FJF166	FJF167	FJF168			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	CWT-SED-8	RDL	QC Batch	MDL

Inorganics											
Moisture	%	91	48	23	18	23	46	91	1.0	5222094	0.20

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		FJF162	FJF163	FJF164	FJF165	FJF166	FJF167			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg	47000	4700	20000	3100	5900	6500	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	3.0	<2.0	2.8	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	45	30	180	19	32	68	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	11	9.7	43	6.9	13	7.9	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.4	2.2	15	1.4	2.8	1.7	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	28	3.0	34	11	7.0	6.0	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	12000	11000	37000	5400	18000	11000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	5.1	5.6	7.1	15	6.1	9.9	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	3.0	19	3.1	3.3	3.5	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	49	100	470	93	180	230	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	0.26	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	4.2	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.8	4.2	28	2.8	4.5	2.6	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	4.8	50	3.9	5.1	5.4	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	0.70	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	15	11	43	11	15	12	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	0.31	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	7.0	0.33	1.3	0.29	0.49	0.41	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	10	20	73	10	36	21	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	8.0	17	80	14	38	56	5.0	5225554	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		FJF168			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SED-8	RDL	QC Batch	MDL
Metals					
Acid Extractable Aluminum (Al)	mg/kg	1100	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	120	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	0.50	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.1	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	16	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	18000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	22	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	250	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.1	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.3	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	1.5	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	43	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	3.7	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	160	5.0	5225554	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		FJF162		FJF163	FJF164	FJF165		FJF166			
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A		N/A	N/A	N/A		N/A			
	UNITS	CWT-SED-2	QC Batch	CWT-SED-3	CWT-SED-4	CWT-SED-5	QC Batch	CWT-SED-6	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons											
1-Methylnaphthalene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
2-Methylnaphthalene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Acenaphthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Acenaphthylene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Anthracene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Benzo(a)anthracene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.022	0.010	5232260	N/A
Benzo(a)pyrene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.064	0.010	5232260	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.10	0.010	5232260	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	5220115	<0.020	<0.020	<0.020	5220115	0.15	0.020	5220115	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.058	0.010	5232260	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.041	0.010	5232260	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.045	0.010	5232260	N/A
Chrysene	mg/kg	<0.010	5232260	0.020	<0.010	<0.010	5222187	0.060	0.010	5232260	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.017	0.010	5232260	N/A
Fluoranthene	mg/kg	<0.010	5232260	0.035	<0.010	0.016	5222187	0.026	0.010	5232260	N/A
Fluorene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.059	0.010	5232260	N/A
Naphthalene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Perylene	mg/kg	<0.010	5232260	0.039	<0.010	0.16	5222187	<0.010	0.010	5232260	N/A
Phenanthrene	mg/kg	<0.010	5232260	0.021	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Pyrene	mg/kg	<0.010	5232260	0.028	<0.010	<0.010	5222187	0.022	0.010	5232260	N/A
Surrogate Recovery (%)											
D10-Anthracene	%	92	5232260	94	93	89	5222187	90		5232260	
D14-Terphenyl (FS)	%	93	5232260	95	97	92	5222187	93		5232260	
D8-Acenaphthylene	%	92	5232260	105	103	98	5222187	91		5232260	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable											

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		FJF167	FJF168			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-SED-7	CWT-SED-8	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Acenaphthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Anthracene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	0.020	5220115	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Chrysene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Fluorene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Naphthalene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Perylene	mg/kg	0.37	12	0.010	5222187	N/A
Phenanthrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Pyrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Surrogate Recovery (%)						
D10-Anthracene	%	92	87		5222187	
D14-Terphenyl (FS)	%	95	107		5222187	
D8-Acenaphthylene	%	98	96		5222187	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		FJF162			FJF163	FJF164	FJF164			
Sampling Date		2017/10/13			2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A			N/A	N/A	N/A			
	UNITS	CWT-SED-2	RDL	QC Batch	CWT-SED-3	CWT-SED-4	CWT-SED-4 Lab-Dup	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.050	0.050	5222350	<0.025	<0.025		0.025	5222350	N/A
Toluene	mg/kg	<0.050	0.050	5222350	<0.025	<0.025		0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.050	0.050	5222350	<0.025	<0.025		0.025	5222350	0.025
Total Xylenes	mg/kg	<0.10	0.10	5222350	<0.050	<0.050		0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<5.0	5.0	5222350	<2.5	<2.5		2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	5232393	<10	<10	<10	10	5225359	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	5232393	<10	<10	<10	10	5225359	N/A
>C21-<C32 Hydrocarbons	mg/kg	380	15	5232393	69	<15	<15	15	5225359	N/A
Modified TPH (Tier1)	mg/kg	380	15	5220012	69	<15		15	5220012	N/A
Reached Baseline at C32	mg/kg	Yes	N/A	5232393	Yes	NA		N/A	5225359	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5232393	COMMENT (1)	NA		N/A	5225359	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	101		5232393	75	71	69		5225359	
n-Dotriacontane - Extractable	%	105		5232393	102	106	101		5225359	
Isobutylbenzene - Volatile	%	96 (2)		5222350	99	103 (3)			5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Possible lube oil fraction. (2) Elevated VPH RDL(s) due to limited sample. (3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.										

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		FJF165		FJF166		FJF167			
Sampling Date		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A			
	UNITS	CWT-SED-5	QC Batch	CWT-SED-6	QC Batch	CWT-SED-7	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	N/A
Toluene	mg/kg	<0.025	5222350	<0.025	5222350	0.10	0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	5222350	<0.050	5222350	<0.050	0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5222350	<2.5	5222350	<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	110	5225359	<10	5232393	19	10	5225359	N/A
>C16-C21 Hydrocarbons	mg/kg	300	5225359	<10	5232393	75	10	5225359	N/A
>C21-<C32 Hydrocarbons	mg/kg	1200	5225359	62	5232393	330	15	5225359	N/A
Modified TPH (Tier1)	mg/kg	1600	5220012	62	5220012	430	15	5220012	N/A
Reached Baseline at C32	mg/kg	No	5225359	Yes	5232393	No	N/A	5225359	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5225359	COMMENT (2)	5232393	COMMENT (3)	N/A	5225359	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	77	5225359	101	5232393	70		5225359	
n-Dotriacontane - Extractable	%	130	5225359	108	5232393	96		5225359	
Isobutylbenzene - Volatile	%	82	5222350	101	5222350	86		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel / lube range. Lube oil fraction. (2) Possible lube oil fraction. (3) Lube oil fraction. Unidentified compound(s) in fuel / lube range.									

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		FJF168			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SED-8	RDL	QC Batch	MDL
Petroleum Hydrocarbons					
Benzene	mg/kg	<0.025	0.025	5222350	N/A
Toluene	mg/kg	<0.025	0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	5225359	N/A
>C16-C21 Hydrocarbons	mg/kg	300	10	5225359	N/A
>C21-<C32 Hydrocarbons	mg/kg	2200	15	5225359	N/A
Modified TPH (Tier1)	mg/kg	2500	15	5220012	N/A
Reached Baseline at C32	mg/kg	No	N/A	5225359	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5225359	N/A
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	79		5225359	
n-Dotriacontane - Extractable	%	114		5225359	
Isobutylbenzene - Volatile	%	63		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction.					

POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)

Maxxam ID		FJF162	FJF163	FJF164	FJF165	FJF166	FJF167			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	RDL	QC Batch	MDL
PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	0.17	<0.050	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.17	<0.050	0.050	5220167	N/A
Surrogate Recovery (%)										
Decachlorobiphenyl	%	93 (1)	93 (1)	94 (1)	77 (1)	87 (1)	87 (1)		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB:Unidentified (possibly halogenated) compounds detected.										

Maxxam ID		FJF168			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SED-8	RDL	QC Batch	MDL
PCBs					
Aroclor 1016	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	0.050	5220167	N/A
Surrogate Recovery (%)					
Decachlorobiphenyl	%	83 (1)		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB:Unidentified (possibly halogenated) compounds detected.					

TEST SUMMARY

Maxxam ID: FJF162
Sample ID: CWT-SED-2
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5232393	2017/10/26	2017/10/26	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5232260	2017/10/26	2017/10/27	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF163
Sample ID: CWT-SED-3
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/22	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF164
Sample ID: CWT-SED-4
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/22	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

TEST SUMMARY

Maxxam ID: FJF164 Dup
Sample ID: CWT-SED-4
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews

Maxxam ID: FJF165
Sample ID: CWT-SED-5
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/22	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF166
Sample ID: CWT-SED-6
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5232393	2017/10/26	2017/10/26	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5232260	2017/10/26	2017/10/27	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF167
Sample ID: CWT-SED-7
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/23	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk

TEST SUMMARY

Maxxam ID: FJF167
Sample ID: CWT-SED-7
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF168
Sample ID: CWT-SED-8
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/23	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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Results relate only to the items tested.

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222187	D10-Anthracene	2017/10/22	90	50 - 130	95	50 - 130	97	%		
5222187	D14-Terphenyl (FS)	2017/10/22	91	50 - 130	96	50 - 130	96	%		
5222187	D8-Acenaphthylene	2017/10/22	98	50 - 130	101	50 - 130	100	%		
5222350	Isobutylbenzene - Volatile	2017/10/23	97 (2)	60 - 130	97	60 - 130	97	%		
5225359	Isobutylbenzene - Extractable	2017/10/24	75	30 - 130	80	30 - 130	68	%		
5225359	n-Dotriacontane - Extractable	2017/10/24	100	30 - 130	111	30 - 130	99	%		
5225858	Decachlorobiphenyl	2017/10/24	87	30 - 130	93	30 - 130	92	%		
5232260	D10-Anthracene	2017/10/27	98	50 - 130	94	50 - 130	108	%		
5232260	D14-Terphenyl (FS)	2017/10/27	96	50 - 130	89	50 - 130	105	%		
5232260	D8-Acenaphthylene	2017/10/27	96	50 - 130	90	50 - 130	105	%		
5232393	Isobutylbenzene - Extractable	2017/10/26	104	30 - 130	102	30 - 130	91	%		
5232393	n-Dotriacontane - Extractable	2017/10/26	105 (3)	30 - 130	107	30 - 130	95	%		
5222094	Moisture	2017/10/20							2.1	25
5222187	1-Methylnaphthalene	2017/10/22	98	30 - 130	106	30 - 130	<0.010	mg/kg	NC	50
5222187	2-Methylnaphthalene	2017/10/22	108	30 - 130	116	30 - 130	<0.010	mg/kg	NC	50
5222187	Acenaphthene	2017/10/22	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5222187	Acenaphthylene	2017/10/22	105	30 - 130	108	30 - 130	<0.010	mg/kg	NC	50
5222187	Anthracene	2017/10/22	93	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5222187	Benzo(a)anthracene	2017/10/22	80	30 - 130	87	30 - 130	<0.010	mg/kg	31	50
5222187	Benzo(a)pyrene	2017/10/22	89	30 - 130	102	30 - 130	<0.010	mg/kg	13	50
5222187	Benzo(b)fluoranthene	2017/10/22	93	30 - 130	106	30 - 130	<0.010	mg/kg	45	50
5222187	Benzo(g,h,i)perylene	2017/10/22	102	30 - 130	111	30 - 130	<0.010	mg/kg	54 (1)	50
5222187	Benzo(j)fluoranthene	2017/10/22	96	30 - 130	109	30 - 130	<0.010	mg/kg	28	50
5222187	Benzo(k)fluoranthene	2017/10/22	94	30 - 130	108	30 - 130	<0.010	mg/kg	29	50
5222187	Chrysene	2017/10/22	82	30 - 130	87	30 - 130	<0.010	mg/kg	29	50
5222187	Dibenz(a,h)anthracene	2017/10/22	99	30 - 130	105	30 - 130	<0.010	mg/kg	NC	50
5222187	Fluoranthene	2017/10/22	92	30 - 130	101	30 - 130	<0.010	mg/kg	29	50
5222187	Fluorene	2017/10/22	97	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50
5222187	Indeno(1,2,3-cd)pyrene	2017/10/22	99	30 - 130	105	30 - 130	<0.010	mg/kg	39	50
5222187	Naphthalene	2017/10/22	112	30 - 130	128	30 - 130	<0.010	mg/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222187	Perylene	2017/10/22	89	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50
5222187	Phenanthrene	2017/10/22	105	30 - 130	94	30 - 130	<0.010	mg/kg	12	50
5222187	Pyrene	2017/10/22	90	30 - 130	98	30 - 130	<0.010	mg/kg	25	50
5222350	Benzene	2017/10/23	98	60 - 130	89	60 - 140	<0.025	mg/kg	NC	50
5222350	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50
5222350	Ethylbenzene	2017/10/23	111	60 - 130	97	60 - 140	<0.025	mg/kg	NC	50
5222350	Toluene	2017/10/23	108	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50
5222350	Total Xylenes	2017/10/23	124	60 - 130	96	60 - 140	<0.050	mg/kg	NC	50
5225359	>C10-C16 Hydrocarbons	2017/10/24	86	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C16-C21 Hydrocarbons	2017/10/24	87	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C21-<C32 Hydrocarbons	2017/10/24	103	30 - 130	107	30 - 130	<15	mg/kg	NC	50
5225554	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	1.6	35
5225554	Acid Extractable Antimony (Sb)	2017/10/24	102	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Arsenic (As)	2017/10/24	97	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Barium (Ba)	2017/10/24	115	75 - 125	105	75 - 125	<5.0	mg/kg	5.5	35
5225554	Acid Extractable Beryllium (Be)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Bismuth (Bi)	2017/10/24	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Boron (B)	2017/10/24	99	75 - 125	105	75 - 125	<50	mg/kg	NC	35
5225554	Acid Extractable Cadmium (Cd)	2017/10/24	100	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35
5225554	Acid Extractable Chromium (Cr)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	5.1	35
5225554	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	100	75 - 125	<1.0	mg/kg	26	35
5225554	Acid Extractable Copper (Cu)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	1.8	35
5225554	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	12	35
5225554	Acid Extractable Lead (Pb)	2017/10/24	101	75 - 125	102	75 - 125	<0.50	mg/kg	14	35
5225554	Acid Extractable Lithium (Li)	2017/10/24	107	75 - 125	102	75 - 125	<2.0	mg/kg	12	35
5225554	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	103	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Molybdenum (Mo)	2017/10/24	104	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Nickel (Ni)	2017/10/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Rubidium (Rb)	2017/10/24	102	75 - 125	103	75 - 125	<2.0	mg/kg	14	35

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5225554	Acid Extractable Selenium (Se)	2017/10/24	97	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35
5225554	Acid Extractable Silver (Ag)	2017/10/24	100	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35
5225554	Acid Extractable Strontium (Sr)	2017/10/24	110	75 - 125	104	75 - 125	<5.0	mg/kg	16	35
5225554	Acid Extractable Thallium (Tl)	2017/10/24	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Tin (Sn)	2017/10/24	101	75 - 125	111	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Uranium (U)	2017/10/24	101	75 - 125	100	75 - 125	<0.10	mg/kg	33	35
5225554	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	101	75 - 125	<2.0	mg/kg	6.1	35
5225554	Acid Extractable Zinc (Zn)	2017/10/24	105	75 - 125	101	75 - 125	<5.0	mg/kg	11	35
5225858	Aroclor 1016	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1221	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1232	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1242	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1248	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1254	2017/10/24	84	30 - 130	98	30 - 130	<0.050	ug/g	NC	50
5225858	Aroclor 1260	2017/10/24					<0.050	ug/g	NC	50
5232260	1-Methylnaphthalene	2017/10/27	90	30 - 130	79	30 - 130	<0.010	mg/kg	NC	50
5232260	2-Methylnaphthalene	2017/10/27	102	30 - 130	87	30 - 130	<0.010	mg/kg	NC	50
5232260	Acenaphthene	2017/10/27	101	30 - 130	94	30 - 130	<0.010	mg/kg	NC	50
5232260	Acenaphthylene	2017/10/27	86	30 - 130	82	30 - 130	<0.010	mg/kg	NC	50
5232260	Anthracene	2017/10/27	99	30 - 130	94	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(a)anthracene	2017/10/27	104	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(a)pyrene	2017/10/27	99	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(b)fluoranthene	2017/10/27	100	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(g,h,i)perylene	2017/10/27	105	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(j)fluoranthene	2017/10/27	102	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(k)fluoranthene	2017/10/27	98	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Chrysene	2017/10/27	104	30 - 130	91	30 - 130	<0.010	mg/kg	NC	50
5232260	Dibenz(a,h)anthracene	2017/10/27	101	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5232260	Fluoranthene	2017/10/27	103	30 - 130	99	30 - 130	<0.010	mg/kg	35	50
5232260	Fluorene	2017/10/27	102	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5232260	Indeno(1,2,3-cd)pyrene	2017/10/27	102	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50
5232260	Naphthalene	2017/10/27	100	30 - 130	89	30 - 130	<0.010	mg/kg	NC	50
5232260	Perylene	2017/10/27	100	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Phenanthrene	2017/10/27	98	30 - 130	93	30 - 130	<0.010	mg/kg	NC	50
5232260	Pyrene	2017/10/27	100	30 - 130	98	30 - 130	<0.010	mg/kg	27	50
5232393	>C10-C16 Hydrocarbons	2017/10/26	NC	30 - 130	90	30 - 130	<10	mg/kg	17	50
5232393	>C16-C21 Hydrocarbons	2017/10/26	NC	30 - 130	90	30 - 130	<10	mg/kg	26	50
5232393	>C21-<C32 Hydrocarbons	2017/10/26	NC	30 - 130	107	30 - 130	<15	mg/kg	11	50

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

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

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

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

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

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

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

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

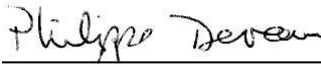
(3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

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



Phil Deveau, 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.

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE, CARTWRI
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/10
 Report #: R4844288
 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B7N2138

Received: 2017/10/19, 10:14

Sample Matrix: SEDIMENT
 # Samples Received: 7

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Benzo(b/j)fluoranthene Sum (soil)	7	N/A	2017/10/23	N/A	Auto Calc.
TEH in Soil (PIRI) (1)	1	2017/10/23	2017/10/24	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (1)	6	2017/11/09	2017/11/09	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	5	2017/10/23	2017/10/23	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	2	2017/10/23	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Moisture	7	N/A	2017/10/20	ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (1)	3	2017/10/20	2017/10/22	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (1)	2	2017/10/20	2017/10/23	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (1)	2	2017/10/26	2017/10/27	ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (1)	7	2017/10/23	2017/10/24	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	7	N/A	2017/10/24	N/A	Auto Calc.
ModTPH (T1) Calc. for Soil	1	N/A	2017/10/24	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	6	N/A	2017/11/10	N/A	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (2)	7	N/A	2017/10/23	ATL SOP 00119	Atl. RBCA v3.1 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

Your P.O. #: 121414915.300.002
Your Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/10
Report #: R4844288
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B7N2138

Received: 2017/10/19, 10:14

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.

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 SEDIMENT

Maxxam ID		FJF162	FJF163	FJF164	FJF165	FJF166	FJF167	FJF168			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	CWT-SED-8	RDL	QC Batch	MDL

Inorganics											
Moisture	%	91	48	23	18	23	46	91	1.0	5222094	0.20

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		FJF162	FJF163	FJF164	FJF165	FJF166	FJF167			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg	47000	4700	20000	3100	5900	6500	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	3.0	<2.0	2.8	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	45	30	180	19	32	68	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	11	9.7	43	6.9	13	7.9	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.4	2.2	15	1.4	2.8	1.7	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	28	3.0	34	11	7.0	6.0	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	12000	11000	37000	5400	18000	11000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	5.1	5.6	7.1	15	6.1	9.9	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	3.0	19	3.1	3.3	3.5	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	49	100	470	93	180	230	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	0.26	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	4.2	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.8	4.2	28	2.8	4.5	2.6	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	4.8	50	3.9	5.1	5.4	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	3.2	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	0.70	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	15	11	43	11	15	12	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	0.31	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	7.0	0.33	1.3	0.29	0.49	0.41	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	10	20	73	10	36	21	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	8.0	17	80	14	38	56	5.0	5225554	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SEDIMENT)

Maxxam ID		FJF168			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SED-8	RDL	QC Batch	MDL
Metals					
Acid Extractable Aluminum (Al)	mg/kg	1100	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	120	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	0.50	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.1	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	16	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	18000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	22	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	250	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	2.1	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.3	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	1.5	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	43	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	3.7	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	160	5.0	5225554	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		FJF162		FJF163	FJF164	FJF165		FJF166			
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A		N/A	N/A	N/A		N/A			
	UNITS	CWT-SED-2	QC Batch	CWT-SED-3	CWT-SED-4	CWT-SED-5	QC Batch	CWT-SED-6	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons											
1-Methylnaphthalene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
2-Methylnaphthalene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Acenaphthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Acenaphthylene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Anthracene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Benzo(a)anthracene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.022	0.010	5232260	N/A
Benzo(a)pyrene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.064	0.010	5232260	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.10	0.010	5232260	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	5220115	<0.020	<0.020	<0.020	5220115	0.15	0.020	5220115	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.058	0.010	5232260	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.041	0.010	5232260	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.045	0.010	5232260	N/A
Chrysene	mg/kg	<0.010	5232260	0.020	<0.010	<0.010	5222187	0.060	0.010	5232260	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.017	0.010	5232260	N/A
Fluoranthene	mg/kg	<0.010	5232260	0.035	<0.010	0.016	5222187	0.026	0.010	5232260	N/A
Fluorene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	0.059	0.010	5232260	N/A
Naphthalene	mg/kg	<0.010	5232260	<0.010	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Perylene	mg/kg	<0.010	5232260	0.039	<0.010	0.16	5222187	<0.010	0.010	5232260	N/A
Phenanthrene	mg/kg	<0.010	5232260	0.021	<0.010	<0.010	5222187	<0.010	0.010	5232260	N/A
Pyrene	mg/kg	<0.010	5232260	0.028	<0.010	<0.010	5222187	0.022	0.010	5232260	N/A
Surrogate Recovery (%)											
D10-Anthracene	%	92	5232260	94	93	89	5222187	90		5232260	
D14-Terphenyl (FS)	%	93	5232260	95	97	92	5222187	93		5232260	
D8-Acenaphthylene	%	92	5232260	105	103	98	5222187	91		5232260	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable											

SEMI-VOLATILE ORGANICS BY GC-MS (SEDIMENT)

Maxxam ID		FJF167	FJF168			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-SED-7	CWT-SED-8	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Acenaphthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Anthracene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	0.020	5220115	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Chrysene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Fluoranthene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Fluorene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Naphthalene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Perylene	mg/kg	0.37	12	0.010	5222187	N/A
Phenanthrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Pyrene	mg/kg	<0.010	<0.010	0.010	5222187	N/A
Surrogate Recovery (%)						
D10-Anthracene	%	92	87		5222187	
D14-Terphenyl (FS)	%	95	107		5222187	
D8-Acenaphthylene	%	98	96		5222187	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		FJF162		FJF163		FJF164	FJF164			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-SED-2	RDL	CWT-SED-3	QC Batch	CWT-SED-4	CWT-SED-4 Lab-Dup	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.050	0.050	<0.025	5222350	<0.025		0.025	5222350	N/A
Toluene	mg/kg	<0.050	0.050	<0.025	5222350	<0.025		0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.050	0.050	<0.025	5222350	<0.025		0.025	5222350	0.025
Total Xylenes	mg/kg	<0.10	0.10	<0.050	5222350	<0.050		0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<5.0	5.0	<2.5	5222350	<2.5		2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	<10	5256978	<10	<10	10	5225359	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	<10	5256978	<10	<10	10	5225359	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	15	<15	5256978	<15	<15	15	5225359	N/A
Modified TPH (Tier1)	mg/kg	<15	15	<15	5260254	<15		15	5220012	N/A
Reached Baseline at C32	mg/kg	NA	N/A	NA	5256978	NA		N/A	5225359	N/A
Hydrocarbon Resemblance	mg/kg	NA	N/A	NA	5256978	NA		N/A	5225359	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	110		95	5256978	71	69		5225359	
n-Dotriacontane - Extractable	%	121 (1)		90 (1)	5256978	106	101		5225359	
Isobutylbenzene - Volatile	%	96 (2)		99	5222350	103 (3)			5222350	
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) Elevated VPH RDL(s) due to limited sample. (3) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.										

ATLANTIC RBCA HYDROCARBONS (SEDIMENT)

Maxxam ID		FJF165	FJF166	FJF167	FJF168			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-5	CWT-SED-6	CWT-SED-7	CWT-SED-8	RDL	QC Batch	MDL
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5222350	N/A
Toluene	mg/kg	<0.025	<0.025	0.10	<0.025	0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	120	<10	<10	<10	10	5256978	N/A
>C16-C21 Hydrocarbons	mg/kg	300	<10	25	<10	10	5256978	N/A
>C21-<C32 Hydrocarbons	mg/kg	1000	39	110	590	15	5256978	N/A
Modified TPH (Tier1)	mg/kg	1400	39	140	590	15	5260254	N/A
Reached Baseline at C32	mg/kg	No	Yes	Yes	Yes	N/A	5256978	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	COMMENT (2)	COMMENT (3)	N/A	5256978	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	97	108	84	100		5256978	
n-Dotriacontane - Extractable	%	124 (4)	97 (4)	90 (4)	108 (4)		5256978	
Isobutylbenzene - Volatile	%	82	101	86	63		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel / lube range. Lube oil fraction. (2) Unidentified compound(s) in lube oil range. Possible lube oil fraction. (3) Unidentified compound(s) in lube oil range. (4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.								

POLYCHLORINATED BIPHENYLS BY GC-ECD (SEDIMENT)

Maxxam ID		FJF162	FJF163	FJF164	FJF165	FJF166	FJF167			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SED-2	CWT-SED-3	CWT-SED-4	CWT-SED-5	CWT-SED-6	CWT-SED-7	RDL	QC Batch	MDL
PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	0.17	<0.050	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.17	<0.050	0.050	5220167	N/A
Surrogate Recovery (%)										
Decachlorobiphenyl	%	93 (1)	93 (1)	94 (1)	77 (1)	87 (1)	87 (1)		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB:Unidentified (possibly halogenated) compounds detected.										

Maxxam ID		FJF168			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SED-8	RDL	QC Batch	MDL
PCBs					
Aroclor 1016	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	0.050	5220167	N/A
Surrogate Recovery (%)					
Decachlorobiphenyl	%	83 (1)		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB:Unidentified (possibly halogenated) compounds detected.					

TEST SUMMARY

Maxxam ID: FJF162
Sample ID: CWT-SED-2
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5256978	2017/11/09	2017/11/09	Crystal Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5232260	2017/10/26	2017/10/27	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5260254	N/A	2017/11/10	Rosemarie MacDonald
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF163
Sample ID: CWT-SED-3
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5256978	2017/11/09	2017/11/09	Crystal Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/22	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5260254	N/A	2017/11/10	Rosemarie MacDonald
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF164
Sample ID: CWT-SED-4
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/22	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

TEST SUMMARY

Maxxam ID: FJF164 Dup
Sample ID: CWT-SED-4
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews

Maxxam ID: FJF165
Sample ID: CWT-SED-5
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5256978	2017/11/09	2017/11/09	Crystal Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/22	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5260254	N/A	2017/11/10	Rosemarie MacDonald
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF166
Sample ID: CWT-SED-6
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5256978	2017/11/09	2017/11/09	Crystal Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5232260	2017/10/26	2017/10/27	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5260254	N/A	2017/11/10	Rosemarie MacDonald
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF167
Sample ID: CWT-SED-7
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5256978	2017/11/09	2017/11/09	Crystal Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/23	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk

TEST SUMMARY

Maxxam ID: FJF167
Sample ID: CWT-SED-7
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5260254	N/A	2017/11/10	Rosemarie MacDonald
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF168
Sample ID: CWT-SED-8
Matrix: SEDIMENT

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/23	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5256978	2017/11/09	2017/11/09	Crystal Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5222187	2017/10/20	2017/10/23	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5260254	N/A	2017/11/10	Rosemarie MacDonald
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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Revised Report - Silica gel clean-up + Extractable Hydrocarbons added to samples CWT-SED2, CWT-SED3, CWT-SED5, CWT-SED6, CWT-SED7 and CWT-SED8 as per request from Paula. Nov 7/17 HWS

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222187	D10-Anthracene	2017/10/22	90	50 - 130	95	50 - 130	97	%		
5222187	D14-Terphenyl (FS)	2017/10/22	91	50 - 130	96	50 - 130	96	%		
5222187	D8-Acenaphthylene	2017/10/22	98	50 - 130	101	50 - 130	100	%		
5222350	Isobutylbenzene - Volatile	2017/10/23	97 (2)	60 - 130	97	60 - 130	97	%		
5225359	Isobutylbenzene - Extractable	2017/10/24	75	30 - 130	80	30 - 130	68	%		
5225359	n-Dotriacontane - Extractable	2017/10/24	100	30 - 130	111	30 - 130	99	%		
5225858	Decachlorobiphenyl	2017/10/24	87	30 - 130	93	30 - 130	92	%		
5232260	D10-Anthracene	2017/10/27	98	50 - 130	94	50 - 130	108	%		
5232260	D14-Terphenyl (FS)	2017/10/27	96	50 - 130	89	50 - 130	105	%		
5232260	D8-Acenaphthylene	2017/10/27	96	50 - 130	90	50 - 130	105	%		
5256978	Isobutylbenzene - Extractable	2017/11/09			99	30 - 130	84	%		
5256978	n-Dotriacontane - Extractable	2017/11/09			115	30 - 130	112	%		
5222094	Moisture	2017/10/20							2.1	25
5222187	1-Methylnaphthalene	2017/10/22	98	30 - 130	106	30 - 130	<0.010	mg/kg	NC	50
5222187	2-Methylnaphthalene	2017/10/22	108	30 - 130	116	30 - 130	<0.010	mg/kg	NC	50
5222187	Acenaphthene	2017/10/22	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5222187	Acenaphthylene	2017/10/22	105	30 - 130	108	30 - 130	<0.010	mg/kg	NC	50
5222187	Anthracene	2017/10/22	93	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5222187	Benzo(a)anthracene	2017/10/22	80	30 - 130	87	30 - 130	<0.010	mg/kg	31	50
5222187	Benzo(a)pyrene	2017/10/22	89	30 - 130	102	30 - 130	<0.010	mg/kg	13	50
5222187	Benzo(b)fluoranthene	2017/10/22	93	30 - 130	106	30 - 130	<0.010	mg/kg	45	50
5222187	Benzo(g,h,i)perylene	2017/10/22	102	30 - 130	111	30 - 130	<0.010	mg/kg	54 (1)	50
5222187	Benzo(j)fluoranthene	2017/10/22	96	30 - 130	109	30 - 130	<0.010	mg/kg	28	50
5222187	Benzo(k)fluoranthene	2017/10/22	94	30 - 130	108	30 - 130	<0.010	mg/kg	29	50
5222187	Chrysene	2017/10/22	82	30 - 130	87	30 - 130	<0.010	mg/kg	29	50
5222187	Dibenz(a,h)anthracene	2017/10/22	99	30 - 130	105	30 - 130	<0.010	mg/kg	NC	50
5222187	Fluoranthene	2017/10/22	92	30 - 130	101	30 - 130	<0.010	mg/kg	29	50
5222187	Fluorene	2017/10/22	97	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50
5222187	Indeno(1,2,3-cd)pyrene	2017/10/22	99	30 - 130	105	30 - 130	<0.010	mg/kg	39	50
5222187	Naphthalene	2017/10/22	112	30 - 130	128	30 - 130	<0.010	mg/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222187	Perylene	2017/10/22	89	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50
5222187	Phenanthrene	2017/10/22	105	30 - 130	94	30 - 130	<0.010	mg/kg	12	50
5222187	Pyrene	2017/10/22	90	30 - 130	98	30 - 130	<0.010	mg/kg	25	50
5222350	Benzene	2017/10/23	98	60 - 130	89	60 - 140	<0.025	mg/kg	NC	50
5222350	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50
5222350	Ethylbenzene	2017/10/23	111	60 - 130	97	60 - 140	<0.025	mg/kg	NC	50
5222350	Toluene	2017/10/23	108	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50
5222350	Total Xylenes	2017/10/23	124	60 - 130	96	60 - 140	<0.050	mg/kg	NC	50
5225359	>C10-C16 Hydrocarbons	2017/10/24	86	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C16-C21 Hydrocarbons	2017/10/24	87	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C21-<C32 Hydrocarbons	2017/10/24	103	30 - 130	107	30 - 130	<15	mg/kg	NC	50
5225554	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	1.6	35
5225554	Acid Extractable Antimony (Sb)	2017/10/24	102	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Arsenic (As)	2017/10/24	97	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Barium (Ba)	2017/10/24	115	75 - 125	105	75 - 125	<5.0	mg/kg	5.5	35
5225554	Acid Extractable Beryllium (Be)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Bismuth (Bi)	2017/10/24	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Boron (B)	2017/10/24	99	75 - 125	105	75 - 125	<50	mg/kg	NC	35
5225554	Acid Extractable Cadmium (Cd)	2017/10/24	100	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35
5225554	Acid Extractable Chromium (Cr)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	5.1	35
5225554	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	100	75 - 125	<1.0	mg/kg	26	35
5225554	Acid Extractable Copper (Cu)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	1.8	35
5225554	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	12	35
5225554	Acid Extractable Lead (Pb)	2017/10/24	101	75 - 125	102	75 - 125	<0.50	mg/kg	14	35
5225554	Acid Extractable Lithium (Li)	2017/10/24	107	75 - 125	102	75 - 125	<2.0	mg/kg	12	35
5225554	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	103	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Molybdenum (Mo)	2017/10/24	104	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Nickel (Ni)	2017/10/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Rubidium (Rb)	2017/10/24	102	75 - 125	103	75 - 125	<2.0	mg/kg	14	35

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5225554	Acid Extractable Selenium (Se)	2017/10/24	97	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35
5225554	Acid Extractable Silver (Ag)	2017/10/24	100	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35
5225554	Acid Extractable Strontium (Sr)	2017/10/24	110	75 - 125	104	75 - 125	<5.0	mg/kg	16	35
5225554	Acid Extractable Thallium (Tl)	2017/10/24	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Tin (Sn)	2017/10/24	101	75 - 125	111	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Uranium (U)	2017/10/24	101	75 - 125	100	75 - 125	<0.10	mg/kg	33	35
5225554	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	101	75 - 125	<2.0	mg/kg	6.1	35
5225554	Acid Extractable Zinc (Zn)	2017/10/24	105	75 - 125	101	75 - 125	<5.0	mg/kg	11	35
5225858	Aroclor 1016	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1221	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1232	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1242	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1248	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1254	2017/10/24	84	30 - 130	98	30 - 130	<0.050	ug/g	NC	50
5225858	Aroclor 1260	2017/10/24					<0.050	ug/g	NC	50
5232260	1-Methylnaphthalene	2017/10/27	90	30 - 130	79	30 - 130	<0.010	mg/kg	NC	50
5232260	2-Methylnaphthalene	2017/10/27	102	30 - 130	87	30 - 130	<0.010	mg/kg	NC	50
5232260	Acenaphthene	2017/10/27	101	30 - 130	94	30 - 130	<0.010	mg/kg	NC	50
5232260	Acenaphthylene	2017/10/27	86	30 - 130	82	30 - 130	<0.010	mg/kg	NC	50
5232260	Anthracene	2017/10/27	99	30 - 130	94	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(a)anthracene	2017/10/27	104	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(a)pyrene	2017/10/27	99	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(b)fluoranthene	2017/10/27	100	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(g,h,i)perylene	2017/10/27	105	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(j)fluoranthene	2017/10/27	102	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5232260	Benzo(k)fluoranthene	2017/10/27	98	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Chrysene	2017/10/27	104	30 - 130	91	30 - 130	<0.010	mg/kg	NC	50
5232260	Dibenz(a,h)anthracene	2017/10/27	101	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5232260	Fluoranthene	2017/10/27	103	30 - 130	99	30 - 130	<0.010	mg/kg	35	50
5232260	Fluorene	2017/10/27	102	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE, CARTWRI
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5232260	Indeno(1,2,3-cd)pyrene	2017/10/27	102	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50
5232260	Naphthalene	2017/10/27	100	30 - 130	89	30 - 130	<0.010	mg/kg	NC	50
5232260	Perylene	2017/10/27	100	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5232260	Phenanthrene	2017/10/27	98	30 - 130	93	30 - 130	<0.010	mg/kg	NC	50
5232260	Pyrene	2017/10/27	100	30 - 130	98	30 - 130	<0.010	mg/kg	27	50
5256978	>C10-C16 Hydrocarbons	2017/11/09			98	30 - 130	<10	mg/kg		
5256978	>C16-C21 Hydrocarbons	2017/11/09			92	30 - 130	<10	mg/kg		
5256978	>C21-<C32 Hydrocarbons	2017/11/09			105	30 - 130	<15	mg/kg		

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

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

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

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

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

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

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

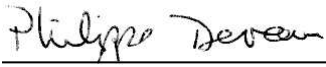
(2) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

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



Phil Deveau, Scientific Specialist (Organics)



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.

Your Project #: 121414915.300.002
 Site Location: FORMER MILLITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/30
 Report #: R4812153
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2164

Received: 2017/10/19, 10:14

Sample Matrix: Soil
 # Samples Received: 6

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/10/25	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/10/28	N/A	Auto Calc.
TEH in Soil (PIRI) (2)	1	2017/10/20	2017/10/23	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (2)	4	2017/10/23	2017/10/24	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	5	2017/10/23	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Moisture	5	N/A	2017/10/20	ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (2)	1	2017/10/23	2017/10/25	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (2)	1	2017/10/23	2017/10/27	ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (2)	5	2017/10/23	2017/10/24	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	5	N/A	2017/10/24	N/A	Auto Calc.
Asbestos (bulk) by PLM (Sub fr Bedford) (1)	1	N/A	2017/10/30		
ModTPH (T1) Calc. for Soil	5	N/A	2017/10/24	N/A	Atl. RBCA v3.1 m
VOCs in Soil - Field Preserved (3)	2	N/A	2017/10/25	ATL SOP 00133	EPA 8260C R3 m
VPH in Soil (PIRI) - Field Preserved (3)	5	N/A	2017/10/23	ATL SOP 00119	Atl. RBCA v3.1 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

Your Project #: 121414915.300.002
Site Location: FORMER MILLITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/30
Report #: R4812153
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2164

Received: 2017/10/19, 10:14

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

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

- (1) This test was performed by Sub Bedford to EMSL
- (2) Soils are reported on a dry weight basis unless otherwise specified.
- (3) 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.

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

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

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJF317	FJF317		FJF318	FJF319	FJF320			
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A		N/A	N/A	N/A			
	UNITS	CWT-TP1-BS1	CWT-TP1-BS1 Lab-Dup	RDL	CWT-TP2-BS2	CWT-TP3-BS2	CWT-TP4-BS1	RDL	QC Batch	MDL

Inorganics										
Moisture	%	34	33	1.0		31	27	1.0	5222094	0.20

Subcontracted Analysis										
Subcontract Parameter	N/A				ATTACHED				5224435	N/A

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

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL

Inorganics						
Moisture	%	32	18	1.0	5222094	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJF317	FJF319	FJF320	FJF320	FJF321			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP1-BS1	CWT-TP3-BS2	CWT-TP4-BS1	CWT-TP4-BS1 Lab-Dup	CWT-TP5-BS2	RDL	QC Batch	MDL

Metals

Acid Extractable Aluminum (Al)	mg/kg	7900	6200	7400	7500	5800	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	3.2	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	15	39	14	15	58	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	2.0	<0.30	<0.30	<0.30	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.7	13	10	9.9	12	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.1	4.1	2.1	2.7	1.7	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	<2.0	25	4.5	4.6	3.0	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	20000	13000	13000	15000	12000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	5.1	180	6.6	5.8	3.2	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	3.6	2.6	2.9	2.6	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	75	160	90	110	110	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.14	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	6.0	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	12	4.0	4.9	3.2	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.7	4.9	2.7	3.1	3.7	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	5.3	12	6.3	7.4	12	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	14	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	0.46	0.40	0.54	0.38	0.45	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	26	29	38	40	22	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	11	1800	17	19	170	5.0	5225554	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		FJF322			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-TP8-BS2	RDL	QC Batch	MDL
Metals					
Acid Extractable Aluminum (Al)	mg/kg	7400	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	89	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.2	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.2	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	4.5	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	21000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	18	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	2.9	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	260	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.8	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	19	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	11	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	0.37	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	36	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	42	5.0	5225554	N/A
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					
N/A = Not Applicable					

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons						
1-Methylnaphthalene	mg/kg	0.040	<0.010	0.010	5225548	N/A
2-Methylnaphthalene	mg/kg	0.047	<0.010	0.010	5225548	N/A
Acenaphthene	mg/kg	0.065	<0.010	0.010	5225548	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Anthracene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	0.020	5220115	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Chrysene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Fluoranthene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Fluorene	mg/kg	0.034	<0.010	0.010	5225548	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Naphthalene	mg/kg	0.054	<0.010	0.010	5225548	N/A
Perylene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Phenanthrene	mg/kg	0.052	<0.010	0.010	5225548	N/A
Pyrene	mg/kg	<0.010	<0.010	0.010	5225548	N/A
Surrogate Recovery (%)						
D10-Anthracene	%	95	100		5225548	
D14-Terphenyl (FS)	%	107	107		5225548	
D8-Acenaphthylene	%	85	92		5225548	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Volatile Organics						
1,1,1-Trichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,1,2,2-Tetrachloroethane	ug/kg	<25	<25	25	5226049	0.00040
1,1,2-Trichloroethane	ug/kg	<25	<25	25	5226049	0.00040
1,1-Dichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,1-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00010
1,2-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00020
1,2-Dichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,2-Dichloropropane	ug/kg	<25	<25	25	5226049	0.00020
1,3-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00020
1,4-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00030
Benzene	ug/kg	<25	<25	25	5226049	0.00010
Bromodichloromethane	ug/kg	<25	<25	25	5226049	0.00020
Bromoform	ug/kg	<25	<25	25	5226049	0.00030
Bromomethane	ug/kg	<50	<50	50	5226049	0.00040
Carbon Tetrachloride	ug/kg	<25	<25	25	5226049	0.00010
Chlorobenzene	ug/kg	<25	<25	25	5226049	0.00010
Chloroethane	ug/kg	<200	<200	200	5226049	0.00030
Chloroform	ug/kg	<25	<25	25	5226049	0.00010
cis-1,2-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00010
cis-1,3-Dichloropropene	ug/kg	<25	<25	25	5226049	0.00020
Dibromochloromethane	ug/kg	<25	<25	25	5226049	0.00030
Ethylbenzene	ug/kg	<25	<25	25	5226049	0.00010
Ethylene Dibromide	ug/kg	<25	<25	25	5226049	0.00040
Methylene Chloride(Dichloromethane)	ug/kg	<25	<25	25	5226049	0.00020
o-Xylene	ug/kg	<25	<25	25	5226049	0.00010
p+m-Xylene	ug/kg	<25	<25	25	5226049	0.00010
Styrene	ug/kg	<25	<25	25	5226049	0.00020
Tetrachloroethylene	ug/kg	<25	<25	25	5226049	0.00030
Toluene	ug/kg	<25	<25	25	5226049	0.00010
Total Xylenes	ug/kg	<50	<50	50	5226049	N/A
trans-1,2-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00020
trans-1,3-Dichloropropene	ug/kg	<25	<25	25	5226049	0.00030
Trichloroethylene	ug/kg	<10	14	10	5226049	0.00020
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Trichlorofluoromethane (FREON 11)	ug/kg	<25	<25	25	5226049	0.00030
Vinyl Chloride	ug/kg	<20	<20	20	5226049	0.00020
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	99	99		5226049	
D10-o-Xylene	%	104 (1)	94 (1)		5226049	
D4-1,2-Dichloroethane	%	99	102		5226049	
D8-Toluene	%	97	97		5226049	
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						
(1) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.						

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJF317		FJF319		FJF320			
Sampling Date		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A			
	UNITS	CWT-TP1-BS1	QC Batch	CWT-TP3-BS2	QC Batch	CWT-TP4-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	N/A
Toluene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	5222350	<0.050	5222350	<0.050	0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5222350	<2.5	5222350	<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5225360	17	5222573	<10	10	5225360	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5225360	56	5222573	<10	10	5225360	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	5225360	240	5222573	<15	15	5225360	N/A
Modified TPH (Tier1)	mg/kg	<15	5220012	310	5220012	<15	15	5220012	N/A
Reached Baseline at C32	mg/kg	NA	5225360	No	5222573	NA	N/A	5225360	N/A
Hydrocarbon Resemblance	mg/kg	NA	5225360	COMMENT (1)	5222573	NA	N/A	5225360	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	94	5225360	97	5222573	92		5225360	
n-Dotriacontane - Extractable	%	103	5225360	91	5222573	102		5225360	
Isobutylbenzene - Volatile	%	94	5222350	103	5222350	88 (2)		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction. (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		FJF321		FJF322			
Sampling Date		2017/10/13		2017/10/13			
COC Number		N/A		N/A			
	UNITS	CWT-TP5-BS2	QC Batch	CWT-TP8-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons							
Benzene	mg/kg	<0.025	5222350	<0.025	0.025	5222350	N/A
Toluene	mg/kg	<0.025	5222350	<0.025	0.025	5222350	N/A
Ethylbenzene	mg/kg	<0.025	5222350	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	5222350	<0.050	0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5222350	<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5225359	<10	10	5225360	N/A
>C16-C21 Hydrocarbons	mg/kg	37	5225359	<10	10	5225360	N/A
>C21-<C32 Hydrocarbons	mg/kg	120	5225359	21	15	5225360	N/A
Modified TPH (Tier1)	mg/kg	160	5220012	21	15	5220012	N/A
Reached Baseline at C32	mg/kg	Yes	5225359	Yes	N/A	5225360	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5225359	COMMENT (2)	N/A	5225360	N/A
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	76	5225359	93		5225360	
n-Dotriacontane - Extractable	%	117	5225359	100 (3)		5225360	
Isobutylbenzene - Volatile	%	116	5222350	90		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction. (2) Possible lube oil fraction. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.							

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJF317	FJF319	FJF320	FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP1-BS1	CWT-TP3-BS2	CWT-TP4-BS1	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	24	0.27	<0.050	<0.050	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	24	0.27	<0.050	<0.050	0.050	5220167	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	93	92	95 (1)	91 (1)	92		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB: Unidentified (possibly halogenated) compounds detected.									

TEST SUMMARY

Maxxam ID: FJF317
Sample ID: CWT-TP1-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225360	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF317 Dup
Sample ID: CWT-TP1-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour

Maxxam ID: FJF318
Sample ID: CWT-TP2-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Asbestos (bulk) by PLM (Sub fr Bedford)		5224435	N/A	2017/10/30	Eric Dearman

Maxxam ID: FJF319
Sample ID: CWT-TP3-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5222573	2017/10/20	2017/10/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF320
Sample ID: CWT-TP4-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225360	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk

TEST SUMMARY

Maxxam ID: FJF320
Sample ID: CWT-TP4-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF320 Dup
Sample ID: CWT-TP4-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine

Maxxam ID: FJF321
Sample ID: CWT-TP5-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/25	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/25	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF322
Sample ID: CWT-TP8-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225360	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
-----------	-------

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

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222350	Isobutylbenzene - Volatile	2017/10/23	97 (1)	60 - 130	97	60 - 130	97	%		
5222573	Isobutylbenzene - Extractable	2017/10/20	84	30 - 130	97	30 - 130	90	%		
5222573	n-Dotriacontane - Extractable	2017/10/20	92	30 - 130	88	30 - 130	82	%		
5225359	Isobutylbenzene - Extractable	2017/10/24	75	30 - 130	80	30 - 130	68	%		
5225359	n-Dotriacontane - Extractable	2017/10/24	100	30 - 130	111	30 - 130	99	%		
5225360	Isobutylbenzene - Extractable	2017/10/24	95	30 - 130	93	30 - 130	92	%		
5225360	n-Dotriacontane - Extractable	2017/10/24	98 (2)	30 - 130	99	30 - 130	93	%		
5225548	D10-Anthracene	2017/10/25	86	50 - 130	96	50 - 130	101	%		
5225548	D14-Terphenyl (FS)	2017/10/25	97	50 - 130	104	50 - 130	114	%		
5225548	D8-Acenaphthylene	2017/10/25	86	50 - 130	93	50 - 130	108	%		
5225858	Decachlorobiphenyl	2017/10/24	87	30 - 130	93	30 - 130	92	%		
5226049	4-Bromofluorobenzene	2017/10/25	101	60 - 140	102	60 - 140	100	%		
5226049	D10-o-Xylene	2017/10/25	95 (3)	60 - 130	102	60 - 130	96	%		
5226049	D4-1,2-Dichloroethane	2017/10/25	101	60 - 140	98	60 - 140	97	%		
5226049	D8-Toluene	2017/10/25	97	60 - 140	98	60 - 140	97	%		
5222094	Moisture	2017/10/20							2.1	25
5222350	Benzene	2017/10/23	98	60 - 130	89	60 - 140	<0.025	mg/kg	NC	50
5222350	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50
5222350	Ethylbenzene	2017/10/23	111	60 - 130	97	60 - 140	<0.025	mg/kg	NC	50
5222350	Toluene	2017/10/23	108	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50
5222350	Total Xylenes	2017/10/23	124	60 - 130	96	60 - 140	<0.050	mg/kg	NC	50
5222573	>C10-C16 Hydrocarbons	2017/10/20	NC	30 - 130	85	30 - 130	<10	mg/kg	26	50
5222573	>C16-C21 Hydrocarbons	2017/10/20	NC	30 - 130	85	30 - 130	<10	mg/kg	27	50
5222573	>C21-<C32 Hydrocarbons	2017/10/20	NC	30 - 130	99	30 - 130	<15	mg/kg	24	50
5225359	>C10-C16 Hydrocarbons	2017/10/24	86	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C16-C21 Hydrocarbons	2017/10/24	87	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C21-<C32 Hydrocarbons	2017/10/24	103	30 - 130	107	30 - 130	<15	mg/kg	NC	50
5225360	>C10-C16 Hydrocarbons	2017/10/24	88	30 - 130	90	30 - 130	<10	mg/kg	NC	50
5225360	>C16-C21 Hydrocarbons	2017/10/24	85	30 - 130	88	30 - 130	<10	mg/kg	NC	50
5225360	>C21-<C32 Hydrocarbons	2017/10/24	94	30 - 130	104	30 - 130	<15	mg/kg	NC	50
5225548	1-Methylnaphthalene	2017/10/25	79	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5225548	2-Methylnaphthalene	2017/10/25	83	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5225548	Acenaphthene	2017/10/25	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5225548	Acenaphthylene	2017/10/25	84	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50
5225548	Anthracene	2017/10/25	88	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(a)anthracene	2017/10/25	89	30 - 130	97	30 - 130	<0.010	mg/kg	27	50
5225548	Benzo(a)pyrene	2017/10/25	96	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(b)fluoranthene	2017/10/25	97	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(g,h,i)perylene	2017/10/25	100	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(j)fluoranthene	2017/10/25	99	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(k)fluoranthene	2017/10/25	96	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50
5225548	Chrysene	2017/10/25	83	30 - 130	93	30 - 130	<0.010	mg/kg	22	50
5225548	Dibenz(a,h)anthracene	2017/10/25	97	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5225548	Fluoranthene	2017/10/25	91	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5225548	Fluorene	2017/10/25	87	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5225548	Indeno(1,2,3-cd)pyrene	2017/10/25	98	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50
5225548	Naphthalene	2017/10/25	78	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5225548	Perylene	2017/10/25	95	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50
5225548	Phenanthrene	2017/10/25	115	30 - 130	123	30 - 130	<0.010	mg/kg	NC	50
5225548	Pyrene	2017/10/25	86	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5225554	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	1.6	35
5225554	Acid Extractable Antimony (Sb)	2017/10/24	102	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Arsenic (As)	2017/10/24	97	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Barium (Ba)	2017/10/24	115	75 - 125	105	75 - 125	<5.0	mg/kg	5.5	35
5225554	Acid Extractable Beryllium (Be)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Bismuth (Bi)	2017/10/24	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Boron (B)	2017/10/24	99	75 - 125	105	75 - 125	<50	mg/kg	NC	35
5225554	Acid Extractable Cadmium (Cd)	2017/10/24	100	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35
5225554	Acid Extractable Chromium (Cr)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	5.1	35
5225554	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	100	75 - 125	<1.0	mg/kg	26	35
5225554	Acid Extractable Copper (Cu)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	1.8	35
5225554	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	12	35

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5225554	Acid Extractable Lead (Pb)	2017/10/24	101	75 - 125	102	75 - 125	<0.50	mg/kg	14	35
5225554	Acid Extractable Lithium (Li)	2017/10/24	107	75 - 125	102	75 - 125	<2.0	mg/kg	12	35
5225554	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	103	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Molybdenum (Mo)	2017/10/24	104	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Nickel (Ni)	2017/10/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Rubidium (Rb)	2017/10/24	102	75 - 125	103	75 - 125	<2.0	mg/kg	14	35
5225554	Acid Extractable Selenium (Se)	2017/10/24	97	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35
5225554	Acid Extractable Silver (Ag)	2017/10/24	100	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35
5225554	Acid Extractable Strontium (Sr)	2017/10/24	110	75 - 125	104	75 - 125	<5.0	mg/kg	16	35
5225554	Acid Extractable Thallium (Tl)	2017/10/24	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Tin (Sn)	2017/10/24	101	75 - 125	111	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Uranium (U)	2017/10/24	101	75 - 125	100	75 - 125	<0.10	mg/kg	33	35
5225554	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	101	75 - 125	<2.0	mg/kg	6.1	35
5225554	Acid Extractable Zinc (Zn)	2017/10/24	105	75 - 125	101	75 - 125	<5.0	mg/kg	11	35
5225858	Aroclor 1016	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1221	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1232	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1242	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1248	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1254	2017/10/24	84	30 - 130	98	30 - 130	<0.050	ug/g	NC	50
5225858	Aroclor 1260	2017/10/24					<0.050	ug/g	NC	50
5226049	1,1,1-Trichloroethane	2017/10/25	108	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	1,1,2,2-Tetrachloroethane	2017/10/25	105	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	1,1,2-Trichloroethane	2017/10/25	105	60 - 140	106	60 - 130	<25	ug/kg	NC	50
5226049	1,1-Dichloroethane	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	1,1-Dichloroethylene	2017/10/25	103	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	1,2-Dichlorobenzene	2017/10/25	93	60 - 140	97	60 - 130	<25	ug/kg	NC	50
5226049	1,2-Dichloroethane	2017/10/25	101	60 - 140	103	60 - 130	<25	ug/kg	NC	50
5226049	1,2-Dichloropropane	2017/10/25	102	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	1,3-Dichlorobenzene	2017/10/25	94	60 - 140	100	60 - 130	<25	ug/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5226049	1,4-Dichlorobenzene	2017/10/25	92	60 - 140	98	60 - 130	<25	ug/kg	NC	50
5226049	Benzene	2017/10/25	102	60 - 140	107	60 - 130	<25	ug/kg	NC	50
5226049	Bromodichloromethane	2017/10/25	106	60 - 140	108	60 - 130	<25	ug/kg	NC	50
5226049	Bromoform	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50
5226049	Bromomethane	2017/10/25	92	60 - 140	104	60 - 140	<50	ug/kg	NC	50
5226049	Carbon Tetrachloride	2017/10/25	107	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	Chlorobenzene	2017/10/25	99	60 - 140	104	60 - 130	<25	ug/kg	NC	50
5226049	Chloroethane	2017/10/25	92	60 - 140	100	60 - 140	<200	ug/kg	NC	50
5226049	Chloroform	2017/10/25	99	60 - 140	101	60 - 130	<25	ug/kg	NC	50
5226049	cis-1,2-Dichloroethylene	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	cis-1,3-Dichloropropene	2017/10/25	100	60 - 140	108	60 - 130	<25	ug/kg	NC	50
5226049	Dibromochloromethane	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50
5226049	Ethylbenzene	2017/10/25	97	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	Ethylene Dibromide	2017/10/25	103	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	Methylene Chloride(Dichloromethane)	2017/10/25	111	60 - 140	115	60 - 130	<25	ug/kg	NC	50
5226049	o-Xylene	2017/10/25	99	60 - 140	108	60 - 130	<25	ug/kg	NC	50
5226049	p+m-Xylene	2017/10/25	97	60 - 140	106	60 - 130	<25	ug/kg	NC	50
5226049	Styrene	2017/10/25	84	60 - 140	104	60 - 130	<25	ug/kg	NC	50
5226049	Tetrachloroethylene	2017/10/25	109	60 - 140	117	60 - 130	<25	ug/kg	NC	50
5226049	Toluene	2017/10/25	100	60 - 140	107	60 - 130	<25	ug/kg	NC	50
5226049	Total Xylenes	2017/10/25					<50	ug/kg	NC	50
5226049	trans-1,2-Dichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<25	ug/kg	NC	50
5226049	trans-1,3-Dichloropropene	2017/10/25	88	60 - 140	94	60 - 130	<25	ug/kg	NC	50
5226049	Trichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<10	ug/kg	NC	50
5226049	Trichlorofluoromethane (FREON 11)	2017/10/25	90	60 - 140	105	60 - 140	<25	ug/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5226049	Vinyl Chloride	2017/10/25	95	60 - 140	109	60 - 140	<20	ug/kg	NC	50

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

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

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

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

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

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

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

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

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

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



Phil Deveau, 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.



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551711796
Customer ID: 55PSSC69
Customer PO: JOB#B7N2164
Project ID:

Attn: Heather Macumber
Maxxam Analytics, Inc.
200 Bluewater Road
Suite 105
Bedford, NS B4B 1G9
Proj: JOB#B7N2164

Phone: (902) 832-4852
Fax:
Collected: 10/13/2017
Received: 10/24/2017
Analyzed: 10/30/2017

Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: FJF318-02R/CWT-TP2-BS2

Lab Sample ID: 551711796-0001

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/30/2017	Brown	5%	95%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Analyst(s): _____

Natalie D'Amico PLM (1)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 10/30/2017 13:37:17

Your Project #: 121414915.300.002
 Site Location: FORMER MILLITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/17
 Report #: R4862879
 Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B7N2164

Received: 2017/10/19, 10:14

Sample Matrix: Soil
 # Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/10/25	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/10/28	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/11/17	N/A	Auto Calc.
TEH in Soil (AA PIRI)	1	2017/11/08	2017/11/11	ATL SOP 00116	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (2)	1	2017/10/20	2017/10/23	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (2)	4	2017/10/23	2017/10/24	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	5	2017/10/23	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	1	2017/11/03	2017/11/04	ATL SOP 00058	EPA 6020A R1 m
Moisture	5	N/A	2017/10/20	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	1	N/A	2017/10/31	ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (2)	1	2017/10/23	2017/10/25	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (2)	1	2017/10/23	2017/10/27	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (2)	1	2017/10/31	2017/11/16	ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (2)	5	2017/10/23	2017/10/24	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (2)	1	2017/10/31	2017/11/08	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	5	N/A	2017/10/24	N/A	Auto Calc.
PCB Aroclor sum (soil)	1	N/A	2017/11/08	N/A	Auto Calc.
Asbestos (bulk) by PLM (Sub fr Bedford) (1)	1	N/A	2017/10/30		
ModTPH (T1) Calc. for Soil	5	N/A	2017/10/24	N/A	Atl. RBCA v3.1 m
ModTPH (T2) Calc. for Soil	1	N/A	2017/11/13	N/A	Atl. RBCA v3 m
VOCs in Soil - Field Preserved (3)	2	N/A	2017/10/25	ATL SOP 00133	EPA 8260C R3 m
VPH in Soil (PIRI2) - Field Preserved (3)	1	N/A	2017/11/02	ATL SOP 00120	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (3)	5	N/A	2017/10/23	ATL SOP 00119	Atl. RBCA v3.1 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

Your Project #: 121414915.300.002
Site Location: FORMER MILLITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/17
Report #: R4862879
Version: 2 - Revision

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B7N2164

Received: 2017/10/19, 10:14

indicated otherwise, associated sample data are not blank corrected.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

(1) This test was performed by Sub Bedford to EMSL

(2) Soils are reported on a dry weight basis unless otherwise specified.

(3) 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.

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

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

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJF317	FJF317		FJF318		FJF319			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-TP1-BS1	CWT-TP1-BS1 Lab-Dup	QC Batch	CWT-TP2-BS2	QC Batch	CWT-TP3-BS2	RDL	QC Batch	MDL
Inorganics										
Moisture	%	34	33	5222094	20	5240040	31	1.0	5222094	0.20
Subcontracted Analysis										
Subcontract Parameter	N/A				ATTACHED	5224435		N/A		N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										

Maxxam ID		FJF320	FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A			
	UNITS	CWT-TP4-BS1	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Inorganics							
Moisture	%	27	32	18	1.0	5222094	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch							

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJF317		FJF318		FJF319	FJF320			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-TP1-BS1	QC Batch	CWT-TP2-BS2	QC Batch	CWT-TP3-BS2	CWT-TP4-BS1	RDL	QC Batch	MDL
Metals										
Acid Extractable Aluminum (Al)	mg/kg	7900	5225554	6500	5246529	6200	7400	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5225554	2.7	5246529	3.2	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5225554	<2.0	5246529	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	15	5225554	37	5246529	39	14	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5225554	<2.0	5246529	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5225554	<2.0	5246529	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	5225554	<50	5246529	<50	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5225554	0.65	5246529	2.0	<0.30	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.7	5225554	13	5246529	13	10	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.1	5225554	3.2	5246529	4.1	2.1	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	<2.0	5225554	47	5246529	25	4.5	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	20000	5225554	18000	5246529	13000	13000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	5.1	5225554	65	5246529	180	6.6	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	5225554	3.4	5246529	3.6	2.6	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	75	5225554	230	5246529	160	90	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5225554	0.13	5246529	0.14	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5225554	<2.0	5246529	6.0	<2.0	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	5225554	6.5	5246529	12	4.0	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.7	5225554	4.6	5246529	4.9	2.7	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5225554	<1.0	5246529	<1.0	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5225554	<0.50	5246529	<0.50	<0.50	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	5.3	5225554	10	5246529	12	6.3	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5225554	<0.10	5246529	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5225554	6.1	5246529	14	<2.0	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	0.46	5225554	0.42	5246529	0.40	0.54	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	26	5225554	29	5246529	29	38	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	11	5225554	170	5246529	1800	17	5.0	5225554	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJF320	FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A			
	UNITS	CWT-TP4-BS1 Lab-Dup	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Metals							
Acid Extractable Aluminum (Al)	mg/kg	7500	5800	7400	10	5225554	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Barium (Ba)	mg/kg	15	58	89	5.0	5225554	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	50	5225554	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	0.30	5225554	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.9	12	9.2	2.0	5225554	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.7	1.7	2.2	1.0	5225554	N/A
Acid Extractable Copper (Cu)	mg/kg	4.6	3.0	4.5	2.0	5225554	N/A
Acid Extractable Iron (Fe)	mg/kg	15000	12000	21000	50	5225554	N/A
Acid Extractable Lead (Pb)	mg/kg	5.8	3.2	18	0.50	5225554	N/A
Acid Extractable Lithium (Li)	mg/kg	2.9	2.6	2.9	2.0	5225554	N/A
Acid Extractable Manganese (Mn)	mg/kg	110	110	260	2.0	5225554	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.9	3.2	2.8	2.0	5225554	N/A
Acid Extractable Rubidium (Rb)	mg/kg	3.1	3.7	19	2.0	5225554	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	1.0	5225554	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	0.50	5225554	N/A
Acid Extractable Strontium (Sr)	mg/kg	7.4	12	11	5.0	5225554	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	0.10	5225554	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	2.0	5225554	N/A
Acid Extractable Uranium (U)	mg/kg	0.38	0.45	0.37	0.10	5225554	N/A
Acid Extractable Vanadium (V)	mg/kg	40	22	36	2.0	5225554	N/A
Acid Extractable Zinc (Zn)	mg/kg	19	170	42	5.0	5225554	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable							

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJF318		FJF321	FJF322			
Sampling Date		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A	N/A			
	UNITS	CWT-TP2-BS2	QC Batch	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons								
1-Methylnaphthalene	mg/kg	<0.010	5252002	0.040	<0.010	0.010	5225548	N/A
2-Methylnaphthalene	mg/kg	<0.010	5252002	0.047	<0.010	0.010	5225548	N/A
Acenaphthene	mg/kg	<0.010	5252002	0.065	<0.010	0.010	5225548	N/A
Acenaphthylene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Anthracene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Benzo(a)anthracene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Benzo(a)pyrene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	5239986	<0.020	<0.020	0.020	5220115	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Chrysene	mg/kg	0.013	5252002	<0.010	<0.010	0.010	5225548	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Fluoranthene	mg/kg	0.015	5252002	<0.010	<0.010	0.010	5225548	N/A
Fluorene	mg/kg	<0.010	5252002	0.034	<0.010	0.010	5225548	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Naphthalene	mg/kg	0.015	5252002	0.054	<0.010	0.010	5225548	N/A
Perylene	mg/kg	<0.010	5252002	<0.010	<0.010	0.010	5225548	N/A
Phenanthrene	mg/kg	0.027	5252002	0.052	<0.010	0.010	5225548	N/A
Pyrene	mg/kg	0.017	5252002	<0.010	<0.010	0.010	5225548	N/A
Surrogate Recovery (%)								
D10-Anthracene	%	92	5252002	95	100		5225548	
D14-Terphenyl (FS)	%	94 (1)	5252002	107	107		5225548	
D8-Acenaphthylene	%	91	5252002	85	92		5225548	
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
N/A = Not Applicable								
(1) PAH sample analysed past recommended hold time as per client request.								

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Volatile Organics						
1,1,1-Trichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,1,2,2-Tetrachloroethane	ug/kg	<25	<25	25	5226049	0.00040
1,1,2-Trichloroethane	ug/kg	<25	<25	25	5226049	0.00040
1,1-Dichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,1-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00010
1,2-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00020
1,2-Dichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,2-Dichloropropane	ug/kg	<25	<25	25	5226049	0.00020
1,3-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00020
1,4-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00030
Benzene	ug/kg	<25	<25	25	5226049	0.00010
Bromodichloromethane	ug/kg	<25	<25	25	5226049	0.00020
Bromoform	ug/kg	<25	<25	25	5226049	0.00030
Bromomethane	ug/kg	<50	<50	50	5226049	0.00040
Carbon Tetrachloride	ug/kg	<25	<25	25	5226049	0.00010
Chlorobenzene	ug/kg	<25	<25	25	5226049	0.00010
Chloroethane	ug/kg	<200	<200	200	5226049	0.00030
Chloroform	ug/kg	<25	<25	25	5226049	0.00010
cis-1,2-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00010
cis-1,3-Dichloropropene	ug/kg	<25	<25	25	5226049	0.00020
Dibromochloromethane	ug/kg	<25	<25	25	5226049	0.00030
Ethylbenzene	ug/kg	<25	<25	25	5226049	0.00010
Ethylene Dibromide	ug/kg	<25	<25	25	5226049	0.00040
Methylene Chloride(Dichloromethane)	ug/kg	<25	<25	25	5226049	0.00020
o-Xylene	ug/kg	<25	<25	25	5226049	0.00010
p+m-Xylene	ug/kg	<25	<25	25	5226049	0.00010
Styrene	ug/kg	<25	<25	25	5226049	0.00020
Tetrachloroethylene	ug/kg	<25	<25	25	5226049	0.00030
Toluene	ug/kg	<25	<25	25	5226049	0.00010
Total Xylenes	ug/kg	<50	<50	50	5226049	N/A
trans-1,2-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00020
trans-1,3-Dichloropropene	ug/kg	<25	<25	25	5226049	0.00030
Trichloroethylene	ug/kg	<10	14	10	5226049	0.00020
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
Trichlorofluoromethane (FREON 11)	ug/kg	<25	<25	25	5226049	0.00030
Vinyl Chloride	ug/kg	<20	<20	20	5226049	0.00020
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	99	99		5226049	
D10-o-Xylene	%	104 (1)	94 (1)		5226049	
D4-1,2-Dichloroethane	%	99	102		5226049	
D8-Toluene	%	97	97		5226049	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.						

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJF317			FJF318			FJF319			
Sampling Date		2017/10/13			2017/10/13			2017/10/13			
COC Number		N/A			N/A			N/A			
	UNITS	CWT-TP1-BS1	QC Batch	MDL	CWT-TP2-BS2	QC Batch	MDL	CWT-TP3-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5222350	0.010	<0.025	5244688	0.010	<0.025	0.025	5222350	0.010
Toluene	mg/kg	<0.025	5222350	0.010	<0.025	5244688	0.010	<0.025	0.025	5222350	0.010
Ethylbenzene	mg/kg	<0.025	5222350	0.025	<0.025	5244688	0.010	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	5222350	N/A	<0.050	5244688	0.010	<0.050	0.050	5222350	N/A
Aliphatic >C6-C8	mg/kg				<1.0	5244688	0.020		1.0		
Aliphatic >C8-C10	mg/kg				<1.0	5244688	0.080		1.0		
C6 - C10 (less BTEX)	mg/kg	<2.5	5222350	N/A				<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5225360	N/A				17	10	5222573	N/A
>C8-C10 Aromatics (-EX)	mg/kg				<0.50	5244688	0.020		0.50		
>C16-C21 Hydrocarbons	mg/kg	<10	5225360	N/A				56	10	5222573	N/A
Aliphatic >C10-C12	mg/kg				<8.0	5254196	1.6		8.0		
Aliphatic >C12-C16	mg/kg				<15	5254196	3.0		15		
>C21-<C32 Hydrocarbons	mg/kg	<15	5225360	N/A				240	15	5222573	N/A
Aliphatic >C16-C21	mg/kg				<15	5254196	3.0		15		
Aliphatic >C21-<C32	mg/kg				27	5254196	3.0		15		
Modified TPH (Tier1)	mg/kg	<15	5220012	N/A				310	15	5220012	N/A
Aromatic >C10-C12	mg/kg				<20 (1)	5254196	0.80		20		
Reached Baseline at C32	mg/kg	NA	5225360	N/A	Yes	5254196	N/A	No	N/A	5222573	N/A
Aromatic >C12-C16	mg/kg				<15	5254196	3.0		15		
Hydrocarbon Resemblance	mg/kg	NA	5225360	N/A	COMMENT (2)	5254196	N/A	COMMENT (3)	N/A	5222573	N/A
Aromatic >C16-C21	mg/kg				<15	5254196	3.0		15		
Aromatic >C21-<C32	mg/kg				31	5254196	3.0		15		
Modified TPH (Tier 2)	mg/kg				58	5240028	3.0		20		
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%				107	5254196					
n-Dotriacontane - Extractable	%				96	5254196					
Isobutylbenzene - Extractable	%	94	5225360					97		5222573	
n-Dotriacontane - Extractable	%	103	5225360					91		5222573	
Isobutylbenzene - Volatile	%				118	5244688					
Isobutylbenzene - Volatile	%	94	5222350					103		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated TEH RDL(s) due to detected levels in the method blank. (2) One product in fuel / lube range. (3) Lube oil fraction.											

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJF320		FJF321		FJF322			
Sampling Date		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A			
	UNITS	CWT-TP4-BS1	QC Batch	CWT-TP5-BS2	QC Batch	CWT-TP8-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	0.010
Toluene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	0.010
Ethylbenzene	mg/kg	<0.025	5222350	<0.025	5222350	<0.025	0.025	5222350	0.025
Total Xylenes	mg/kg	<0.050	5222350	<0.050	5222350	<0.050	0.050	5222350	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5222350	<2.5	5222350	<2.5	2.5	5222350	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5225360	<10	5225359	<10	10	5225360	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5225360	37	5225359	<10	10	5225360	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	5225360	120	5225359	21	15	5225360	N/A
Modified TPH (Tier1)	mg/kg	<15	5220012	160	5220012	21	15	5220012	N/A
Reached Baseline at C32	mg/kg	NA	5225360	Yes	5225359	Yes	N/A	5225360	N/A
Hydrocarbon Resemblance	mg/kg	NA	5225360	COMMENT (1)	5225359	COMMENT (2)	N/A	5225360	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	92	5225360	76	5225359	93		5225360	
n-Dotriacontane - Extractable	%	102	5225360	117	5225359	100 (3)		5225360	
Isobutylbenzene - Volatile	%	88 (4)	5222350	116	5222350	90		5222350	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction. (2) Possible lube oil fraction. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (4) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.									

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJF317		FJF318		FJF319	FJF320			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-TP1-BS1	QC Batch	CWT-TP2-BS2	QC Batch	CWT-TP3-BS2	CWT-TP4-BS1	RDL	QC Batch	MDL
PCBs										
Aroclor 1016	ug/g	<0.050	5225858	<0.050	5246951	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	5225858	<0.050	5246951	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	5225858	<0.050	5246951	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	5225858	<0.050	5246951	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	5225858	<0.050	5246951	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	5225858	1.0	5246951	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	5225858	1.2	5246951	24	0.27	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	5220167	2.2	5240024	24	0.27	0.050	5220167	N/A
Surrogate Recovery (%)										
Decachlorobiphenyl	%	93	5225858	90 (1)	5246951	92	95 (2)		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB sample analysed past recommended hold time as per client request. (2) PCB:Unidentified (possibly halogenated) compounds detected.										

Maxxam ID		FJF321	FJF322			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-TP5-BS2	CWT-TP8-BS2	RDL	QC Batch	MDL
PCBs						
Aroclor 1016	ug/g	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1221	ug/g	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1232	ug/g	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1248	ug/g	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1242	ug/g	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1254	ug/g	<0.050	<0.050	0.050	5225858	N/A
Aroclor 1260	ug/g	<0.050	<0.050	0.050	5225858	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	0.050	5220167	N/A
Surrogate Recovery (%)						
Decachlorobiphenyl	%	91 (1)	92		5225858	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB:Unidentified (possibly halogenated) compounds detected.						

TEST SUMMARY

Maxxam ID: FJF317
Sample ID: CWT-TP1-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225360	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF317 Dup
Sample ID: CWT-TP1-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour

Maxxam ID: FJF318
Sample ID: CWT-TP2-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5239986	N/A	2017/11/17	Automated Statchk
TEH in Soil (AA PIRI)	GC/FID	5254196	2017/11/08	2017/11/11	Marsha (Skinner) Harnum
Metals Solids Acid Extr. ICPMS	ICP/MS	5246529	2017/11/03	2017/11/04	Bryon Angevine
Moisture	BAL	5240040	N/A	2017/10/31	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5252002	2017/10/31	2017/11/16	Robin Smith-Armstrong
PCBs in soil by GC/ECD	GC/ECD	5246951	2017/10/31	2017/11/08	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5240024	N/A	2017/11/08	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5224435	N/A	2017/10/30	Eric Dearman
ModTPH (T2) Calc. for Soil	CALC	5240028	N/A	2017/11/13	Automated Statchk
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5244688	N/A	2017/11/02	Thea Holland

Maxxam ID: FJF319
Sample ID: CWT-TP3-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5222573	2017/10/20	2017/10/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

TEST SUMMARY

Maxxam ID: FJF320
Sample ID: CWT-TP4-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225360	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF320 Dup
Sample ID: CWT-TP4-BS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine

Maxxam ID: FJF321
Sample ID: CWT-TP5-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/25	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225359	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/25	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

Maxxam ID: FJF322
Sample ID: CWT-TP8-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5220115	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225360	2017/10/23	2017/10/24	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222094	N/A	2017/10/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5220167	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5220012	N/A	2017/10/24	Automated Statchk

TEST SUMMARY

Maxxam ID: FJF322
Sample ID: CWT-TP8-BS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5222350	N/A	2017/10/23	Thea Holland

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

Revised Report: PAH, PCB, TPH Fraction reported on sample CWT-TP2-BS2. Analysis completed past the recommended hold time.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5222350	Isobutylbenzene - Volatile	2017/10/23	97 (1)	60 - 130	97	60 - 130	97	%		
5222573	Isobutylbenzene - Extractable	2017/10/20	84	30 - 130	97	30 - 130	90	%		
5222573	n-Dotriacontane - Extractable	2017/10/20	92	30 - 130	88	30 - 130	82	%		
5225359	Isobutylbenzene - Extractable	2017/10/24	75	30 - 130	80	30 - 130	68	%		
5225359	n-Dotriacontane - Extractable	2017/10/24	100	30 - 130	111	30 - 130	99	%		
5225360	Isobutylbenzene - Extractable	2017/10/24	95	30 - 130	93	30 - 130	92	%		
5225360	n-Dotriacontane - Extractable	2017/10/24	98 (2)	30 - 130	99	30 - 130	93	%		
5225548	D10-Anthracene	2017/10/25	86	50 - 130	96	50 - 130	101	%		
5225548	D14-Terphenyl (FS)	2017/10/25	97	50 - 130	104	50 - 130	114	%		
5225548	D8-Acenaphthylene	2017/10/25	86	50 - 130	93	50 - 130	108	%		
5225858	Decachlorobiphenyl	2017/10/24	87	30 - 130	93	30 - 130	92	%		
5226049	4-Bromofluorobenzene	2017/10/25	101	60 - 140	102	60 - 140	100	%		
5226049	D10-o-Xylene	2017/10/25	95 (3)	60 - 130	102	60 - 130	96	%		
5226049	D4-1,2-Dichloroethane	2017/10/25	101	60 - 140	98	60 - 140	97	%		
5226049	D8-Toluene	2017/10/25	97	60 - 140	98	60 - 140	97	%		
5244688	Isobutylbenzene - Volatile	2017/11/02			102	60 - 140	100	%		
5246951	Decachlorobiphenyl	2017/11/08	91	30 - 130	91	30 - 130	89	%		
5252002	D10-Anthracene	2017/11/10	90	50 - 130	94	50 - 130	102	%		
5252002	D14-Terphenyl (FS)	2017/11/10	80	50 - 130	90	50 - 130	100	%		
5252002	D8-Acenaphthylene	2017/11/10	96	50 - 130	100	50 - 130	99	%		
5254196	Isobutylbenzene - Extractable	2017/11/11					102	%		
5254196	n-Dotriacontane - Extractable	2017/11/11					99	%		
5222094	Moisture	2017/10/20							2.1	25
5222350	Benzene	2017/10/23	98	60 - 130	89	60 - 140	<0.025	mg/kg	NC	50
5222350	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50
5222350	Ethylbenzene	2017/10/23	111	60 - 130	97	60 - 140	<0.025	mg/kg	NC	50
5222350	Toluene	2017/10/23	108	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50
5222350	Total Xylenes	2017/10/23	124	60 - 130	96	60 - 140	<0.050	mg/kg	NC	50
5222573	>C10-C16 Hydrocarbons	2017/10/20	NC	30 - 130	85	30 - 130	<10	mg/kg	26	50
5222573	>C16-C21 Hydrocarbons	2017/10/20	NC	30 - 130	85	30 - 130	<10	mg/kg	27	50
5222573	>C21-<C32 Hydrocarbons	2017/10/20	NC	30 - 130	99	30 - 130	<15	mg/kg	24	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5225359	>C10-C16 Hydrocarbons	2017/10/24	86	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C16-C21 Hydrocarbons	2017/10/24	87	30 - 130	84	30 - 130	<10	mg/kg	NC	50
5225359	>C21-<C32 Hydrocarbons	2017/10/24	103	30 - 130	107	30 - 130	<15	mg/kg	NC	50
5225360	>C10-C16 Hydrocarbons	2017/10/24	88	30 - 130	90	30 - 130	<10	mg/kg	NC	50
5225360	>C16-C21 Hydrocarbons	2017/10/24	85	30 - 130	88	30 - 130	<10	mg/kg	NC	50
5225360	>C21-<C32 Hydrocarbons	2017/10/24	94	30 - 130	104	30 - 130	<15	mg/kg	NC	50
5225548	1-Methylnaphthalene	2017/10/25	79	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50
5225548	2-Methylnaphthalene	2017/10/25	83	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5225548	Acenaphthene	2017/10/25	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5225548	Acenaphthylene	2017/10/25	84	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50
5225548	Anthracene	2017/10/25	88	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(a)anthracene	2017/10/25	89	30 - 130	97	30 - 130	<0.010	mg/kg	27	50
5225548	Benzo(a)pyrene	2017/10/25	96	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(b)fluoranthene	2017/10/25	97	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(g,h,i)perylene	2017/10/25	100	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(j)fluoranthene	2017/10/25	99	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5225548	Benzo(k)fluoranthene	2017/10/25	96	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50
5225548	Chrysene	2017/10/25	83	30 - 130	93	30 - 130	<0.010	mg/kg	22	50
5225548	Dibenz(a,h)anthracene	2017/10/25	97	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50
5225548	Fluoranthene	2017/10/25	91	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50
5225548	Fluorene	2017/10/25	87	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5225548	Indeno(1,2,3-cd)pyrene	2017/10/25	98	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50
5225548	Naphthalene	2017/10/25	78	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50
5225548	Perylene	2017/10/25	95	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50
5225548	Phenanthrene	2017/10/25	115	30 - 130	123	30 - 130	<0.010	mg/kg	NC	50
5225548	Pyrene	2017/10/25	86	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50
5225554	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	1.6	35
5225554	Acid Extractable Antimony (Sb)	2017/10/24	102	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Arsenic (As)	2017/10/24	97	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Barium (Ba)	2017/10/24	115	75 - 125	105	75 - 125	<5.0	mg/kg	5.5	35
5225554	Acid Extractable Beryllium (Be)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5225554	Acid Extractable Bismuth (Bi)	2017/10/24	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Boron (B)	2017/10/24	99	75 - 125	105	75 - 125	<50	mg/kg	NC	35
5225554	Acid Extractable Cadmium (Cd)	2017/10/24	100	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35
5225554	Acid Extractable Chromium (Cr)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	5.1	35
5225554	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	100	75 - 125	<1.0	mg/kg	26	35
5225554	Acid Extractable Copper (Cu)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	1.8	35
5225554	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	12	35
5225554	Acid Extractable Lead (Pb)	2017/10/24	101	75 - 125	102	75 - 125	<0.50	mg/kg	14	35
5225554	Acid Extractable Lithium (Li)	2017/10/24	107	75 - 125	102	75 - 125	<2.0	mg/kg	12	35
5225554	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	103	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Molybdenum (Mo)	2017/10/24	104	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Nickel (Ni)	2017/10/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	21	35
5225554	Acid Extractable Rubidium (Rb)	2017/10/24	102	75 - 125	103	75 - 125	<2.0	mg/kg	14	35
5225554	Acid Extractable Selenium (Se)	2017/10/24	97	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35
5225554	Acid Extractable Silver (Ag)	2017/10/24	100	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35
5225554	Acid Extractable Strontium (Sr)	2017/10/24	110	75 - 125	104	75 - 125	<5.0	mg/kg	16	35
5225554	Acid Extractable Thallium (Tl)	2017/10/24	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35
5225554	Acid Extractable Tin (Sn)	2017/10/24	101	75 - 125	111	75 - 125	<2.0	mg/kg	NC	35
5225554	Acid Extractable Uranium (U)	2017/10/24	101	75 - 125	100	75 - 125	<0.10	mg/kg	33	35
5225554	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	101	75 - 125	<2.0	mg/kg	6.1	35
5225554	Acid Extractable Zinc (Zn)	2017/10/24	105	75 - 125	101	75 - 125	<5.0	mg/kg	11	35
5225858	Aroclor 1016	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1221	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1232	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1242	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1248	2017/10/24					<0.050	ug/g	NC	50
5225858	Aroclor 1254	2017/10/24	84	30 - 130	98	30 - 130	<0.050	ug/g	NC	50
5225858	Aroclor 1260	2017/10/24					<0.050	ug/g	NC	50
5226049	1,1,1-Trichloroethane	2017/10/25	108	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	1,1,2,2-Tetrachloroethane	2017/10/25	105	60 - 140	105	60 - 130	<25	ug/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5226049	1,1,2-Trichloroethane	2017/10/25	105	60 - 140	106	60 - 130	<25	ug/kg	NC	50
5226049	1,1-Dichloroethane	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	1,1-Dichloroethylene	2017/10/25	103	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	1,2-Dichlorobenzene	2017/10/25	93	60 - 140	97	60 - 130	<25	ug/kg	NC	50
5226049	1,2-Dichloroethane	2017/10/25	101	60 - 140	103	60 - 130	<25	ug/kg	NC	50
5226049	1,2-Dichloropropane	2017/10/25	102	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	1,3-Dichlorobenzene	2017/10/25	94	60 - 140	100	60 - 130	<25	ug/kg	NC	50
5226049	1,4-Dichlorobenzene	2017/10/25	92	60 - 140	98	60 - 130	<25	ug/kg	NC	50
5226049	Benzene	2017/10/25	102	60 - 140	107	60 - 130	<25	ug/kg	NC	50
5226049	Bromodichloromethane	2017/10/25	106	60 - 140	108	60 - 130	<25	ug/kg	NC	50
5226049	Bromoform	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50
5226049	Bromomethane	2017/10/25	92	60 - 140	104	60 - 140	<50	ug/kg	NC	50
5226049	Carbon Tetrachloride	2017/10/25	107	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	Chlorobenzene	2017/10/25	99	60 - 140	104	60 - 130	<25	ug/kg	NC	50
5226049	Chloroethane	2017/10/25	92	60 - 140	100	60 - 140	<200	ug/kg	NC	50
5226049	Chloroform	2017/10/25	99	60 - 140	101	60 - 130	<25	ug/kg	NC	50
5226049	cis-1,2-Dichloroethylene	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50
5226049	cis-1,3-Dichloropropene	2017/10/25	100	60 - 140	108	60 - 130	<25	ug/kg	NC	50
5226049	Dibromochloromethane	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50
5226049	Ethylbenzene	2017/10/25	97	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	Ethylene Dibromide	2017/10/25	103	60 - 140	105	60 - 130	<25	ug/kg	NC	50
5226049	Methylene Chloride(Dichloromethane)	2017/10/25	111	60 - 140	115	60 - 130	<25	ug/kg	NC	50
5226049	o-Xylene	2017/10/25	99	60 - 140	108	60 - 130	<25	ug/kg	NC	50
5226049	p+m-Xylene	2017/10/25	97	60 - 140	106	60 - 130	<25	ug/kg	NC	50
5226049	Styrene	2017/10/25	84	60 - 140	104	60 - 130	<25	ug/kg	NC	50
5226049	Tetrachloroethylene	2017/10/25	109	60 - 140	117	60 - 130	<25	ug/kg	NC	50
5226049	Toluene	2017/10/25	100	60 - 140	107	60 - 130	<25	ug/kg	NC	50
5226049	Total Xylenes	2017/10/25					<50	ug/kg	NC	50
5226049	trans-1,2-Dichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<25	ug/kg	NC	50
5226049	trans-1,3-Dichloropropene	2017/10/25	88	60 - 140	94	60 - 130	<25	ug/kg	NC	50
5226049	Trichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<10	ug/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5226049	Trichlorofluoromethane (FREON 11)	2017/10/25	90	60 - 140	105	60 - 140	<25	ug/kg	NC	50
5226049	Vinyl Chloride	2017/10/25	95	60 - 140	109	60 - 140	<20	ug/kg	NC	50
5240040	Moisture	2017/10/31							13	25
5244688	>C8-C10 Aromatics (-EX)	2017/11/02					<0.50	mg/kg		
5244688	Aliphatic >C6-C8	2017/11/02					<1.0	mg/kg		
5244688	Aliphatic >C8-C10	2017/11/02					<1.0	mg/kg		
5244688	Benzene	2017/11/02			109	60 - 140	<0.025	mg/kg		
5244688	Ethylbenzene	2017/11/02			111	60 - 140	<0.025	mg/kg		
5244688	Toluene	2017/11/02			107	60 - 140	<0.025	mg/kg		
5244688	Total Xylenes	2017/11/02			109	60 - 140	<0.050	mg/kg		
5246529	Acid Extractable Aluminum (Al)	2017/11/04					<10	mg/kg	10	35
5246529	Acid Extractable Antimony (Sb)	2017/11/04	102	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35
5246529	Acid Extractable Arsenic (As)	2017/11/04	100	75 - 125	99	75 - 125	<2.0	mg/kg	7.5	35
5246529	Acid Extractable Barium (Ba)	2017/11/04	95	75 - 125	98	75 - 125	<5.0	mg/kg	13	35
5246529	Acid Extractable Beryllium (Be)	2017/11/04	96	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35
5246529	Acid Extractable Bismuth (Bi)	2017/11/04	99	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35
5246529	Acid Extractable Boron (B)	2017/11/04	88	75 - 125	96	75 - 125	<50	mg/kg	NC	35
5246529	Acid Extractable Cadmium (Cd)	2017/11/04	99	75 - 125	99	75 - 125	<0.30	mg/kg	NC	35
5246529	Acid Extractable Chromium (Cr)	2017/11/04	96	75 - 125	98	75 - 125	<2.0	mg/kg	11	35
5246529	Acid Extractable Cobalt (Co)	2017/11/04	99	75 - 125	98	75 - 125	<1.0	mg/kg	14	35
5246529	Acid Extractable Copper (Cu)	2017/11/04	98	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35
5246529	Acid Extractable Iron (Fe)	2017/11/04					<50	mg/kg	15	35
5246529	Acid Extractable Lead (Pb)	2017/11/04	99	75 - 125	100	75 - 125	<0.50	mg/kg	14	35
5246529	Acid Extractable Lithium (Li)	2017/11/04	98	75 - 125	97	75 - 125	<2.0	mg/kg	12	35
5246529	Acid Extractable Manganese (Mn)	2017/11/04	NC	75 - 125	100	75 - 125	<2.0	mg/kg	7.7	35
5246529	Acid Extractable Mercury (Hg)	2017/11/04	96	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35
5246529	Acid Extractable Molybdenum (Mo)	2017/11/04	100	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35
5246529	Acid Extractable Nickel (Ni)	2017/11/04	96	75 - 125	96	75 - 125	<2.0	mg/kg	8.1	35
5246529	Acid Extractable Rubidium (Rb)	2017/11/04	98	75 - 125	98	75 - 125	<2.0	mg/kg	19	35
5246529	Acid Extractable Selenium (Se)	2017/11/04	100	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35
5246529	Acid Extractable Silver (Ag)	2017/11/04	102	75 - 125	99	75 - 125	<0.50	mg/kg	NC	35

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5246529	Acid Extractable Strontium (Sr)	2017/11/04	101	75 - 125	98	75 - 125	<5.0	mg/kg	17	35
5246529	Acid Extractable Thallium (Tl)	2017/11/04	102	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35
5246529	Acid Extractable Tin (Sn)	2017/11/04	105	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35
5246529	Acid Extractable Uranium (U)	2017/11/04	106	75 - 125	105	75 - 125	<0.10	mg/kg	32	35
5246529	Acid Extractable Vanadium (V)	2017/11/04	99	75 - 125	99	75 - 125	<2.0	mg/kg	15	35
5246529	Acid Extractable Zinc (Zn)	2017/11/04	94	75 - 125	98	75 - 125	<5.0	mg/kg	6.3	35
5246951	Aroclor 1016	2017/11/08					<0.050	ug/g	NC	50
5246951	Aroclor 1221	2017/11/08					<0.050	ug/g	NC	50
5246951	Aroclor 1232	2017/11/08					<0.050	ug/g	NC	50
5246951	Aroclor 1242	2017/11/08					<0.050	ug/g	NC	50
5246951	Aroclor 1248	2017/11/08					<0.050	ug/g	NC	50
5246951	Aroclor 1254	2017/11/08	99	30 - 130	97	30 - 130	<0.050	ug/g	NC	50
5246951	Aroclor 1260	2017/11/08					<0.050	ug/g	NC	50
5252002	1-Methylnaphthalene	2017/11/11	88	30 - 130	92	30 - 130	<0.010	mg/kg	NC	50
5252002	2-Methylnaphthalene	2017/11/11	95	30 - 130	94	30 - 130	<0.010	mg/kg	NC	50
5252002	Acenaphthene	2017/11/11	89	30 - 130	89	30 - 130	<0.010	mg/kg	NC	50
5252002	Acenaphthylene	2017/11/11	92	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50
5252002	Anthracene	2017/11/11	69	30 - 130	72	30 - 130	<0.010	mg/kg	NC	50
5252002	Benzo(a)anthracene	2017/11/11	63	30 - 130	82	30 - 130	<0.010	mg/kg	NC	50
5252002	Benzo(a)pyrene	2017/11/11	82	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50
5252002	Benzo(b)fluoranthene	2017/11/11	84	30 - 130	88	30 - 130	<0.010	mg/kg	NC	50
5252002	Benzo(g,h,i)perylene	2017/11/11	83	30 - 130	83	30 - 130	<0.010	mg/kg	NC	50
5252002	Benzo(j)fluoranthene	2017/11/11	83	30 - 130	87	30 - 130	<0.010	mg/kg	NC	50
5252002	Benzo(k)fluoranthene	2017/11/11	83	30 - 130	87	30 - 130	<0.010	mg/kg	NC	50
5252002	Chrysene	2017/11/11	63	30 - 130	80	30 - 130	<0.010	mg/kg	22	50
5252002	Dibenz(a,h)anthracene	2017/11/11	82	30 - 130	77	30 - 130	<0.010	mg/kg	NC	50
5252002	Fluoranthene	2017/11/11	79	30 - 130	92	30 - 130	<0.010	mg/kg	NC	50
5252002	Fluorene	2017/11/11	91	30 - 130	92	30 - 130	<0.010	mg/kg	NC	50
5252002	Indeno(1,2,3-cd)pyrene	2017/11/11	78	30 - 130	76	30 - 130	<0.010	mg/kg	NC	50
5252002	Naphthalene	2017/11/11	77	30 - 130	76	30 - 130	<0.010	mg/kg	NC	50
5252002	Perylene	2017/11/11	81	30 - 130	88	30 - 130	<0.010	mg/kg	NC	50

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5252002	Phenanthrene	2017/11/11	89	30 - 130	92	30 - 130	<0.010	mg/kg	NC	50
5252002	Pyrene	2017/11/11	76	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50
5254196	Aliphatic >C10-C12	2017/11/11			93	30 - 130	<8.0	mg/kg	8.9	50
5254196	Aliphatic >C12-C16	2017/11/11			96	30 - 130	<15	mg/kg	13	50
5254196	Aliphatic >C16-C21	2017/11/11			97	30 - 130	<15	mg/kg	6.4	50
5254196	Aliphatic >C21-<C32	2017/11/11			89	30 - 130	<15	mg/kg	4.2	50
5254196	Aromatic >C10-C12	2017/11/11			102	30 - 130	<20 (4)	mg/kg	NC (4)	50
5254196	Aromatic >C12-C16	2017/11/11			93	30 - 130	<15	mg/kg	16	50
5254196	Aromatic >C16-C21	2017/11/11			87	30 - 130	<15	mg/kg	16	50
5254196	Aromatic >C21-<C32	2017/11/11			90	30 - 130	<15	mg/kg	13	50

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

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

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

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

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

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

- (1) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
- (2) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
- (3) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
- (4) Elevated TEH RDL(s) due to detected levels in the method blank.

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



Phil Deveau, Scientific Specialist (Organics)



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.



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551711796
Customer ID: 55PSSC69
Customer PO: JOB#B7N2164
Project ID:

Attn: Heather Macumber
Maxxam Analytics, Inc.
200 Bluewater Road
Suite 105
Bedford, NS B4B 1G9
Proj: JOB#B7N2164

Phone: (902) 832-4852
Fax:
Collected: 10/13/2017
Received: 10/24/2017
Analyzed: 10/30/2017

Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: FJF318-02R/CWT-TP2-BS2

Lab Sample ID: 551711796-0001

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/30/2017	Brown	5%	95%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Analyst(s): _____

Natalie D'Amico PLM (1)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 10/30/2017 13:37:17

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/06
 Report #: R4830564
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2228

Received: 2017/10/19, 10:14

Sample Matrix: Vegetation
 # Samples Received: 14

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Metals in Terrestrial Biota (1)	14	2017/10/30	2017/10/30	ATL SOP 00058	EPA 6020A R1 m
PCBs in soil by GC/ECD (1, 2)	12	2017/10/27	2017/11/01	ATL SOP 00106	EPA 8082A 2007 m
PCBs in tissue by GC/ECD (1, 3)	2	2017/10/26	2017/11/06	ATL SOP 00110	EPA 8082A m
PCB Aroclor sum (soil) (1)	12	N/A	2017/11/01	N/A	Auto Calc.
PCB Aroclor sum (tissue) (1)	2	N/A	2017/11/06	N/A	Auto Calc.

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

- (1) This test was performed by Maxxam Bedford
- (2) Soils are reported on a dry weight basis unless otherwise specified.
- (3) Results are reported on an as received basis unless otherwise indicated.

Your P.O. #: 121414915.300.002
Your Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/06
Report #: R4830564
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2228
Received: 2017/10/19, 10:14

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

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

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		FJF708	FJF709	FJF710	FJF711	FJF712	FJF713			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-VEG-1	CWT-VEG-2	CWT-VEG-3	CWT-VEG-4	CWT-VEG-5	CWT-VEG-6	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg	110	110	210	3200	660	3500	10	5237789	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Barium (Ba)	mg/kg	49	37	43	56	32	74	5.0	5237789	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Boron (B)	mg/kg	11	13	16	12	5.9	5.9	5.0	5237789	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	0.44	<0.30	<0.30	0.30	5237789	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	<2.0	<2.0	5.1	2.1	5.4	2.0	5237789	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	<1.0	1.9	<1.0	1.6	1.0	5237789	N/A
Acid Extractable Copper (Cu)	mg/kg	4.0	6.4	2.9	25	2.4	1100	2.0	5237789	N/A
Acid Extractable Iron (Fe)	mg/kg	67	180	230	8400	750	8700	50	5237789	N/A
Acid Extractable Lead (Pb)	mg/kg	0.58	<0.50	1.2	3.6	2.9	210	0.50	5237789	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Manganese (Mn)	mg/kg	260	200	540	660	91	130	2.0	5237789	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	<2.0	<2.0	2.9	<2.0	7.1	2.0	5237789	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	1.5	0.50	5237789	N/A
Acid Extractable Strontium (Sr)	mg/kg	34	18	21	26	26	17	5.0	5237789	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5237789	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	<0.10	0.21	<0.10	0.40	0.10	5237789	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	<2.0	<2.0	13	<2.0	8.7	2.0	5237789	N/A
Acid Extractable Zinc (Zn)	mg/kg	23	20	29	65	21	86	5.0	5237789	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		FJF714	FJF714	FJF715	FJF716	FJF717	FJF718			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-VEG-7	CWT-VEG-7 Lab-Dup	CWT-VEG-8	CWT-VEG-9	CWT-VEG-10	CWT-VEG-11	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg	280	240	170	120	140	1100	10	5237789	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Barium (Ba)	mg/kg	41	40	28	51	31	120	5.0	5237789	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Boron (B)	mg/kg	21	22	16	21	17	12	5.0	5237789	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	0.30	<0.30	0.58	0.30	5237789	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5237789	N/A
Acid Extractable Copper (Cu)	mg/kg	6.9	6.9	2.9	4.4	2.9	12	2.0	5237789	N/A
Acid Extractable Iron (Fe)	mg/kg	930	650 (1)	230	140	160	1900	50	5237789	N/A
Acid Extractable Lead (Pb)	mg/kg	1.2	0.91	0.83	1.1	2.7	10	0.50	5237789	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Manganese (Mn)	mg/kg	590	580	230	310	350	430	2.0	5237789	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	4.2	2.0	5237789	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5237789	N/A
Acid Extractable Strontium (Sr)	mg/kg	13	14	12	18	14	58	5.0	5237789	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5237789	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5237789	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Zinc (Zn)	mg/kg	120	110	13	29	16	680	5.0	5237789	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. < 10 % of compounds in multi-component analysis in violation.

ELEMENTS BY ATOMIC SPECTROSCOPY (VEGETATION)

Maxxam ID		FJF719	FJF720	FJF721			
Sampling Date		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A			
	UNITS	CWT-VEG-12	CWT-BER-3/4	CWT-BER-5	RDL	QC Batch	MDL
Metals							
Acid Extractable Aluminum (Al)	mg/kg	660	1200	14	10	5237789	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Barium (Ba)	mg/kg	60	34	<5.0	5.0	5237789	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Boron (B)	mg/kg	<5.0	9.0	5.3	5.0	5237789	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	0.30	5237789	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	110	<2.0	2.0	5237789	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	1.5	<1.0	1.0	5237789	N/A
Acid Extractable Copper (Cu)	mg/kg	3.4	5.6	4.5	2.0	5237789	N/A
Acid Extractable Iron (Fe)	mg/kg	1200	4600	<50	50	5237789	N/A
Acid Extractable Lead (Pb)	mg/kg	1.9	1.1	<0.50	0.50	5237789	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Manganese (Mn)	mg/kg	290	260	46	2.0	5237789	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	44	<2.0	2.0	5237789	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	2.0	5237789	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	0.50	5237789	N/A
Acid Extractable Strontium (Sr)	mg/kg	22	10	<5.0	5.0	5237789	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	0.10	5237789	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	<0.10	0.10	5237789	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	5.0	<2.0	2.0	5237789	N/A
Acid Extractable Zinc (Zn)	mg/kg	31	25	<5.0	5.0	5237789	N/A
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
N/A = Not Applicable							

POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

Maxxam ID		FJF708	FJF709	FJF710	FJF711	FJF712	FJF713			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-VEG-1	CWT-VEG-2	CWT-VEG-3	CWT-VEG-4	CWT-VEG-5	CWT-VEG-6	RDL	QC Batch	MDL

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1260	ug/g	0.088	0.20	0.51	0.13	0.24	0.16	0.050	5235088	N/A
Calculated Total PCB	ug/g	0.088	0.20	0.51	0.13	0.24	0.16	0.050	5225466	N/A

Surrogate Recovery (%)										
Decachlorobiphenyl	%	94	93	96	97	97	95		5235088	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

Maxxam ID		FJF714	FJF715	FJF716	FJF716	FJF717	FJF718			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-VEG-7	CWT-VEG-8	CWT-VEG-9	CWT-VEG-9 Lab-Dup	CWT-VEG-10	CWT-VEG-11	RDL	QC Batch	MDL

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5235088	N/A
Aroclor 1260	ug/g	0.11	0.15	0.35	0.33	0.075	0.069	0.050	5235088	N/A
Calculated Total PCB	ug/g	0.11	0.15	0.35		0.075	0.069	0.050	5225466	N/A

Surrogate Recovery (%)										
Decachlorobiphenyl	%	93	95	95	92	92	97		5235088	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable										

POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

Maxxam ID		FJF719		FJF720	FJF721	FJF721			
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A		N/A	N/A	N/A			
	UNITS	CWT-VEG-12	QC Batch	CWT-BER-3/4	CWT-BER-5	CWT-BER-5 Lab-Dup	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Aroclor 1221	ug/g	<0.050	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Aroclor 1232	ug/g	<0.050	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Aroclor 1248	ug/g	<0.050	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Aroclor 1242	ug/g	<0.050	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Aroclor 1254	ug/g	<0.050	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Aroclor 1260	ug/g	0.33	5235088	<0.050	<0.050	<0.050	0.050	5233227	N/A
Calculated Total PCB	ug/g	0.33	5225466	<0.050	<0.050		0.050	5225467	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	93	5235088						
Decachlorobiphenyl	%			60 (1)	74	72		5233227	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) PCB surrogate not within acceptance limits. Sample past recommended hold time for repeat analysis.									

TEST SUMMARY

Maxxam ID: FJF708
Sample ID: CWT-VEG-1
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF709
Sample ID: CWT-VEG-2
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF710
Sample ID: CWT-VEG-3
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF711
Sample ID: CWT-VEG-4
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF712
Sample ID: CWT-VEG-5
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

TEST SUMMARY

Maxxam ID: FJF713
Sample ID: CWT-VEG-6
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF714
Sample ID: CWT-VEG-7
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF714 Dup
Sample ID: CWT-VEG-7
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine

Maxxam ID: FJF715
Sample ID: CWT-VEG-8
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF716
Sample ID: CWT-VEG-9
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF716 Dup
Sample ID: CWT-VEG-9
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates

Maxxam Job #: B7N2228
Report Date: 2017/11/06

Stantec Consulting Ltd
Client Project #: FORMER MILITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

TEST SUMMARY

Maxxam ID: FJF717
Sample ID: CWT-VEG-10
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF718
Sample ID: CWT-VEG-11
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF719
Sample ID: CWT-VEG-12
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5235088	2017/10/27	2017/11/01	Lisa Gates
PCB Aroclor sum (soil)	CALC	5225466	N/A	2017/11/01	Automated Statchk

Maxxam ID: FJF720
Sample ID: CWT-BER-3/4
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in tissue by GC/ECD	GC/ECD	5233227	2017/10/26	2017/11/06	Lisa Gates
PCB Aroclor sum (tissue)	CALC	5225467	N/A	2017/11/06	Automated Statchk

Maxxam ID: FJF721
Sample ID: CWT-BER-5
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5237789	2017/10/30	2017/10/30	Bryon Angevine
PCBs in tissue by GC/ECD	GC/ECD	5233227	2017/10/26	2017/11/06	Lisa Gates
PCB Aroclor sum (tissue)	CALC	5225467	N/A	2017/11/06	Automated Statchk

Maxxam Job #: B7N2228
Report Date: 2017/11/06

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

TEST SUMMARY

Maxxam ID: FJF721 Dup
Sample ID: CWT-BER-5
Matrix: Vegetation

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in tissue by GC/ECD	GC/ECD	5233227	2017/10/26	2017/11/06	Lisa Gates

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

PCBs in soil by GC/ECD: Due to the nature of the samples, an alternate sample prep procedure was employed. Although accredited procedures were used (PCB in Soil) the accreditation does not extend to the matrix being prepared and analyzed. Samples were dried prior to analysis. Results reported on dried aliquot.

PCBs in tissue by GC/ECD: Results are reported on an as received basis unless otherwise indicated. Due to the nature of the samples, an alternate sample prep procedure was employed. Although accredited procedures were used (PCB in Tissue) the accreditation does not extend to the matrix being prepared and analyzed.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5233227	Decachlorobiphenyl	2017/11/06	77	30 - 130	116	30 - 130	85	%			76	%
5235088	Decachlorobiphenyl	2017/11/01	86	30 - 130	95	30 - 130	110	%				
5233227	Aroclor 1016	2017/11/06					<0.050	ug/g	NC	50	<0.050	ug/g
5233227	Aroclor 1221	2017/11/06					<0.050	ug/g	NC	50	<0.050	ug/g
5233227	Aroclor 1232	2017/11/06					<0.050	ug/g	NC	50	<0.050	ug/g
5233227	Aroclor 1242	2017/11/06					<0.050	ug/g	NC	50	<0.050	ug/g
5233227	Aroclor 1248	2017/11/06					<0.050	ug/g	NC	50	<0.050	ug/g
5233227	Aroclor 1254	2017/11/06	82	30 - 130	92	30 - 130	<0.050	ug/g	NC	50	<0.050	ug/g
5233227	Aroclor 1260	2017/11/06					<0.050	ug/g	NC	50	<0.050	ug/g
5235088	Aroclor 1016	2017/11/01					<0.050	ug/g	NC	50		
5235088	Aroclor 1221	2017/11/01					<0.050	ug/g	NC	50		
5235088	Aroclor 1232	2017/11/01					<0.050	ug/g	NC	50		
5235088	Aroclor 1242	2017/11/01					<0.050	ug/g	NC	50		
5235088	Aroclor 1248	2017/11/01					<0.050	ug/g	NC	50		
5235088	Aroclor 1254	2017/11/01	87	30 - 130	101	30 - 130	<0.050	ug/g	NC	50		
5235088	Aroclor 1260	2017/11/01					<0.050	ug/g	6.1	50		
5237789	Acid Extractable Aluminum (Al)	2017/10/30					<10	mg/kg	16	35		
5237789	Acid Extractable Antimony (Sb)	2017/10/30	87	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Arsenic (As)	2017/10/30	97	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Barium (Ba)	2017/10/30	90	75 - 125	97	75 - 125	<5.0	mg/kg	1.3	35		
5237789	Acid Extractable Beryllium (Be)	2017/10/30	96	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Boron (B)	2017/10/30	94	75 - 125	97	75 - 125	<5.0	mg/kg	2.4	35		
5237789	Acid Extractable Cadmium (Cd)	2017/10/30	98	75 - 125	99	75 - 125	<0.30	mg/kg	NC	35		
5237789	Acid Extractable Chromium (Cr)	2017/10/30	97	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Cobalt (Co)	2017/10/30	99	75 - 125	100	75 - 125	<1.0	mg/kg	NC	35		
5237789	Acid Extractable Copper (Cu)	2017/10/30	97	75 - 125	98	75 - 125	<2.0	mg/kg	0.87	35		
5237789	Acid Extractable Iron (Fe)	2017/10/30					<50	mg/kg	36 (1)	35		
5237789	Acid Extractable Lead (Pb)	2017/10/30	95	75 - 125	98	75 - 125	<0.50	mg/kg	28	35		
5237789	Acid Extractable Lithium (Li)	2017/10/30	98	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Manganese (Mn)	2017/10/30	NC	75 - 125	98	75 - 125	<2.0	mg/kg	0.65	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5237789	Acid Extractable Molybdenum (Mo)	2017/10/30	94	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Nickel (Ni)	2017/10/30	102	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Selenium (Se)	2017/10/30	97	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Silver (Ag)	2017/10/30	97	75 - 125	100	75 - 125	<0.50	mg/kg	NC	35		
5237789	Acid Extractable Strontium (Sr)	2017/10/30	97	75 - 125	101	75 - 125	<5.0	mg/kg	1.9	35		
5237789	Acid Extractable Thallium (Tl)	2017/10/30	91	75 - 125	98	75 - 125	<0.10	mg/kg	NC	35		
5237789	Acid Extractable Uranium (U)	2017/10/30	99	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5237789	Acid Extractable Vanadium (V)	2017/10/30	99	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5237789	Acid Extractable Zinc (Zn)	2017/10/30	NC	75 - 125	97	75 - 125	<5.0	mg/kg	4.8	35		

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

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

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

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

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

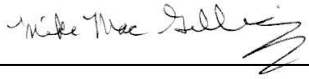
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

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

(1) Poor RPD due to sample inhomogeneity. < 10 % of compounds in multi-component analysis in violation.

VALIDATION SIGNATURE PAGE

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



Mike MacGillivray, Scientific Specialist (Inorganics)



Rosemarie MacDonald, Scientific Specialist (Organics)

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

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/30
 Report #: R4812160
 Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7N2746

Received: 2017/10/19, 10:14

Sample Matrix: Soil
 # Samples Received: 69

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (soil)	11	N/A	2017/10/28	N/A	Auto Calc.
TEH in Soil (PIRI) (3)	1	2017/10/20	2017/10/23	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	13	2017/10/23	2017/10/23	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	2	2017/10/23	2017/10/24	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	4	2017/10/23	2017/10/25	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	15	2017/10/23	2017/10/26	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	1	2017/10/23	2017/10/27	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	16	2017/10/24	2017/10/26	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	4	2017/10/24	2017/10/27	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	1	2017/10/26	2017/10/27	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	2	2017/10/26	2017/10/28	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	1	2017/10/27	2017/10/29	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	12	2017/10/23	2017/10/23	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	3	2017/10/23	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	19	2017/10/24	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	2	2017/10/27	2017/10/27	ATL SOP 00058	EPA 6020A R1 m
Moisture	39	N/A	2017/10/20	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	22	N/A	2017/10/23	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	2	N/A	2017/10/25	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	6	N/A	2017/10/28	ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (3)	11	2017/10/23	2017/10/27	ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (3)	2	2017/10/23	2017/10/24	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (3)	30	2017/10/24	2017/10/26	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (3)	1	2017/10/25	2017/10/26	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (3)	2	2017/10/26	2017/10/27	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	2	N/A	2017/10/24	N/A	Auto Calc.
PCB Aroclor sum (soil)	30	N/A	2017/10/26	N/A	Auto Calc.
PCB Aroclor sum (soil)	2	N/A	2017/10/27	N/A	Auto Calc.
Asbestos (bulk) by PLM (Sub fr Bedford) (1)	6	N/A	2017/10/27		
Total Organic Carbon in Soil (2)	3	N/A	2017/10/29	CAM SOP-00468	BCMOC TOC Aug 2014

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/30
 Report #: R4812160
 Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7N2746

Received: 2017/10/19, 10:14

Sample Matrix: Soil
 # Samples Received: 69

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted		
ModTPH (T1) Calc. for Soil	15	N/A	2017/10/24 N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	4	N/A	2017/10/25 N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	1	N/A	2017/10/26 N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	37	N/A	2017/10/27 N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	2	N/A	2017/10/29 N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	1	N/A	2017/10/30 N/A	Atl. RBCA v3.1 m
VOCs in Soil - Field Preserved (4)	5	N/A	2017/10/25 ATL SOP 00133	EPA 8260C R3 m
VPH in Soil (PIRI) - Field Preserved (4)	13	N/A	2017/10/23 ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (4)	41	N/A	2017/10/24 ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (4)	1	N/A	2017/10/25 ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (4)	5	N/A	2017/10/26 ATL SOP 00119	Atl. RBCA v3.1 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

Your P.O. #: 121414915.300.002
Your Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/10/30
Report #: R4812160
Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7N2746

Received: 2017/10/19, 10:14

- (1) This test was performed by Sub Bedford to EMSL
- (2) This test was performed by Maxxam Analytics Mississauga
- (3) Soils are reported on a dry weight basis unless otherwise specified.
- (4) 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.

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

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

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI260	FJI261	FJI262	FJI263	FJI264	FJI265		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS1	CWT-SS2	CWT-SS3	CWT-SS4	CWT-SS5	CWT-SS6	RDL	QC Batch

Inorganics									
Moisture	%	18	14	9.8	9.2	10	14	1.0	5222457
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

Maxxam ID		FJI266		FJI267		FJI268	FJI269	FJI270		
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A		N/A		N/A	N/A	N/A		
	UNITS	CWT-SS7	QC Batch	CWT-SS8	QC Batch	CWT-SS9	CWT-SS10	CWT-SS11	RDL	QC Batch

Inorganics										
Moisture	%	25	5230118	91	5235625	16	14	23	1.0	5222457
Subcontracted Analysis										
Subcontract Parameter	N/A			ATTACHED	5224436				N/A	
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

Maxxam ID		FJI271		FJI272		FJI273	FJI274	FJI275		
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A		N/A		N/A	N/A	N/A		
	UNITS	CWT-SS12	QC Batch	CWT-SS13	QC Batch	CWT-SS14	CWT-SS15	CWT-SS16	RDL	QC Batch

Inorganics										
Moisture	%	25	5222457	11	5235625	13	24	25	1.0	5222457
Total Organic Carbon	mg/kg					8300			500	5230918
Subcontracted Analysis										
Subcontract Parameter	N/A			ATTACHED	5224436				N/A	
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										

Maxxam ID		FJI276	FJI277	FJI278	FJI279	FJI280	FJI281		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS17	CWT-SS18	CWT-SS19	CWT-SS20	CWT-SS21	CWT-SS22	RDL	QC Batch

Inorganics									
Moisture	%	17	18	22	19	22	16	1.0	5222457
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI282	FJI283	FJI284		FJI285	FJI285	FJI286		
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A		N/A	N/A	N/A		
	UNITS	CWT-SS23	CWT-SS24	CWT-SS25	QC Batch	CWT-SS26	CWT-SS26 Lab-Dup	CWT-SS27	RDL	QC Batch

Inorganics										
Moisture	%	17	12	13	5222931	15	15	22	1.0	5223371
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										

Maxxam ID		FJI287		FJI288	FJI289		FJI290	FJI291		
Sampling Date		2017/10/13		2017/10/13	2017/10/13		2017/10/13	2017/10/13		
COC Number		N/A		N/A	N/A		N/A	N/A		
	UNITS	CWT-SS28	QC Batch	CWT-SS29	CWT-SS30	QC Batch	CWT-SS31	CWT-SS32	RDL	QC Batch

Inorganics										
Moisture	%	19	5235625	6.7	17	5223371	21	21	1.0	5222587
Subcontracted Analysis										
Subcontract Parameter	N/A	ATTACHED	5224436						N/A	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FJI292	FJI293		FJI294		FJI295			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS33	CWT-SS34	QC Batch	CWT-SS35	QC Batch	CWT-SS36	RDL	QC Batch	

Inorganics										
Moisture	%	24	13	5222587	30	5235625	31	1.0	5222587	
Subcontracted Analysis										
Subcontract Parameter	N/A				ATTACHED	5224436		N/A		
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FJI296		FJI297	FJI298	FJI299	FJI300	FJI301		
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS37	QC Batch	CWT-SS38	CWT-SS39	CWT-SS40	CWT-SS41	CWT-SS42	RDL	QC Batch

Inorganics										
Moisture	%	46	5235625	12	21	25	16	14	1.0	5222587
Subcontracted Analysis										
Subcontract Parameter	N/A	ATTACHED	5224436						N/A	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI302	FJI303	FJI304	FJI304	FJI305	FJI306	FJI307		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS43	CWT-SS44	CWT-SS45	CWT-SS45 Lab-Dup	CWT-SS46	CWT-SS47	CWT-SS48	RDL	QC Batch

Inorganics										
Moisture	%	24	9.3	11	10	18	9.1	11	1.0	5222587
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										

Maxxam ID		FJI308	FJI309	FJI310	FJI311		FJI312	FJI313		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A		N/A	N/A		
	UNITS	CWT-SS49	CWT-SS50	CWT-SS51	CWT-SS52	QC Batch	CWT-SS53	CWT-SS54	RDL	QC Batch

Inorganics										
Moisture	%	12	12	8.4	31	5222587	10	25	1.0	5222931
Total Organic Carbon	mg/kg						17000		500	5230918
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FJI314	FJI315	FJI316	FJI317	FJI318	FJI319	FJI320		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS55	CWT-SS56	CWT-SS57	CWT-SS58	CWT-SS59	CWT-SS60	CWT-SS61	RDL	QC Batch

Inorganics										
Moisture	%	75	10	15	21	89	25	27	1.0	5222931
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FJI321	FJI322	FJI323		FJI324		FJI325		
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13		2017/10/13		
COC Number		N/A	N/A	N/A		N/A		N/A		
	UNITS	CWT-SS62	CWT-SS63	CWT-SS64	QC Batch	CWT-SS65	QC Batch	CWT-SS66	RDL	QC Batch

Inorganics										
Moisture	%	11	14	11	5222931	17	5235625	16	1.0	5222931
Total Organic Carbon	mg/kg			9200	5230918				500	
Subcontracted Analysis										
Subcontract Parameter	N/A					ATTACHED	5224436		N/A	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI325	FJI326	FJI327		FJI328		
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13		
COC Number		N/A	N/A	N/A		N/A		
	UNITS	CWT-SS66 Lab-Dup	CWT-SS67	CWT-SS68	QC Batch	CWT-SS70	RDL	QC Batch
Inorganics								
Moisture	%	14	2.3	11	5222931	20	1.0	5230118
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate								

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI260	FJI261		FJI262	FJI263		FJI266		
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13		2017/10/13		
COC Number		N/A	N/A		N/A	N/A		N/A		
	UNITS	CWT-SS1	CWT-SS2	QC Batch	CWT-SS3	CWT-SS4	QC Batch	CWT-SS7	RDL	QC Batch

Metals										
Acid Extractable Aluminum (Al)	mg/kg	5300	3900	5225554	5000	3700	5227327	6600	10	5234500
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	5227327	<2.0	2.0	5234500
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	5227327	<2.0	2.0	5234500
Acid Extractable Barium (Ba)	mg/kg	77	30	5225554	93	49	5227327	49	5.0	5234500
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	5227327	<2.0	2.0	5234500
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	5227327	<2.0	2.0	5234500
Acid Extractable Boron (B)	mg/kg	<50	<50	5225554	<50	<50	5227327	<50	50	5234500
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	5225554	<0.30	<0.30	5227327	<0.30	0.30	5234500
Acid Extractable Chromium (Cr)	mg/kg	6.0	6.3	5225554	5.0	5.0	5227327	11	2.0	5234500
Acid Extractable Cobalt (Co)	mg/kg	2.0	1.5	5225554	1.7	1.8	5227327	2.5	1.0	5234500
Acid Extractable Copper (Cu)	mg/kg	6.8	4.1	5225554	7.2	11	5227327	9.1	2.0	5234500
Acid Extractable Iron (Fe)	mg/kg	18000	11000	5225554	19000	13000	5227327	11000	50	5234500
Acid Extractable Lead (Pb)	mg/kg	9.8	12	5225554	11	25	5227327	3.7	0.50	5234500
Acid Extractable Lithium (Li)	mg/kg	4.6	2.6	5225554	4.2	3.6	5227327	5.1	2.0	5234500
Acid Extractable Manganese (Mn)	mg/kg	450	130	5225554	540	350	5227327	150	2.0	5234500
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	5225554	<0.10	<0.10	5227327	<0.10	0.10	5234500
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	5227327	<2.0	2.0	5234500
Acid Extractable Nickel (Ni)	mg/kg	2.3	2.4	5225554	2.4	2.9	5227327	8.2	2.0	5234500
Acid Extractable Rubidium (Rb)	mg/kg	5.9	5.5	5225554	6.4	5.5	5227327	5.3	2.0	5234500
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5225554	<1.0	<1.0	5227327	<1.0	1.0	5234500
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5225554	<0.50	<0.50	5227327	<0.50	0.50	5234500
Acid Extractable Strontium (Sr)	mg/kg	7.8	5.2	5225554	8.1	5.7	5227327	12	5.0	5234500
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5225554	<0.10	<0.10	5227327	<0.10	0.10	5234500
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	5227327	<2.0	2.0	5234500
Acid Extractable Uranium (U)	mg/kg	0.37	0.25	5225554	0.34	0.33	5227327	0.55	0.10	5234500
Acid Extractable Vanadium (V)	mg/kg	14	20	5225554	13	11	5227327	24	2.0	5234500
Acid Extractable Zinc (Zn)	mg/kg	78	26	5225554	80	45	5227327	150	5.0	5234500

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI269	FJI270	FJI271	FJI273	FJI273	FJI273		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS10	CWT-SS11	CWT-SS12	CWT-SS14	CWT-SS14 Lab-Dup	CWT-SS14 Lab-Dup 2	RDL	QC Batch
Metals									
Acid Extractable Aluminum (Al)	mg/kg	6200	4200	4400	4800	4700		10	5227327
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0		2.0	5227327
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0		2.0	5227327
Acid Extractable Barium (Ba)	mg/kg	41	14	21	63	65		5.0	5227327
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0		2.0	5227327
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0		2.0	5227327
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50		50	5227327
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	0.82	0.79		0.30	5227327
Acid Extractable Chromium (Cr)	mg/kg	13	7.4	8.6	14	13		2.0	5227327
Acid Extractable Cobalt (Co)	mg/kg	2.7	1.0	<1.0	3.1	2.7		1.0	5227327
Acid Extractable Copper (Cu)	mg/kg	7.7	<2.0	3.5	36	30		2.0	5227327
Acid Extractable Iron (Fe)	mg/kg	14000	13000	3300	12000	12000		50	5227327
Acid Extractable Lead (Pb)	mg/kg	5.1	6.6	4.6	110	95		0.50	5227327
Acid Extractable Lithium (Li)	mg/kg	3.7	<2.0	<2.0	5.7	5.8		2.0	5227327
Acid Extractable Manganese (Mn)	mg/kg	220	81	52	220	220		2.0	5227327
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10		0.10	5227327
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0		2.0	5227327
Acid Extractable Nickel (Ni)	mg/kg	4.6	<2.0	2.1	6.0	5.5		2.0	5227327
Acid Extractable Rubidium (Rb)	mg/kg	5.8	6.0	2.4	5.9	6.0		2.0	5227327
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0		1.0	5227327
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50		0.50	5227327
Acid Extractable Strontium (Sr)	mg/kg	12	<5.0	5.1	29	30		5.0	5227327
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10		0.10	5227327
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	6.8	3.5		2.0	5227327
Acid Extractable Uranium (U)	mg/kg	0.48	0.31	0.39	0.27	0.31		0.10	5227327
Acid Extractable Vanadium (V)	mg/kg	33	30	13	19	21		2.0	5227327
Acid Extractable Zinc (Zn)	mg/kg	29	12	6.1	170	94 (1)	96 (2)	5.0	5227327
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
Lab-Dup = Laboratory Initiated Duplicate									
(1) Poor RPD due to sample inhomogeneity. Results confirmed by repeat digestion and analysis.									
(2) Poor RPD due to sample inhomogeneity.									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI275	FJI277		FJI279	FJI281		FJI283		
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13		2017/10/13		
COC Number		N/A	N/A		N/A	N/A		N/A		
	UNITS	CWT-SS16	CWT-SS18	QC Batch	CWT-SS20	CWT-SS22	QC Batch	CWT-SS24	RDL	QC Batch

Metals										
Acid Extractable Aluminum (Al)	mg/kg	7800	6000	5227327	8100	5800	5225311	4100	10	5227327
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5227327	<2.0	<2.0	5225311	<2.0	2.0	5227327
Acid Extractable Arsenic (As)	mg/kg	2.2	<2.0	5227327	<2.0	<2.0	5225311	<2.0	2.0	5227327
Acid Extractable Barium (Ba)	mg/kg	140	36	5227327	54	47	5225311	48	5.0	5227327
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5227327	<2.0	<2.0	5225311	<2.0	2.0	5227327
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5227327	<2.0	<2.0	5225311	<2.0	2.0	5227327
Acid Extractable Boron (B)	mg/kg	<50	<50	5227327	<50	<50	5225311	<50	50	5227327
Acid Extractable Cadmium (Cd)	mg/kg	0.76	<0.30	5227327	1.3	0.69	5225311	<0.30	0.30	5227327
Acid Extractable Chromium (Cr)	mg/kg	21	11	5227327	17	11	5225311	9.1	2.0	5227327
Acid Extractable Cobalt (Co)	mg/kg	4.8	2.8	5227327	3.2	2.9	5225311	2.5	1.0	5227327
Acid Extractable Copper (Cu)	mg/kg	24	6.5	5227327	13	37	5225311	9.4	2.0	5227327
Acid Extractable Iron (Fe)	mg/kg	22000	13000	5227327	20000	15000	5225311	13000	50	5227327
Acid Extractable Lead (Pb)	mg/kg	200	24	5227327	23	63	5225311	63	0.50	5227327
Acid Extractable Lithium (Li)	mg/kg	8.3	4.8	5227327	5.1	5.0	5225311	4.0	2.0	5227327
Acid Extractable Manganese (Mn)	mg/kg	380	200	5227327	310	260	5225311	220	2.0	5227327
Acid Extractable Mercury (Hg)	mg/kg	0.18	<0.10	5227327	<0.10	<0.10	5225311	<0.10	0.10	5227327
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5227327	<2.0	<2.0	5225311	<2.0	2.0	5227327
Acid Extractable Nickel (Ni)	mg/kg	12	4.6	5227327	6.0	5.3	5225311	4.2	2.0	5227327
Acid Extractable Rubidium (Rb)	mg/kg	13	5.9	5227327	4.9	6.4	5225311	5.6	2.0	5227327
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5227327	<1.0	<1.0	5225311	<1.0	1.0	5227327
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5227327	<0.50	<0.50	5225311	<0.50	0.50	5227327
Acid Extractable Strontium (Sr)	mg/kg	17	11	5227327	22	14	5225311	8.5	5.0	5227327
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5227327	<0.10	<0.10	5225311	<0.10	0.10	5227327
Acid Extractable Tin (Sn)	mg/kg	3.3	<2.0	5227327	<2.0	<2.0	5225311	<2.0	2.0	5227327
Acid Extractable Uranium (U)	mg/kg	0.59	0.36	5227327	0.68	0.40	5225311	0.30	0.10	5227327
Acid Extractable Vanadium (V)	mg/kg	21	26	5227327	34	25	5225311	21	2.0	5227327
Acid Extractable Zinc (Zn)	mg/kg	750	71	5227327	290	130	5225311	55	5.0	5227327

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJ1285		FJ1289		FJ1290		FJ1291		
Sampling Date		2017/10/13		2017/10/13		2017/10/13		2017/10/13		
COC Number		N/A		N/A		N/A		N/A		
	UNITS	CWT-SS26	QC Batch	CWT-SS30	QC Batch	CWT-SS31	QC Batch	CWT-SS32	RDL	QC Batch

Metals										
Acid Extractable Aluminum (Al)	mg/kg	5700	5227327	5200	5225311	4800	5225554	8900	10	5227329
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5227327	<2.0	5225311	<2.0	5225554	<2.0	2.0	5227329
Acid Extractable Arsenic (As)	mg/kg	<2.0	5227327	<2.0	5225311	<2.0	5225554	<2.0	2.0	5227329
Acid Extractable Barium (Ba)	mg/kg	67	5227327	39	5225311	79	5225554	46	5.0	5227329
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5227327	<2.0	5225311	<2.0	5225554	<2.0	2.0	5227329
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5227327	<2.0	5225311	<2.0	5225554	<2.0	2.0	5227329
Acid Extractable Boron (B)	mg/kg	<50	5227327	<50	5225311	<50	5225554	<50	50	5227329
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5227327	1.1	5225311	0.77	5225554	49	0.30	5227329
Acid Extractable Chromium (Cr)	mg/kg	9.3	5227327	11	5225311	8.0	5225554	13	2.0	5227329
Acid Extractable Cobalt (Co)	mg/kg	2.4	5227327	3.3	5225311	1.8	5225554	2.6	1.0	5227329
Acid Extractable Copper (Cu)	mg/kg	5.5	5227327	12	5225311	12	5225554	7.6	2.0	5227329
Acid Extractable Iron (Fe)	mg/kg	16000	5227327	12000	5225311	17000	5225554	16000	50	5227329
Acid Extractable Lead (Pb)	mg/kg	13	5227327	18	5225311	62	5225554	11	0.50	5227329
Acid Extractable Lithium (Li)	mg/kg	5.8	5227327	5.4	5225311	3.7	5225554	4.3	2.0	5227329
Acid Extractable Manganese (Mn)	mg/kg	280	5227327	220	5225311	460	5225554	180	2.0	5227329
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5227327	<0.10	5225311	<0.10	5225554	<0.10	0.10	5227329
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5227327	<2.0	5225311	<2.0	5225554	<2.0	2.0	5227329
Acid Extractable Nickel (Ni)	mg/kg	3.8	5227327	6.3	5225311	2.5	5225554	4.1	2.0	5227329
Acid Extractable Rubidium (Rb)	mg/kg	8.2	5227327	6.8	5225311	5.2	5225554	8.0	2.0	5227329
Acid Extractable Selenium (Se)	mg/kg	<1.0	5227327	<1.0	5225311	<1.0	5225554	<1.0	1.0	5227329
Acid Extractable Silver (Ag)	mg/kg	<0.50	5227327	<0.50	5225311	<0.50	5225554	<0.50	0.50	5227329
Acid Extractable Strontium (Sr)	mg/kg	10	5227327	16	5225311	11	5225554	20	5.0	5227329
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5227327	<0.10	5225311	<0.10	5225554	<0.10	0.10	5227329
Acid Extractable Tin (Sn)	mg/kg	<2.0	5227327	<2.0	5225311	<2.0	5225554	<2.0	2.0	5227329
Acid Extractable Uranium (U)	mg/kg	0.42	5227327	0.49	5225311	0.29	5225554	0.37	0.10	5227329
Acid Extractable Vanadium (V)	mg/kg	24	5227327	26	5225311	13	5225554	31	2.0	5227329
Acid Extractable Zinc (Zn)	mg/kg	62	5227327	86	5225311	120	5225554	1400	5.0	5227329

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI291		FJI293	FJI295	FJI300	FJI302	FJI303		
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS32 Lab-Dup	QC Batch	CWT-SS34	CWT-SS36	CWT-SS41	CWT-SS43	CWT-SS44	RDL	QC Batch

Metals										
Acid Extractable Aluminum (Al)	mg/kg	8700	5227329	8900	17000	9000	4800	5100	10	5227327
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5227329	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327
Acid Extractable Arsenic (As)	mg/kg	<2.0	5227329	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327
Acid Extractable Barium (Ba)	mg/kg	51	5227329	28	450	39	27	40	5.0	5227327
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5227329	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5227329	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327
Acid Extractable Boron (B)	mg/kg	<50	5227329	<50	<50	<50	<50	<50	50	5227327
Acid Extractable Cadmium (Cd)	mg/kg	52	5227329	1.2	<0.30	6.5	<0.30	<0.30	0.30	5227327
Acid Extractable Chromium (Cr)	mg/kg	13	5227329	18	73	17	7.5	11	2.0	5227327
Acid Extractable Cobalt (Co)	mg/kg	2.6	5227329	3.4	14	2.7	1.5	3.1	1.0	5227327
Acid Extractable Copper (Cu)	mg/kg	7.7	5227329	9.0	3.3	9.6	6.9	6.0	2.0	5227327
Acid Extractable Iron (Fe)	mg/kg	16000	5227329	20000	31000	21000	10000	13000	50	5227327
Acid Extractable Lead (Pb)	mg/kg	14	5227329	9.4	2.0	24	4.4	4.3	0.50	5227327
Acid Extractable Lithium (Li)	mg/kg	3.7	5227329	4.2	8.2	3.0	<2.0	4.0	2.0	5227327
Acid Extractable Manganese (Mn)	mg/kg	170	5227329	180	290	170	110	150	2.0	5227327
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5227329	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5227327
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5227329	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327
Acid Extractable Nickel (Ni)	mg/kg	4.6	5227329	6.6	40	5.6	2.9	5.1	2.0	5227327
Acid Extractable Rubidium (Rb)	mg/kg	8.1	5227329	4.8	35	4.4	3.9	6.9	2.0	5227327
Acid Extractable Selenium (Se)	mg/kg	<1.0	5227329	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5227327
Acid Extractable Silver (Ag)	mg/kg	<0.50	5227329	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5227327
Acid Extractable Strontium (Sr)	mg/kg	21	5227329	11	10	14	8.1	8.6	5.0	5227327
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5227329	<0.10	0.25	<0.10	<0.10	<0.10	0.10	5227327
Acid Extractable Tin (Sn)	mg/kg	<2.0	5227329	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327
Acid Extractable Uranium (U)	mg/kg	0.40	5227329	0.56	0.17	0.43	0.26	0.35	0.10	5227327
Acid Extractable Vanadium (V)	mg/kg	30	5227329	41	88	42	19	28	2.0	5227327
Acid Extractable Zinc (Zn)	mg/kg	1300	5227329	48	57	300	48	23	5.0	5227327

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI307	FJI308	FJI311		FJI313	FJI315	FJI316		
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A		N/A	N/A	N/A		
	UNITS	CWT-SS48	CWT-SS49	CWT-SS52	QC Batch	CWT-SS54	CWT-SS56	CWT-SS57	RDL	QC Batch

Metals										
Acid Extractable Aluminum (Al)	mg/kg	3300	4700	3600	5227327	7700	1900	11000	10	5225311
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Barium (Ba)	mg/kg	35	59	18	5227327	18	35	48	5.0	5225311
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	5227327	<50	<50	<50	50	5225311
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	5227327	<0.30	<0.30	<0.30	0.30	5225311
Acid Extractable Chromium (Cr)	mg/kg	9.1	8.6	7.5	5227327	9.3	<2.0	4.4	2.0	5225311
Acid Extractable Cobalt (Co)	mg/kg	2.1	2.3	<1.0	5227327	<1.0	<1.0	1.1	1.0	5225311
Acid Extractable Copper (Cu)	mg/kg	2.5	7.7	<2.0	5227327	3.2	<2.0	<2.0	2.0	5225311
Acid Extractable Iron (Fe)	mg/kg	15000	13000	6100	5227327	6900	6300	34000	50	5225311
Acid Extractable Lead (Pb)	mg/kg	2.5	5.8	6.8	5227327	3.8	1.6	3.4	0.50	5225311
Acid Extractable Lithium (Li)	mg/kg	3.5	4.7	<2.0	5227327	<2.0	<2.0	3.2	2.0	5225311
Acid Extractable Manganese (Mn)	mg/kg	160	220	46	5227327	64	80	340	2.0	5225311
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	5227327	<0.10	<0.10	<0.10	0.10	5225311
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Nickel (Ni)	mg/kg	3.8	3.2	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Rubidium (Rb)	mg/kg	5.5	11	3.3	5227327	2.0	10	8.5	2.0	5225311
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	5227327	<1.0	<1.0	<1.0	1.0	5225311
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	5227327	<0.50	<0.50	<0.50	0.50	5225311
Acid Extractable Strontium (Sr)	mg/kg	6.7	9.3	<5.0	5227327	6.4	<5.0	<5.0	5.0	5225311
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	5227327	<0.10	<0.10	<0.10	0.10	5225311
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	5227327	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Uranium (U)	mg/kg	0.25	0.27	0.37	5227327	0.44	<0.10	0.16	0.10	5225311
Acid Extractable Vanadium (V)	mg/kg	29	21	24	5227327	16	<2.0	23	2.0	5225311
Acid Extractable Zinc (Zn)	mg/kg	22	39	6.0	5227327	8.4	11	42	5.0	5225311

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI317	FJI319	FJI321	FJI322	FJI326	FJI327		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS58	CWT-SS60	CWT-SS62	CWT-SS63	CWT-SS67	CWT-SS68	RDL	QC Batch
Metals									
Acid Extractable Aluminum (Al)	mg/kg	25000	7800	6400	2300	2300	4300	10	5225311
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.2	<2.0	2.0	5225311
Acid Extractable Barium (Ba)	mg/kg	40	41	90	13	17	35	5.0	5225311
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50	5225311
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5225311
Acid Extractable Chromium (Cr)	mg/kg	19	11	5.0	3.7	3.5	7.3	2.0	5225311
Acid Extractable Cobalt (Co)	mg/kg	1.4	2.8	1.5	1.4	1.7	2.4	1.0	5225311
Acid Extractable Copper (Cu)	mg/kg	3.0	6.1	5.4	3.1	4.6	4.0	2.0	5225311
Acid Extractable Iron (Fe)	mg/kg	36000	20000	23000	6900	8800	11000	50	5225311
Acid Extractable Lead (Pb)	mg/kg	6.2	4.6	8.1	4.0	8.1	9.9	0.50	5225311
Acid Extractable Lithium (Li)	mg/kg	3.1	4.4	3.7	2.8	3.1	4.4	2.0	5225311
Acid Extractable Manganese (Mn)	mg/kg	240	260	510	71	95	140	2.0	5225311
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225311
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311
Acid Extractable Nickel (Ni)	mg/kg	<2.0	3.5	<2.0	2.5	3.0	3.5	2.0	5225311
Acid Extractable Rubidium (Rb)	mg/kg	8.1	6.7	8.1	3.2	3.8	7.4	2.0	5225311
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5225311
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5225311
Acid Extractable Strontium (Sr)	mg/kg	<5.0	7.8	6.4	7.8	6.3	8.2	5.0	5225311
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225311
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	2.4	<2.0	<2.0	2.0	5225311
Acid Extractable Uranium (U)	mg/kg	0.69	0.43	0.26	0.30	0.19	0.28	0.10	5225311
Acid Extractable Vanadium (V)	mg/kg	45	32	12	9.3	8.6	19	2.0	5225311
Acid Extractable Zinc (Zn)	mg/kg	42	29	54	12	23	25	5.0	5225311
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam Analytics - Environmental Testing Solutions

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJ1328		
Sampling Date		2017/10/13		
COC Number		N/A		
	UNITS	CWT-SS70	RDL	QC Batch
Metals				
Acid Extractable Aluminum (Al)	mg/kg	6400	10	5234500
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	5234500
Acid Extractable Arsenic (As)	mg/kg	<2.0	2.0	5234500
Acid Extractable Barium (Ba)	mg/kg	48	5.0	5234500
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5234500
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5234500
Acid Extractable Boron (B)	mg/kg	<50	50	5234500
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.30	5234500
Acid Extractable Chromium (Cr)	mg/kg	12	2.0	5234500
Acid Extractable Cobalt (Co)	mg/kg	2.5	1.0	5234500
Acid Extractable Copper (Cu)	mg/kg	8.9	2.0	5234500
Acid Extractable Iron (Fe)	mg/kg	11000	50	5234500
Acid Extractable Lead (Pb)	mg/kg	3.4	0.50	5234500
Acid Extractable Lithium (Li)	mg/kg	4.8	2.0	5234500
Acid Extractable Manganese (Mn)	mg/kg	140	2.0	5234500
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	5234500
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	5234500
Acid Extractable Nickel (Ni)	mg/kg	7.3	2.0	5234500
Acid Extractable Rubidium (Rb)	mg/kg	5.4	2.0	5234500
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	5234500
Acid Extractable Silver (Ag)	mg/kg	<0.50	0.50	5234500
Acid Extractable Strontium (Sr)	mg/kg	11	5.0	5234500
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5234500
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.0	5234500
Acid Extractable Uranium (U)	mg/kg	0.53	0.10	5234500
Acid Extractable Vanadium (V)	mg/kg	23	2.0	5234500
Acid Extractable Zinc (Zn)	mg/kg	130	5.0	5234500
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJI269	FJI279	FJI282	FJI291	FJI308	FJI311	FJI314		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS10	CWT-SS20	CWT-SS23	CWT-SS32	CWT-SS49	CWT-SS52	CWT-SS55	RDL	QC Batch

Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548
2-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Acenaphthene	mg/kg	<0.010	<0.010	0.056	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Acenaphthylene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Anthracene	mg/kg	<0.010	0.015	0.062	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(a)anthracene	mg/kg	<0.010	0.038	0.18	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(a)pyrene	mg/kg	<0.010	0.072	0.15	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(b)fluoranthene	mg/kg	<0.010	0.18	0.14	0.013	<0.010	<0.010	<0.010	0.010	5225548
Benzo(b,j)fluoranthene	mg/kg	<0.020	0.26	0.23	<0.020	<0.020	<0.020	<0.020	0.020	5222426
Benzo(g,h,i)perylene	mg/kg	<0.010	0.089	0.11	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(j)fluoranthene	mg/kg	<0.010	0.077	0.086	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(k)fluoranthene	mg/kg	<0.010	0.075	0.086	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Chrysene	mg/kg	<0.010	0.12	0.21	0.023	<0.010	<0.010	<0.010	0.010	5225548
Dibenz(a,h)anthracene	mg/kg	<0.010	0.025	0.024	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Fluoranthene	mg/kg	<0.010	0.074	0.47	0.025	<0.010	<0.010	<0.010	0.010	5225548
Fluorene	mg/kg	<0.010	<0.010	0.041	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.085	0.097	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Naphthalene	mg/kg	<0.010	<0.010	0.017	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Perylene	mg/kg	<0.010	0.020	0.038	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Phenanthrene	mg/kg	<0.010	0.022	0.34	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Pyrene	mg/kg	<0.010	0.066	0.33	0.022	<0.010	<0.010	<0.010	0.010	5225548

Surrogate Recovery (%)										
D10-Anthracene	%	93	92	92	102	95	95	91		5225548
D14-Terphenyl (FS)	%	97	99	99	109	100	101	107		5225548
D8-Acenaphthylene	%	90	90	94	94	94	95	87		5225548

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJI317	FJI320	FJI322	FJI325		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	CWT-SS58	CWT-SS61	CWT-SS63	CWT-SS66	RDL	QC Batch
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
2-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Acenaphthene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Acenaphthylene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Anthracene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(a)anthracene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(a)pyrene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	5222426
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Chrysene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Fluorene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Naphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Perylene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Phenanthrene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Pyrene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	5225548
Surrogate Recovery (%)							
D10-Anthracene	%	95	88	103	88		5225548
D14-Terphenyl (FS)	%	98	92	101	95		5225548
D8-Acenaphthylene	%	94	91	96	96		5225548
RDL = Reportable Detection Limit QC Batch = Quality Control Batch							

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJI270	FJI275	FJI293	FJI295	FJI326		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS11	CWT-SS16	CWT-SS34	CWT-SS36	CWT-SS67	RDL	QC Batch
Volatile Organics								
1,1,1-Trichloroethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,1,2,2-Tetrachloroethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,1,2-Trichloroethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,1-Dichloroethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,1-Dichloroethylene	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,2-Dichlorobenzene	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,2-Dichloroethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,2-Dichloropropane	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,3-Dichlorobenzene	ug/kg	<25	<25	<25	<25	<25	25	5226049
1,4-Dichlorobenzene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Benzene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Bromodichloromethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
Bromoform	ug/kg	<25	<25	<25	<25	<25	25	5226049
Bromomethane	ug/kg	<50	<50	<50	<50	<50	50	5226049
Carbon Tetrachloride	ug/kg	<25	<25	<25	<25	<25	25	5226049
Chlorobenzene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Chloroethane	ug/kg	<200	<200	<200	<200	<200	200	5226049
Chloroform	ug/kg	<25	<25	<25	<25	<25	25	5226049
cis-1,2-Dichloroethylene	ug/kg	<25	<25	<25	<25	<25	25	5226049
cis-1,3-Dichloropropene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Dibromochloromethane	ug/kg	<25	<25	<25	<25	<25	25	5226049
Ethylbenzene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Ethylene Dibromide	ug/kg	<25	<25	<25	<25	<25	25	5226049
Methylene Chloride(Dichloromethane)	ug/kg	<25	<25	<25	<25	<25	25	5226049
o-Xylene	ug/kg	<25	<25	<25	<25	<25	25	5226049
p+m-Xylene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Styrene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Tetrachloroethylene	ug/kg	<25	170	<25	<25	<25	25	5226049
Toluene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Total Xylenes	ug/kg	<50	<50	<50	<50	<50	50	5226049
trans-1,2-Dichloroethylene	ug/kg	<25	<25	<25	<25	<25	25	5226049
trans-1,3-Dichloropropene	ug/kg	<25	<25	<25	<25	<25	25	5226049
Trichloroethylene	ug/kg	<10	<10	<10	<10	<10	10	5226049
Trichlorofluoromethane (FREON 11)	ug/kg	<25	<25	<25	<25	<25	25	5226049
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJI270	FJI275	FJI293	FJI295	FJI326		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS11	CWT-SS16	CWT-SS34	CWT-SS36	CWT-SS67	RDL	QC Batch
Vinyl Chloride	ug/kg	<20	<20	<20	<20	<20	20	5226049
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	99	100	105	97	99		5226049
D10-o-Xylene	%	98 (1)	92 (1)	80	85	96		5226049
D4-1,2-Dichloroethane	%	99	96	102	98	96		5226049
D8-Toluene	%	96	97	97	96	97		5226049
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
(1) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.								

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJ1260	FJ1260		FJ1261		FJ1262		
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13		
COC Number		N/A	N/A		N/A		N/A		
	UNITS	CWT-SS1	CWT-SS1 Lab-Dup	RDL	CWT-SS2	RDL	CWT-SS3	RDL	QC Batch
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025		0.025	<0.025	0.025	<0.025	0.025	5225590
Toluene	mg/kg	<0.025		0.025	<0.025	0.025	<0.025	0.025	5225590
Ethylbenzene	mg/kg	<0.025		0.025	<0.025	0.025	<0.025	0.025	5225590
Total Xylenes	mg/kg	<0.050		0.050	<0.50	0.50	<0.050	0.050	5225590
C6 - C10 (less BTEX)	mg/kg	<2.5		2.5	<25	25	<2.5	2.5	5225590
>C10-C16 Hydrocarbons	mg/kg	75	48	10	140	100	<10	10	5225694
>C16-C21 Hydrocarbons	mg/kg	220	160	10	480	100	<10	10	5225694
>C21-<C32 Hydrocarbons	mg/kg	67	56	15	5900	150	20	15	5225694
Modified TPH (Tier1)	mg/kg	360		15	6500	150	20	15	5222287
Reached Baseline at C32	mg/kg	Yes		N/A	Yes	N/A	Yes	N/A	5225694
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		N/A	COMMENT (2)	N/A	COMMENT (3)	N/A	5225694
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	99	92		105		104		5225694
n-Dotriacontane - Extractable	%	109	110		127 (4)		111		5225694
Isobutylbenzene - Volatile	%	95 (5)			44 (6)		96		5225590
<p>RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable</p> <p>(1) One product in fuel / lube range. (2) Unidentified compound(s) in fuel / lube range. One product in lube oil range. (3) Possible lube oil fraction. (4) Elevated TEH RDL(s) due to sample dilution. (5) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (6) VPH surrogate not within acceptance limits. Analysis was repeated with similar results.</p>									

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI263	FJI264		FJI266	FJI266		FJI268		
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13		2017/10/13		
COC Number		N/A	N/A		N/A	N/A		N/A		
	UNITS	CWT-SS4	CWT-SS5	QC Batch	CWT-SS7	CWT-SS7 Lab-Dup	QC Batch	CWT-SS9	RDL	QC Batch

Petroleum Hydrocarbons

Benzene	mg/kg	<0.025	<0.025	5225590	<0.025		5230623	<0.025	0.025	5225590
Toluene	mg/kg	<0.025	<0.025	5225590	<0.025		5230623	<0.025	0.025	5225590
Ethylbenzene	mg/kg	<0.025	<0.025	5225590	<0.025		5230623	<0.025	0.025	5225590
Total Xylenes	mg/kg	<0.050	<0.050	5225590	<0.050		5230623	<0.050	0.050	5225590
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225590	<2.5		5230623	<2.5	2.5	5225590
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5225694	<10	<10	5233167	<10	10	5225694
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5225694	<10	<10	5233167	<10	10	5225694
>C21-<C32 Hydrocarbons	mg/kg	23	<15	5225694	29	27	5233167	<15	15	5225694
Modified TPH (Tier1)	mg/kg	23	<15	5222287	29		5227576	<15	15	5222287
Reached Baseline at C32	mg/kg	Yes	NA	5225694	Yes		5233167	NA	N/A	5225694
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	5225694	COMMENT (2)		5233167	NA	N/A	5225694

Surrogate Recovery (%)

Isobutylbenzene - Extractable	%	102	99	5225694	92	89	5233167	95		5225694
n-Dotriacontane - Extractable	%	110	113	5225694	100 (3)	100 (3)	5233167	102		5225694
Isobutylbenzene - Volatile	%	96	94	5225590	99		5230623	93		5225590

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

N/A = Not Applicable

(1) Possible lube oil fraction.

(2) Unidentified compound(s) in lube oil range. Possible lube oil fraction.

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

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI269	FJI270	FJI271	FJI271	FJI273		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS10	CWT-SS11	CWT-SS12	CWT-SS12 Lab-Dup	CWT-SS14	RDL	QC Batch

Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225590
C6 - C10 (less BTEX)	mg/kg	9.3	<2.5	<2.5	<2.5	<2.5	2.5	5225590
>C10-C16 Hydrocarbons	mg/kg	15	<10	<10		<10	10	5225694
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10		43	10	5225694
>C21-C32 Hydrocarbons	mg/kg	<15	<15	<15		270	15	5225694
Modified TPH (Tier1)	mg/kg	24	<15	<15		310	15	5222287
Reached Baseline at C32	mg/kg	Yes	NA	NA		Yes	N/A	5225694
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	NA		COMMENT (2)	N/A	5225694
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	104	96	105		99		5225694
n-Dotriacontane - Extractable	%	107	106	119		115		5225694
Isobutylbenzene - Volatile	%	94	96 (3)	79	79	93 (3)		5225590

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.
 (2) Lube oil fraction.
 (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		FJI274	FJI274		FJI275	FJI276	FJI277		
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A		N/A	N/A	N/A		
	UNITS	CWT-SS15	CWT-SS15 Lab-Dup	QC Batch	CWT-SS16	CWT-SS17	CWT-SS18	RDL	QC Batch

Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025		5225590	<0.025	<0.025	<0.025	0.025	5225590
Toluene	mg/kg	<0.025		5225590	<0.025	<0.025	<0.025	0.025	5225590
Ethylbenzene	mg/kg	<0.025		5225590	<0.025	<0.025	<0.025	0.025	5225590
Total Xylenes	mg/kg	<0.050		5225590	<0.050	<0.050	<0.050	0.050	5225590
C6 - C10 (less BTEX)	mg/kg	<2.5		5225590	<2.5	<2.5	<2.5	2.5	5225590
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5228077	22	23	<10	10	5225694
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5228077	78	120	<10	10	5225694
>C21-C32 Hydrocarbons	mg/kg	47	45	5228077	220	1100	48	15	5225694
Modified TPH (Tier1)	mg/kg	47		5222434	320	1200	48	15	5222434
Reached Baseline at C32	mg/kg	Yes		5228077	Yes	No	Yes	N/A	5225694
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		5228077	COMMENT (2)	COMMENT (3)	COMMENT (3)	N/A	5225694
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	102	103	5228077	99	98	91		5225694
n-Dotriacontane - Extractable	%	105	93	5228077	114	120	104		5225694
Isobutylbenzene - Volatile	%	93		5225590	93 (4)	89 (4)	95		5225590

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) Unidentified compound(s) in fuel / lube range. Lube oil fraction.
 (3) Lube oil fraction.
 (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		FJI278	FJI279	FJI280	FJI281	FJI282		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS19	CWT-SS20	CWT-SS21	CWT-SS22	CWT-SS23	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590
Toluene	mg/kg	<0.025	<0.025	0.23	<0.025	<0.025	0.025	5225590
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225590
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5225590
>C10-C16 Hydrocarbons	mg/kg	<10	<10	14	<10	26	10	5225694
>C16-C21 Hydrocarbons	mg/kg	<10	<10	52	38	100	10	5225694
>C21-<C32 Hydrocarbons	mg/kg	40	54	180	130	490	15	5225694
Modified TPH (Tier1)	mg/kg	40	54	240	170	620	15	5222434
Reached Baseline at C32	mg/kg	Yes	Yes	Yes	Yes	Yes	N/A	5225694
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	COMMENT (2)	COMMENT (3)	COMMENT (4)	N/A	5225694
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	97	97	100	110	109		5225694
n-Dotriacontane - Extractable	%	105	125	109 (5)	104	127		5225694
Isobutylbenzene - Volatile	%	79	94 (6)	89 (6)	93	84		5225590
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Possible lube oil fraction. (2) Unidentified compound(s) in fuel / lube range. Lube oil fraction. (3) One product in fuel / lube range. Possible lube oil fraction. (4) One product in fuel / lube range. Lube oil fraction. (5) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (6) 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		FJI283		FJI284		FJI285	FJI286		
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13		
COC Number		N/A		N/A		N/A	N/A		
	UNITS	CWT-SS24	QC Batch	CWT-SS25	QC Batch	CWT-SS26	CWT-SS27	RDL	QC Batch

Petroleum Hydrocarbons

Benzene	mg/kg	<0.025	5225590	<0.025	5225993	<0.025	<0.025	0.025	5225993
Toluene	mg/kg	<0.025	5225590	<0.025	5225993	<0.025	<0.025	0.025	5225993
Ethylbenzene	mg/kg	<0.025	5225590	<0.025	5225993	<0.025	<0.025	0.025	5225993
Total Xylenes	mg/kg	<0.050	5225590	<0.050	5225993	<0.050	<0.050	0.050	5225993
C6 - C10 (less BTEX)	mg/kg	<2.5	5225590	<2.5	5225993	<2.5	<2.5	2.5	5225993
>C10-C16 Hydrocarbons	mg/kg	<10	5225694	20	5225694	<10	<10	10	5228077
>C16-C21 Hydrocarbons	mg/kg	20	5225694	51	5225694	<10	<10	10	5228077
>C21-<C32 Hydrocarbons	mg/kg	150	5225694	120	5225694	32	26	15	5228077
Modified TPH (Tier1)	mg/kg	170	5222434	190	5222434	32	26	15	5222434
Reached Baseline at C32	mg/kg	Yes	5225694	Yes	5225694	Yes	Yes	N/A	5228077
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5225694	COMMENT (2)	5225694	COMMENT (3)	COMMENT (4)	N/A	5228077

Surrogate Recovery (%)

Isobutylbenzene - Extractable	%	94	5225694	106	5225694	74	95		5228077
n-Dotriacontane - Extractable	%	109	5225694	114	5225694	107	89		5228077
Isobutylbenzene - Volatile	%	84	5225590	100	5225993	109 (5)	106		5225993

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 N/A = Not Applicable
 (1) Lube oil fraction.
 (2) One product in fuel / lube range. Lube oil fraction.
 (3) Unidentified compound(s) in lube oil range.
 (4) Possible lube oil fraction.
 (5) 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		FJI288	FJI289	FJI290	FJI291	FJI292		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS29	CWT-SS30	CWT-SS31	CWT-SS32	CWT-SS33	RDL	QC Batch
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225993
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5225993
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	<10	10	5228077
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	<10	10	5228077
>C21-<C32 Hydrocarbons	mg/kg	<15	46	37	23	25	15	5228077
Modified TPH (Tier1)	mg/kg	<15	46	37	23	25	15	5222434
Reached Baseline at C32	mg/kg	NA	Yes	Yes	Yes	Yes	N/A	5228077
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	COMMENT (2)	COMMENT (2)	COMMENT (1)	N/A	5228077
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	98	94	97	94	69		5228077
n-Dotriacontane - Extractable	%	90	82	90 (3)	87	99		5228077
Isobutylbenzene - Volatile	%	103	106 (4)	106	108	108		5225993
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (2) Possible lube oil fraction. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (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		FJI293	FJI293			FJI295	FJI297	FJI298		
Sampling Date		2017/10/13	2017/10/13			2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A			N/A	N/A	N/A		
	UNITS	CWT-SS34	CWT-SS34 Lab-Dup	RDL	QC Batch	CWT-SS36	CWT-SS38	CWT-SS39	RDL	QC Batch

Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025		0.025	5225993	<0.025	<0.025	<0.025	0.025	5225993
Toluene	mg/kg	<0.025		0.025	5225993	<0.025	<0.025	<0.025	0.025	5225993
Ethylbenzene	mg/kg	<0.025		0.025	5225993	<0.025	<0.025	<0.025	0.025	5225993
Total Xylenes	mg/kg	<0.050		0.050	5225993	<0.050	<0.050	<0.050	0.050	5225993
C6 - C10 (less BTEX)	mg/kg	<2.5		2.5	5225993	<2.5	<2.5	<2.5	2.5	5225993
>C10-C16 Hydrocarbons	mg/kg	1000	1000	50	5225690	300	<10	<10	10	5228077
>C16-C21 Hydrocarbons	mg/kg	13000	12000	50	5225690	72	<10	<10	10	5228077
>C21-<C32 Hydrocarbons	mg/kg	14000	13000	75	5225690	27	<15	<15	15	5228077
Modified TPH (Tier1)	mg/kg	27000		75	5222434	400	<15	<15	15	5222434
Reached Baseline at C32	mg/kg	No		N/A	5225690	Yes	NA	NA	N/A	5228077
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		N/A	5225690	COMMENT (2)	NA	NA	N/A	5228077
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	102	121		5225690	95	90	85		5228077
n-Dotriacontane - Extractable	%	134 (3)	128 (4)		5225690	113	91 (5)	103 (5)		5228077
Isobutylbenzene - Volatile	%	64			5225993	108	99	116		5225993

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) One product in fuel oil range.
 (3) TEH surrogate(s) not within acceptance limits. Analysis was repeated with similar results. Elevated TEH RDL(s) due to sample dilution.
 (4) Elevated TEH RDL(s) due to sample dilution.
 (5) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI299	FJI300	FJI301	FJI301	FJI302	FJI303		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS40	CWT-SS41	CWT-SS42	CWT-SS42 Lab-Dup	CWT-SS43	CWT-SS44	RDL	QC Batch

Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225993
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5225993
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10		<10	<10	10	5228077
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10		<10	<10	10	5228077
>C21-<C32 Hydrocarbons	mg/kg	28	<15	<15		28	<15	15	5228077
Modified TPH (Tier1)	mg/kg	28	<15	<15		28	<15	15	5222434
Reached Baseline at C32	mg/kg	Yes	NA	NA		Yes	NA	N/A	5228077
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	NA		COMMENT (2)	NA	N/A	5228077
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	98	92	90		99	94		5228077
n-Dotriacontane - Extractable	%	98 (3)	95	92		99	100 (3)		5228077
Isobutylbenzene - Volatile	%	108	107	108 (4)	106 (4)	123 (4)	103 (4)		5225993

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable
 (1) Possible lube oil fraction.
 (2) Unidentified compound(s) in lube oil range.
 (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
 (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		FJI305	FJI307	FJI308		FJI309	FJI309		
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A		N/A	N/A		
	UNITS	CWT-SS46	CWT-SS48	CWT-SS49	QC Batch	CWT-SS50	CWT-SS50 Lab-Dup	RDL	QC Batch

Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	5225993	<0.025	<0.025	0.025	5225999
Toluene	mg/kg	<0.025	<0.025	<0.025	5225993	<0.025	<0.025	0.025	5225999
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	5225993	<0.025	<0.025	0.025	5225999
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	5225993	<0.050	<0.050	0.050	5225999
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	5225993	<2.5	<2.5	2.5	5225999
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	5228077	<10		10	5228077
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	5228077	<10		10	5228077
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	48	5228077	<15		15	5228077
Modified TPH (Tier1)	mg/kg	<15	<15	48	5222434	<15		15	5222434
Reached Baseline at C32	mg/kg	NA	NA	Yes	5228077	NA		N/A	5228077
Hydrocarbon Resemblance	mg/kg	NA	NA	COMMENT (1)	5228077	NA		N/A	5228077
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	89	87	90	5228077	92			5228077
n-Dotriacontane - Extractable	%	94 (2)	92 (2)	89 (2)	5228077	82 (2)			5228077
Isobutylbenzene - Volatile	%	109 (3)	109	104	5225993	106 (3)	106 (3)		5225999

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

(1) Possible lube oil fraction.

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

(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		FJI310	FJI311	FJI312	FJI313		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A		
	UNITS	CWT-SS51	CWT-SS52	CWT-SS53	CWT-SS54	RDL	QC Batch
Petroleum Hydrocarbons							
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5225999
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5225999
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5225999
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	5225999
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	2.5	5225999
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5225690
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5225690
>C21-<C32 Hydrocarbons	mg/kg	24	<15	18	<15	15	5225690
Modified TPH (Tier1)	mg/kg	24	<15	18	<15	15	5222434
Reached Baseline at C32	mg/kg	Yes	NA	Yes	NA	N/A	5225690
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	COMMENT (2)	NA	N/A	5225690
Surrogate Recovery (%)							
Isobutylbenzene - Extractable	%	96	96	111	100		5225690
n-Dotriacontane - Extractable	%	114	114	125	118		5225690
Isobutylbenzene - Volatile	%	102 (3)	109	100	108 (3)		5225999
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Possible lube oil fraction. (2) Unidentified compound(s) in lube oil range. (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		FJI314			FJI315		FJI316		
Sampling Date		2017/10/13			2017/10/13		2017/10/13		
COC Number		N/A			N/A		N/A		
	UNITS	CWT-SS55	RDL	QC Batch	CWT-SS56	QC Batch	CWT-SS57	RDL	QC Batch
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.050	0.050	5225999	<0.025	5225999	<0.025	0.025	5225999
Toluene	mg/kg	<0.050	0.050	5225999	<0.025	5225999	<0.025	0.025	5225999
Ethylbenzene	mg/kg	<0.050	0.050	5225999	<0.025	5225999	<0.025	0.025	5225999
Total Xylenes	mg/kg	<0.10	0.10	5225999	<0.050	5225999	<0.050	0.050	5225999
C6 - C10 (less BTEX)	mg/kg	<5.0	5.0	5225999	<2.5	5225999	<2.5	2.5	5225999
>C10-C16 Hydrocarbons	mg/kg	<10	10	5235292	<10	5225690	<10	10	5233173
>C16-C21 Hydrocarbons	mg/kg	<10	10	5235292	<10	5225690	<10	10	5233173
>C21-<C32 Hydrocarbons	mg/kg	140	15	5235292	<15	5225690	<15	15	5233173
Modified TPH (Tier1)	mg/kg	140	15	5222434	<15	5222434	<15	15	5222434
Reached Baseline at C32	mg/kg	Yes	N/A	5235292	NA	5225690	NA	N/A	5233173
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5235292	NA	5225690	NA	N/A	5233173
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	88		5235292	96	5225690	97		5233173
n-Dotriacontane - Extractable	%	126		5235292	118	5225690	111 (2)		5233173
Isobutylbenzene - Volatile	%	100 (3)		5225999	100	5225999	106 (4)		5225999
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (2) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (3) Elevated VPH RDL(s) due to limited sample. (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		FJI317	FJI318		FJI319	FJI320	FJI321		
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A		N/A	N/A	N/A		
	UNITS	CWT-SS58	CWT-SS59	QC Batch	CWT-SS60	CWT-SS61	CWT-SS62	RDL	QC Batch
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	<0.025	0.025	5225999
Toluene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	<0.025	0.025	5225999
Ethylbenzene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	<0.025	0.025	5225999
Total Xylenes	mg/kg	<0.050	<0.050	5225999	<0.050	<0.050	<0.050	0.050	5225999
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225999	<2.5	<2.5	<2.5	2.5	5225999
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5225690	<10	<10	<10	10	5225690
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5225690	<10	<10	<10	10	5225690
>C21-<C32 Hydrocarbons	mg/kg	<15	550	5225690	21	27	<15	15	5225690
Modified TPH (Tier1)	mg/kg	<15	550	5222434	21	27	<15	15	5222435
Reached Baseline at C32	mg/kg	NA	Yes	5225690	Yes	Yes	NA	N/A	5225690
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	5225690	COMMENT (1)	COMMENT (1)	NA	N/A	5225690
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	96	94	5225690	82	97	87		5225690
n-Dotriacontane - Extractable	%	122	119	5225690	115	117	118		5225690
Isobutylbenzene - Volatile	%	98 (2)	94	5225999	110	105 (2)	102 (2)		5225999
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (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		FJI322	FJI323		FJI325	FJI326	FJI327		
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A		N/A	N/A	N/A		
	UNITS	CWT-SS63	CWT-SS64	QC Batch	CWT-SS66	CWT-SS67	CWT-SS68	RDL	QC Batch

Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	<0.025	0.025	5230623
Toluene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	<0.025	0.025	5230623
Ethylbenzene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	<0.025	0.025	5230623
Total Xylenes	mg/kg	<0.050	<0.050	5225999	<0.050	<0.050	<0.050	0.050	5230623
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225999	<2.5	<2.5	<2.5	2.5	5230623
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5225690	<10	<10	<10	10	5225690
>C16-C21 Hydrocarbons	mg/kg	<10	14	5225690	<10	<10	<10	10	5225690
>C21-<C32 Hydrocarbons	mg/kg	<15	43	5225690	<15	<15	34	15	5225690
Modified TPH (Tier1)	mg/kg	<15	57	5222435	<15	<15	34	15	5222435
Reached Baseline at C32	mg/kg	NA	Yes	5225690	NA	NA	Yes	N/A	5225690
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	5225690	NA	NA	COMMENT (2)	N/A	5225690
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	83	87	5225690	84	73	87		5225690
n-Dotriacontane - Extractable	%	122	115	5225690	121 (3)	112	117		5225690
Isobutylbenzene - Volatile	%	104 (4)	103 (4)	5225999	99 (4)	93 (4)	90 (4)		5230623

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 N/A = Not Applicable
 (1) One product in fuel / lube range. Possible lube oil fraction.
 (2) Possible lube oil fraction.
 (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
 (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		FJI328		
Sampling Date		2017/10/13		
COC Number		N/A		
	UNITS	CWT-SS70	RDL	QC Batch
Petroleum Hydrocarbons				
Benzene	mg/kg	<0.025	0.025	5230623
Toluene	mg/kg	<0.025	0.025	5230623
Ethylbenzene	mg/kg	<0.025	0.025	5230623
Total Xylenes	mg/kg	<0.050	0.050	5230623
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5230623
>C10-C16 Hydrocarbons	mg/kg	<10	10	5233173
>C16-C21 Hydrocarbons	mg/kg	<10	10	5233173
>C21-<C32 Hydrocarbons	mg/kg	29	15	5233173
Modified TPH (Tier1)	mg/kg	29	15	5227576
Reached Baseline at C32	mg/kg	Yes	N/A	5233173
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5233173
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	97		5233173
n-Dotriacontane - Extractable	%	102		5233173
Isobutylbenzene - Volatile	%	93 (2)		5230623
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (2) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.				

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI264	FJI265		FJI266		FJI268	FJI269		
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13	2017/10/13		
COC Number		N/A	N/A		N/A		N/A	N/A		
	UNITS	CWT-SS5	CWT-SS6	QC Batch	CWT-SS7	QC Batch	CWT-SS9	CWT-SS10	RDL	QC Batch

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	<0.050	0.050	5227406
Aroclor 1221	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	<0.050	0.050	5227406
Aroclor 1232	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	<0.050	0.050	5227406
Aroclor 1248	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	<0.050	0.050	5227406
Aroclor 1242	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	<0.050	0.050	5227406
Aroclor 1254	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	<0.050	0.050	5227406
Aroclor 1260	ug/g	1.4	2.6	5225858	3.0	5232173	0.48	0.11	0.050	5227406
Calculated Total PCB	ug/g	1.4	2.6	5222428	3.0	5227483	0.48	0.11	0.050	5222428

Surrogate Recovery (%)										
Decachlorobiphenyl	%	96	92	5225858	130	5232173	95	90		5227406
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FJI270	FJI271	FJI274	FJI274	FJI276	FJI278	FJI280		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS11	CWT-SS12	CWT-SS15	CWT-SS15 Lab-Dup	CWT-SS17	CWT-SS19	CWT-SS21	RDL	QC Batch

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	1.4	0.050	5227406
Aroclor 1260	ug/g	<0.050	0.071	0.14	0.13	0.12	0.10	0.60	0.050	5227406
Calculated Total PCB	ug/g	<0.050	0.071	0.14		0.12	0.10	2.0	0.050	5222428

Surrogate Recovery (%)										
Decachlorobiphenyl	%	91	93	94	89	80	93	87		5227406
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI282	FJI284	FJI286	FJI288	FJI290	FJI292		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS23	CWT-SS25	CWT-SS27	CWT-SS29	CWT-SS31	CWT-SS33	RDL	QC Batch
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1260	ug/g	1.5	0.26	0.42	<0.050	2.0	0.15	0.050	5227406
Calculated Total PCB	ug/g	1.5	0.26	0.42	<0.050	2.0	0.15	0.050	5222428
Surrogate Recovery (%)									
Decachlorobiphenyl	%	85	90	92	93	92	94		5227406
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam ID		FJI293			FJI295	FJI301	FJI302	FJI303	FJI304		
Sampling Date		2017/10/13			2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A			N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS34	RDL	QC Batch	CWT-SS36	CWT-SS42	CWT-SS43	CWT-SS44	CWT-SS45	RDL	QC Batch
PCBs											
Aroclor 1016	ug/g	<0.15	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1221	ug/g	<0.15	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1232	ug/g	<0.15	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1248	ug/g	<0.15	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1242	ug/g	<0.15	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1254	ug/g	0.18	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Aroclor 1260	ug/g	<0.15	0.15	5230592	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406
Calculated Total PCB	ug/g				<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222428
Surrogate Recovery (%)											
Decachlorobiphenyl	%	68 (1)		5230592	83	89	91	91	95		5227406
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results. PCB:Unidentified (possibly halogenated) compounds detected. Elevated PCB RDL due to matrix / co-extractive interference.											

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI305	FJI306	FJI307	FJI308	FJI309	FJI310	FJI316		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A		
	UNITS	CWT-SS46	CWT-SS47	CWT-SS48	CWT-SS49	CWT-SS50	CWT-SS51	CWT-SS57	RDL	QC Batch

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222428

Surrogate Recovery (%)										
Decachlorobiphenyl	%	86	88 (1)	86	90	89	89	86		5228079

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) PCB:Unidentified (possibly halogenated) compounds detected.

Maxxam ID		FJI321	FJI321	FJI323	FJI325	FJI327		FJI328		
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13		
COC Number		N/A	N/A	N/A	N/A	N/A		N/A		
	UNITS	CWT-SS62	CWT-SS62 Lab-Dup	CWT-SS64	CWT-SS66	CWT-SS68	QC Batch	CWT-SS70	RDL	QC Batch

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	5228079	0.40	0.050	5232173
Calculated Total PCB	ug/g	<0.050		<0.050	<0.050	<0.050	5222428	0.40	0.050	5227483

Surrogate Recovery (%)										
Decachlorobiphenyl	%	88	90	91	87	85	5228079	106		5232173

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225548	D10-Anthracene	2017/10/25	86	50 - 130	96	50 - 130	101	%				
5225548	D14-Terphenyl (FS)	2017/10/25	97	50 - 130	104	50 - 130	114	%				
5225548	D8-Acenaphthylene	2017/10/25	86	50 - 130	93	50 - 130	108	%				
5225590	Isobutylbenzene - Volatile	2017/10/23	75	60 - 130	94	60 - 130	100	%				
5225690	Isobutylbenzene - Extractable	2017/10/25	121	30 - 130	97	30 - 130	98	%				
5225690	n-Dotriacontane - Extractable	2017/10/25	130 (1)	30 - 130	111	30 - 130	117	%				
5225694	Isobutylbenzene - Extractable	2017/10/23	103	30 - 130	95	30 - 130	95	%				
5225694	n-Dotriacontane - Extractable	2017/10/23	109	30 - 130	108	30 - 130	101	%				
5225858	Decachlorobiphenyl	2017/10/24	87	30 - 130	93	30 - 130	92	%				
5225993	Isobutylbenzene - Volatile	2017/10/24	105 (2)	60 - 130	101	60 - 130	97	%				
5225999	Isobutylbenzene - Volatile	2017/10/23	87 (2)	60 - 130	97	60 - 130	98	%				
5226049	4-Bromofluorobenzene	2017/10/25	101	60 - 140	102	60 - 140	100	%				
5226049	D10-o-Xylene	2017/10/25	95 (3)	60 - 130	102	60 - 130	96	%				
5226049	D4-1,2-Dichloroethane	2017/10/25	101	60 - 140	98	60 - 140	97	%				
5226049	D8-Toluene	2017/10/25	97	60 - 140	98	60 - 140	97	%				
5227406	Decachlorobiphenyl	2017/10/26	97	30 - 130	91	30 - 130	93	%				
5228077	Isobutylbenzene - Extractable	2017/10/26	99	30 - 130	103	30 - 130	89	%				
5228077	n-Dotriacontane - Extractable	2017/10/26	98	30 - 130	97	30 - 130	98	%				
5228079	Decachlorobiphenyl	2017/10/26	88	30 - 130	91	30 - 130	91	%				
5230592	Decachlorobiphenyl	2017/10/26	95	30 - 130	105	30 - 130	107	%				
5230623	Isobutylbenzene - Volatile	2017/10/26	79 (2)	60 - 130	88	60 - 130	90	%				
5232173	Decachlorobiphenyl	2017/10/27	100	30 - 130	102	30 - 130	102	%				
5233167	Isobutylbenzene - Extractable	2017/10/27	87	30 - 130	87	30 - 130	91	%				
5233167	n-Dotriacontane - Extractable	2017/10/27	105 (5)	30 - 130	96	30 - 130	103	%				
5233173	Isobutylbenzene - Extractable	2017/10/28	101	30 - 130	96	30 - 130	89	%				
5233173	n-Dotriacontane - Extractable	2017/10/28	104 (5)	30 - 130	111	30 - 130	105	%				
5235292	Isobutylbenzene - Extractable	2017/10/29	87	30 - 130	89	30 - 130	78	%				
5235292	n-Dotriacontane - Extractable	2017/10/29	107	30 - 130	109	30 - 130	92	%				
5222457	Moisture	2017/10/20							6.5	25		
5222587	Moisture	2017/10/20							5.7	25		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5222931	Moisture	2017/10/23							14	25		
5223371	Moisture	2017/10/23							5.3	25		
5225311	Acid Extractable Aluminum (Al)	2017/10/23					<10	mg/kg	14	35		
5225311	Acid Extractable Antimony (Sb)	2017/10/23	96	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Arsenic (As)	2017/10/23	98	75 - 125	101	75 - 125	<2.0	mg/kg	6.3	35		
5225311	Acid Extractable Barium (Ba)	2017/10/23	112	75 - 125	96	75 - 125	<5.0	mg/kg	6.8	35		
5225311	Acid Extractable Beryllium (Be)	2017/10/23	101	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Bismuth (Bi)	2017/10/23	105	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Boron (B)	2017/10/23	97	75 - 125	99	75 - 125	<50	mg/kg	NC	35		
5225311	Acid Extractable Cadmium (Cd)	2017/10/23	101	75 - 125	97	75 - 125	<0.30	mg/kg	NC	35		
5225311	Acid Extractable Chromium (Cr)	2017/10/23	106	75 - 125	101	75 - 125	<2.0	mg/kg	8.5	35		
5225311	Acid Extractable Cobalt (Co)	2017/10/23	106	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
5225311	Acid Extractable Copper (Cu)	2017/10/23	106	75 - 125	99	75 - 125	<2.0	mg/kg	11	35		
5225311	Acid Extractable Iron (Fe)	2017/10/23					<50	mg/kg	0.13	35		
5225311	Acid Extractable Lead (Pb)	2017/10/23	NC	75 - 125	96	75 - 125	<0.50	mg/kg	16	35		
5225311	Acid Extractable Lithium (Li)	2017/10/23	104	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Manganese (Mn)	2017/10/23	115	75 - 125	101	75 - 125	<2.0	mg/kg	15	35		
5225311	Acid Extractable Mercury (Hg)	2017/10/23	100	75 - 125	101	75 - 125	<0.10	mg/kg	6.1	35		
5225311	Acid Extractable Molybdenum (Mo)	2017/10/23	104	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Nickel (Ni)	2017/10/23	107	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Rubidium (Rb)	2017/10/23	104	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Selenium (Se)	2017/10/23	99	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
5225311	Acid Extractable Silver (Ag)	2017/10/23	103	75 - 125	100	75 - 125	<0.50	mg/kg	NC	35		
5225311	Acid Extractable Strontium (Sr)	2017/10/23	115	75 - 125	102	75 - 125	<5.0	mg/kg	11	35		
5225311	Acid Extractable Thallium (Tl)	2017/10/23	104	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5225311	Acid Extractable Tin (Sn)	2017/10/23	101	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Uranium (U)	2017/10/23	101	75 - 125	97	75 - 125	<0.10	mg/kg	6.8	35		
5225311	Acid Extractable Vanadium (V)	2017/10/23	106	75 - 125	99	75 - 125	<2.0	mg/kg	4.4	35		
5225311	Acid Extractable Zinc (Zn)	2017/10/23	96	75 - 125	99	75 - 125	<5.0	mg/kg	1.8	35		
5225548	1-Methylnaphthalene	2017/10/25	79	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225548	2-Methylnaphthalene	2017/10/25	83	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5225548	Acenaphthene	2017/10/25	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5225548	Acenaphthylene	2017/10/25	84	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50		
5225548	Anthracene	2017/10/25	88	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(a)anthracene	2017/10/25	89	30 - 130	97	30 - 130	<0.010	mg/kg	27	50		
5225548	Benzo(a)pyrene	2017/10/25	96	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(b)fluoranthene	2017/10/25	97	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(g,h,i)perylene	2017/10/25	100	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(j)fluoranthene	2017/10/25	99	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(k)fluoranthene	2017/10/25	96	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50		
5225548	Chrysene	2017/10/25	83	30 - 130	93	30 - 130	<0.010	mg/kg	22	50		
5225548	Dibenz(a,h)anthracene	2017/10/25	97	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50		
5225548	Fluoranthene	2017/10/25	91	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5225548	Fluorene	2017/10/25	87	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5225548	Indeno(1,2,3-cd)pyrene	2017/10/25	98	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5225548	Naphthalene	2017/10/25	78	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5225548	Perylene	2017/10/25	95	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		
5225548	Phenanthrene	2017/10/25	115	30 - 130	123	30 - 130	<0.010	mg/kg	NC	50		
5225548	Pyrene	2017/10/25	86	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5225554	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	1.6	35		
5225554	Acid Extractable Antimony (Sb)	2017/10/24	102	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Arsenic (As)	2017/10/24	97	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Barium (Ba)	2017/10/24	115	75 - 125	105	75 - 125	<5.0	mg/kg	5.5	35		
5225554	Acid Extractable Beryllium (Be)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Bismuth (Bi)	2017/10/24	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Boron (B)	2017/10/24	99	75 - 125	105	75 - 125	<50	mg/kg	NC	35		
5225554	Acid Extractable Cadmium (Cd)	2017/10/24	100	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5225554	Acid Extractable Chromium (Cr)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	5.1	35		
5225554	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	100	75 - 125	<1.0	mg/kg	26	35		
5225554	Acid Extractable Copper (Cu)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	1.8	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225554	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	12	35		
5225554	Acid Extractable Lead (Pb)	2017/10/24	101	75 - 125	102	75 - 125	<0.50	mg/kg	14	35		
5225554	Acid Extractable Lithium (Li)	2017/10/24	107	75 - 125	102	75 - 125	<2.0	mg/kg	12	35		
5225554	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	103	75 - 125	<2.0	mg/kg	21	35		
5225554	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35		
5225554	Acid Extractable Molybdenum (Mo)	2017/10/24	104	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Nickel (Ni)	2017/10/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	21	35		
5225554	Acid Extractable Rubidium (Rb)	2017/10/24	102	75 - 125	103	75 - 125	<2.0	mg/kg	14	35		
5225554	Acid Extractable Selenium (Se)	2017/10/24	97	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
5225554	Acid Extractable Silver (Ag)	2017/10/24	100	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35		
5225554	Acid Extractable Strontium (Sr)	2017/10/24	110	75 - 125	104	75 - 125	<5.0	mg/kg	16	35		
5225554	Acid Extractable Thallium (Tl)	2017/10/24	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5225554	Acid Extractable Tin (Sn)	2017/10/24	101	75 - 125	111	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Uranium (U)	2017/10/24	101	75 - 125	100	75 - 125	<0.10	mg/kg	33	35		
5225554	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	101	75 - 125	<2.0	mg/kg	6.1	35		
5225554	Acid Extractable Zinc (Zn)	2017/10/24	105	75 - 125	101	75 - 125	<5.0	mg/kg	11	35		
5225590	Benzene	2017/10/23	90	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		
5225590	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50		
5225590	Ethylbenzene	2017/10/23	101	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5225590	Toluene	2017/10/23	98	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5225590	Total Xylenes	2017/10/23	101	60 - 130	93	60 - 140	<0.050	mg/kg	NC	50		
5225690	>C10-C16 Hydrocarbons	2017/10/26	NC	30 - 130	101	30 - 130	<10	mg/kg	1.5	50		
5225690	>C16-C21 Hydrocarbons	2017/10/26	NC	30 - 130	97	30 - 130	<10	mg/kg	8.0	50		
5225690	>C21-<C32 Hydrocarbons	2017/10/26	NC	30 - 130	121	30 - 130	<15	mg/kg	5.0	50		
5225694	>C10-C16 Hydrocarbons	2017/10/23	84	30 - 130	99	30 - 130	<10	mg/kg	43	50		
5225694	>C16-C21 Hydrocarbons	2017/10/23	75	30 - 130	88	30 - 130	<10	mg/kg	27	50		
5225694	>C21-<C32 Hydrocarbons	2017/10/23	86	30 - 130	103	30 - 130	<15	mg/kg	17	50		
5225858	Aroclor 1016	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1221	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1232	2017/10/24					<0.050	ug/g	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225858	Aroclor 1242	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1248	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1254	2017/10/24	84	30 - 130	98	30 - 130	<0.050	ug/g	NC	50		
5225858	Aroclor 1260	2017/10/24					<0.050	ug/g	NC	50		
5225993	Benzene	2017/10/24	85	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50		
5225993	C6 - C10 (less BTEX)	2017/10/24					<2.5	mg/kg	NC	50		
5225993	Ethylbenzene	2017/10/24	90	60 - 130	99	60 - 140	<0.025	mg/kg	NC	50		
5225993	Toluene	2017/10/24	83	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50		
5225993	Total Xylenes	2017/10/24	87	60 - 130	99	60 - 140	<0.050	mg/kg	NC	50		
5225999	Benzene	2017/10/23	82	60 - 130	92	60 - 140	<0.025	mg/kg	NC	50		
5225999	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50		
5225999	Ethylbenzene	2017/10/23	88	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5225999	Toluene	2017/10/23	80	60 - 130	92	60 - 140	<0.025	mg/kg	NC	50		
5225999	Total Xylenes	2017/10/23	97	60 - 130	94	60 - 140	<0.050	mg/kg	NC	50		
5226049	1,1,1-Trichloroethane	2017/10/25	108	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	1,1,2,2-Tetrachloroethane	2017/10/25	105	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	1,1,2-Trichloroethane	2017/10/25	105	60 - 140	106	60 - 130	<25	ug/kg	NC	50		
5226049	1,1-Dichloroethane	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	1,1-Dichloroethylene	2017/10/25	103	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	1,2-Dichlorobenzene	2017/10/25	93	60 - 140	97	60 - 130	<25	ug/kg	NC	50		
5226049	1,2-Dichloroethane	2017/10/25	101	60 - 140	103	60 - 130	<25	ug/kg	NC	50		
5226049	1,2-Dichloropropane	2017/10/25	102	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	1,3-Dichlorobenzene	2017/10/25	94	60 - 140	100	60 - 130	<25	ug/kg	NC	50		
5226049	1,4-Dichlorobenzene	2017/10/25	92	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5226049	Benzene	2017/10/25	102	60 - 140	107	60 - 130	<25	ug/kg	NC	50		
5226049	Bromodichloromethane	2017/10/25	106	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5226049	Bromoform	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5226049	Bromomethane	2017/10/25	92	60 - 140	104	60 - 140	<50	ug/kg	NC	50		
5226049	Carbon Tetrachloride	2017/10/25	107	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	Chlorobenzene	2017/10/25	99	60 - 140	104	60 - 130	<25	ug/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5226049	Chloroethane	2017/10/25	92	60 - 140	100	60 - 140	<200	ug/kg	NC	50		
5226049	Chloroform	2017/10/25	99	60 - 140	101	60 - 130	<25	ug/kg	NC	50		
5226049	cis-1,2-Dichloroethylene	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	cis-1,3-Dichloropropene	2017/10/25	100	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5226049	Dibromochloromethane	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5226049	Ethylbenzene	2017/10/25	97	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	Ethylene Dibromide	2017/10/25	103	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	Methylene Chloride(Dichloromethane)	2017/10/25	111	60 - 140	115	60 - 130	<25	ug/kg	NC	50		
5226049	o-Xylene	2017/10/25	99	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5226049	p+m-Xylene	2017/10/25	97	60 - 140	106	60 - 130	<25	ug/kg	NC	50		
5226049	Styrene	2017/10/25	84	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5226049	Tetrachloroethylene	2017/10/25	109	60 - 140	117	60 - 130	<25	ug/kg	NC	50		
5226049	Toluene	2017/10/25	100	60 - 140	107	60 - 130	<25	ug/kg	NC	50		
5226049	Total Xylenes	2017/10/25					<50	ug/kg	NC	50		
5226049	trans-1,2-Dichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<25	ug/kg	NC	50		
5226049	trans-1,3-Dichloropropene	2017/10/25	88	60 - 140	94	60 - 130	<25	ug/kg	NC	50		
5226049	Trichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<10	ug/kg	NC	50		
5226049	Trichlorofluoromethane (FREON 11)	2017/10/25	90	60 - 140	105	60 - 140	<25	ug/kg	NC	50		
5226049	Vinyl Chloride	2017/10/25	95	60 - 140	109	60 - 140	<20	ug/kg	NC	50		
5227327	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	0.95	35		
5227327	Acid Extractable Antimony (Sb)	2017/10/24	98	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Arsenic (As)	2017/10/24	100	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Barium (Ba)	2017/10/24	NC	75 - 125	100	75 - 125	<5.0	mg/kg	2.5	35		
5227327	Acid Extractable Beryllium (Be)	2017/10/24	105	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Bismuth (Bi)	2017/10/24	102	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Boron (B)	2017/10/24	101	75 - 125	108	75 - 125	<50	mg/kg	NC	35		
5227327	Acid Extractable Cadmium (Cd)	2017/10/24	102	75 - 125	102	75 - 125	<0.30	mg/kg	3.3	35		
5227327	Acid Extractable Chromium (Cr)	2017/10/24	98	75 - 125	102	75 - 125	<2.0	mg/kg	9.3	35		
5227327	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	104	75 - 125	<1.0	mg/kg	17	35		
5227327	Acid Extractable Copper (Cu)	2017/10/24	89	75 - 125	104	75 - 125	<2.0	mg/kg	18	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5227327	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	1.5	35		
5227327	Acid Extractable Lead (Pb)	2017/10/24	NC	75 - 125	102	75 - 125	<0.50	mg/kg	15	35		
5227327	Acid Extractable Lithium (Li)	2017/10/24	103	75 - 125	102	75 - 125	<2.0	mg/kg	1.8	35		
5227327	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	105	75 - 125	<2.0	mg/kg	1.2	35		
5227327	Acid Extractable Mercury (Hg)	2017/10/24	98	75 - 125	106	75 - 125	<0.10	mg/kg	NC	35		
5227327	Acid Extractable Molybdenum (Mo)	2017/10/24	99	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Nickel (Ni)	2017/10/24	101	75 - 125	104	75 - 125	<2.0	mg/kg	8.7	35		
5227327	Acid Extractable Rubidium (Rb)	2017/10/24	100	75 - 125	99	75 - 125	<2.0	mg/kg	0.70	35		
5227327	Acid Extractable Selenium (Se)	2017/10/24	104	75 - 125	104	75 - 125	<1.0	mg/kg	NC	35		
5227327	Acid Extractable Silver (Ag)	2017/10/24	106	75 - 125	104	75 - 125	<0.50	mg/kg	NC	35		
5227327	Acid Extractable Strontium (Sr)	2017/10/24	106	75 - 125	102	75 - 125	<5.0	mg/kg	3.1	35		
5227327	Acid Extractable Thallium (Tl)	2017/10/24	102	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5227327	Acid Extractable Tin (Sn)	2017/10/24	NC	75 - 125	107	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Uranium (U)	2017/10/24	105	75 - 125	105	75 - 125	<0.10	mg/kg	15	35		
5227327	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	102	75 - 125	<2.0	mg/kg	10	35		
5227327	Acid Extractable Zinc (Zn)	2017/10/24	NC	75 - 125	105	75 - 125	<5.0	mg/kg	57 (4)	35		
5227329	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	2.1	35		
5227329	Acid Extractable Antimony (Sb)	2017/10/24	103	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Arsenic (As)	2017/10/24	101	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Barium (Ba)	2017/10/24	109	75 - 125	103	75 - 125	<5.0	mg/kg	11	35		
5227329	Acid Extractable Beryllium (Be)	2017/10/24	109	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Bismuth (Bi)	2017/10/24	107	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Boron (B)	2017/10/24	106	75 - 125	106	75 - 125	<50	mg/kg	NC	35		
5227329	Acid Extractable Cadmium (Cd)	2017/10/24	102	75 - 125	103	75 - 125	<0.30	mg/kg	4.7	35		
5227329	Acid Extractable Chromium (Cr)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	4.1	35		
5227329	Acid Extractable Cobalt (Co)	2017/10/24	106	75 - 125	103	75 - 125	<1.0	mg/kg	0.031	35		
5227329	Acid Extractable Copper (Cu)	2017/10/24	105	75 - 125	101	75 - 125	<2.0	mg/kg	1.2	35		
5227329	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	1.7	35		
5227329	Acid Extractable Lead (Pb)	2017/10/24	104	75 - 125	100	75 - 125	<0.50	mg/kg	23	35		
5227329	Acid Extractable Lithium (Li)	2017/10/24	104	75 - 125	101	75 - 125	<2.0	mg/kg	13	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5227329	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	104	75 - 125	<2.0	mg/kg	2.4	35		
5227329	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5227329	Acid Extractable Molybdenum (Mo)	2017/10/24	103	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Nickel (Ni)	2017/10/24	107	75 - 125	104	75 - 125	<2.0	mg/kg	10	35		
5227329	Acid Extractable Rubidium (Rb)	2017/10/24	104	75 - 125	100	75 - 125	<2.0	mg/kg	0.87	35		
5227329	Acid Extractable Selenium (Se)	2017/10/24	104	75 - 125	104	75 - 125	<1.0	mg/kg	NC	35		
5227329	Acid Extractable Silver (Ag)	2017/10/24	104	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35		
5227329	Acid Extractable Strontium (Sr)	2017/10/24	108	75 - 125	99	75 - 125	<5.0	mg/kg	3.2	35		
5227329	Acid Extractable Thallium (Tl)	2017/10/24	106	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5227329	Acid Extractable Tin (Sn)	2017/10/24	99	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Uranium (U)	2017/10/24	106	75 - 125	102	75 - 125	<0.10	mg/kg	7.4	35		
5227329	Acid Extractable Vanadium (V)	2017/10/24	102	75 - 125	102	75 - 125	<2.0	mg/kg	4.2	35		
5227329	Acid Extractable Zinc (Zn)	2017/10/24	NC	75 - 125	104	75 - 125	<5.0	mg/kg	4.5	35		
5227406	Aroclor 1016	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1221	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1232	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1242	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1248	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1254	2017/10/26	109	30 - 130	103	30 - 130	<0.050	ug/g	NC	50		
5227406	Aroclor 1260	2017/10/26					<0.050	ug/g	7.4	50		
5228077	>C10-C16 Hydrocarbons	2017/10/26	102	30 - 130	88	30 - 130	<10	mg/kg	NC	50		
5228077	>C16-C21 Hydrocarbons	2017/10/26	76	30 - 130	82	30 - 130	<10	mg/kg	NC	50		
5228077	>C21-<C32 Hydrocarbons	2017/10/26	105	30 - 130	107	30 - 130	<15	mg/kg	4.1	50		
5228079	Aroclor 1016	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1221	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1232	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1242	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1248	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1254	2017/10/26	96	30 - 130	99	30 - 130	<0.050	ug/g	NC	50		
5228079	Aroclor 1260	2017/10/26					<0.050	ug/g	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5230118	Moisture	2017/10/25							6.8	25		
5230592	Aroclor 1016	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1221	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1232	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1242	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1248	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1254	2017/10/26	74	30 - 130	109	30 - 130	<0.050	ug/g	NC	50		
5230592	Aroclor 1260	2017/10/26					<0.050	ug/g	NC	50		
5230623	Benzene	2017/10/26	101	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		
5230623	C6 - C10 (less BTEX)	2017/10/26					<2.5	mg/kg	NC	50		
5230623	Ethylbenzene	2017/10/26	102	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		
5230623	Toluene	2017/10/26	99	60 - 130	83	60 - 140	<0.025	mg/kg	NC	50		
5230623	Total Xylenes	2017/10/26	99	60 - 130	84	60 - 140	<0.050	mg/kg	NC	50		
5230918	Total Organic Carbon	2017/10/29					<500	mg/kg	3.0	35	105	75 - 125
5232173	Aroclor 1016	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1221	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1232	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1242	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1248	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1254	2017/10/27	105	30 - 130	108	30 - 130	<0.050	ug/g	NC	50		
5232173	Aroclor 1260	2017/10/27					<0.050	ug/g	NC	50		
5233167	>C10-C16 Hydrocarbons	2017/10/27	92	30 - 130	90	30 - 130	<10	mg/kg	NC	50		
5233167	>C16-C21 Hydrocarbons	2017/10/27	91	30 - 130	89	30 - 130	<10	mg/kg	NC	50		
5233167	>C21-<C32 Hydrocarbons	2017/10/27	102	30 - 130	105	30 - 130	<15	mg/kg	6.3	50		
5233173	>C10-C16 Hydrocarbons	2017/10/28	98	30 - 130	94	30 - 130	<10	mg/kg	NC	50		
5233173	>C16-C21 Hydrocarbons	2017/10/28	99	30 - 130	90	30 - 130	<10	mg/kg	NC	50		
5233173	>C21-<C32 Hydrocarbons	2017/10/28	115	30 - 130	116	30 - 130	<15	mg/kg	NC	50		
5234500	Acid Extractable Aluminum (Al)	2017/10/27					<10	mg/kg	0.37	35		
5234500	Acid Extractable Antimony (Sb)	2017/10/27	92	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Arsenic (As)	2017/10/27	110	75 - 125	102	75 - 125	<2.0	mg/kg	30	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5234500	Acid Extractable Barium (Ba)	2017/10/27	NC	75 - 125	97	75 - 125	<5.0	mg/kg	2.8	35		
5234500	Acid Extractable Beryllium (Be)	2017/10/27	101	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Bismuth (Bi)	2017/10/27	103	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Boron (B)	2017/10/27	97	75 - 125	98	75 - 125	<50	mg/kg	NC	35		
5234500	Acid Extractable Cadmium (Cd)	2017/10/27	102	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5234500	Acid Extractable Chromium (Cr)	2017/10/27	102	75 - 125	100	75 - 125	<2.0	mg/kg	0.18	35		
5234500	Acid Extractable Cobalt (Co)	2017/10/27	100	75 - 125	99	75 - 125	<1.0	mg/kg	6.1	35		
5234500	Acid Extractable Copper (Cu)	2017/10/27	100	75 - 125	98	75 - 125	<2.0	mg/kg	3.2	35		
5234500	Acid Extractable Iron (Fe)	2017/10/27					<50	mg/kg	1.4	35		
5234500	Acid Extractable Lead (Pb)	2017/10/27	102	75 - 125	99	75 - 125	<0.50	mg/kg	1.5	35		
5234500	Acid Extractable Lithium (Li)	2017/10/27	104	75 - 125	100	75 - 125	<2.0	mg/kg	4.4	35		
5234500	Acid Extractable Manganese (Mn)	2017/10/27	NC	75 - 125	102	75 - 125	<2.0	mg/kg	9.6	35		
5234500	Acid Extractable Mercury (Hg)	2017/10/27	100	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5234500	Acid Extractable Molybdenum (Mo)	2017/10/27	103	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Nickel (Ni)	2017/10/27	102	75 - 125	101	75 - 125	<2.0	mg/kg	6.6	35		
5234500	Acid Extractable Rubidium (Rb)	2017/10/27	102	75 - 125	102	75 - 125	<2.0	mg/kg	4.0	35		
5234500	Acid Extractable Selenium (Se)	2017/10/27	103	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
5234500	Acid Extractable Silver (Ag)	2017/10/27	105	75 - 125	100	75 - 125	<0.50	mg/kg	NC	35		
5234500	Acid Extractable Strontium (Sr)	2017/10/27	104	75 - 125	101	75 - 125	<5.0	mg/kg	24	35		
5234500	Acid Extractable Thallium (Tl)	2017/10/27	104	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35		
5234500	Acid Extractable Tin (Sn)	2017/10/27	102	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Uranium (U)	2017/10/27	100	75 - 125	98	75 - 125	<0.10	mg/kg	1.4	35		
5234500	Acid Extractable Vanadium (V)	2017/10/27	102	75 - 125	98	75 - 125	<2.0	mg/kg	3.5	35		
5234500	Acid Extractable Zinc (Zn)	2017/10/27	107	75 - 125	104	75 - 125	<5.0	mg/kg	4.0	35		
5235292	>C10-C16 Hydrocarbons	2017/10/29	91	30 - 130	94	30 - 130	<10	mg/kg	NC	50		
5235292	>C16-C21 Hydrocarbons	2017/10/29	92	30 - 130	93	30 - 130	<10	mg/kg	NC	50		
5235292	>C21-C32 Hydrocarbons	2017/10/29	104	30 - 130	108	30 - 130	<15	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5235625	Moisture	2017/10/28							6.0	25		

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

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

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

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

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

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

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

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

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

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

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

(4) Poor RPD due to sample inhomogeneity. Results confirmed by repeat digestion and analysis.

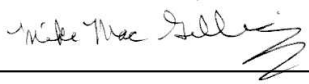
(5) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

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



Mike MacGillivray, Scientific Specialist (Inorganics)

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 Analytics International Corporation - Bedford, Nova Scotia



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551711798
Customer ID: 55PSSC69
Customer PO: JOB # B7N2746
Project ID:

Attn: Heather Macumber
Maxxam Analytics, Inc.
200 Bluewater Road
Suite 105
Bedford, NS B4B 1G9

Phone: (902) 832-4852
Fax:
Collected: 10/13/2017
Received: 10/24/2017
Analyzed: 10/27/2017

Proj: JOB # B7N2746

Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: FJI267-02R/CWT-SS8

Lab Sample ID: 551711798-0001

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	10%	90%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI272-02R/CWT-SS13

Lab Sample ID: 551711798-0002

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	0%	100%	<1% Chrysotile	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI287-02R/CWT-SS28

Lab Sample ID: 551711798-0003

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	10%	90%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI294-02R/CWT-SS35

Lab Sample ID: 551711798-0004

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	6%	94%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI296-02R/CWT-SS37

Lab Sample ID: 551711798-0005

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	6%	94%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI324-02R/CWT-SS65

Lab Sample ID: 551711798-0006

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	4%	96%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551711798
Customer ID: 55PSSC69
Customer PO: JOB # B7N2746
Project ID:

**Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS
Act - Asbestos in the Workplace via EPA600/R-93/116 Method**

Analyst(s):

Natalie D'Amico PLM (6)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 10/27/2017 11:04:50

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/03
 Report #: R4822198
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2746

Received: 2017/10/19, 10:14

Sample Matrix: Soil
 # Samples Received: 69

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (soil)	11	N/A	2017/10/28	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	4	N/A	2017/11/03	N/A	Auto Calc.
TEH in Soil (PIRI) (3)	1	2017/10/20	2017/10/23	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	13	2017/10/23	2017/10/23	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	2	2017/10/23	2017/10/24	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	4	2017/10/23	2017/10/25	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	15	2017/10/23	2017/10/26	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	1	2017/10/23	2017/10/27	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	16	2017/10/24	2017/10/26	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	4	2017/10/24	2017/10/27	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	1	2017/10/26	2017/10/27	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	2	2017/10/26	2017/10/28	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	1	2017/10/27	2017/10/29	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	3	2017/10/28	2017/10/31	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (3)	3	2017/10/28	2017/11/01	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	12	2017/10/23	2017/10/23	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	3	2017/10/23	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	19	2017/10/24	2017/10/24	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	2	2017/10/27	2017/10/27	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	6	2017/10/30	2017/10/30	ATL SOP 00058	EPA 6020A R1 m
Moisture	39	N/A	2017/10/20	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	22	N/A	2017/10/23	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	2	N/A	2017/10/25	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	6	N/A	2017/10/28	ATL SOP 00001	OMOE Handbook 1983 m
OC Pesticides (Selected) & PCB (1, 4)	4	2017/10/30	2017/10/31	CAM SOP-00307	SW846 8081, 8082
OC Pesticides Summed Parameters (1)	3	N/A	2017/10/24	CAM SOP-00307	EPA 8081/8082 m
OC Pesticides Summed Parameters (1)	1	N/A	2017/10/25	CAM SOP-00307	EPA 8081/8082 m
PAH Compounds by GCMS (SIM) (3)	11	2017/10/23	2017/10/27	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (3)	4	2017/10/27	2017/11/02	ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (3)	2	2017/10/23	2017/10/24	ATL SOP 00106	EPA 8082A 2007 m

Your P.O. #: 121414915.300.002
 Your Project #: FORMER MILLITARY SITE
 Site Location: CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/03
 Report #: R4822198
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2746

Received: 2017/10/19, 10:14

Sample Matrix: Soil
 # Samples Received: 69

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
PCBs in soil by GC/ECD (3)	30	2017/10/24	2017/10/26	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (3)	1	2017/10/25	2017/10/26	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (3)	2	2017/10/26	2017/10/27	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (3)	4	2017/10/27	2017/11/01	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	2	N/A	2017/10/24	N/A	Auto Calc.
PCB Aroclor sum (soil)	30	N/A	2017/10/26	N/A	Auto Calc.
PCB Aroclor sum (soil)	2	N/A	2017/10/27	N/A	Auto Calc.
PCB Aroclor sum (soil)	1	N/A	2017/10/31	N/A	Auto Calc.
PCB Aroclor sum (soil)	4	N/A	2017/11/01	N/A	Auto Calc.
Asbestos (bulk) by PLM (Sub fr Bedford) (2)	6	N/A	2017/10/27		
Total Organic Carbon in Soil (1)	3	N/A	2017/10/29	CAM SOP-00468	BCMOE TOC Aug 2014
ModTPH (T1) Calc. for Soil	15	N/A	2017/10/24	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	4	N/A	2017/10/25	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	1	N/A	2017/10/26	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	37	N/A	2017/10/27	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	2	N/A	2017/10/29	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	1	N/A	2017/10/30	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	6	N/A	2017/11/01	N/A	Atl. RBCA v3.1 m
VOCs in Soil - Field Preserved (5)	5	N/A	2017/10/25	ATL SOP 00133	EPA 8260C R3 m
VOCs in Soil - Field Preserved (5)	1	N/A	2017/11/01	ATL SOP 00133	EPA 8260C R3 m
VPH in Soil (PIRI) - Field Preserved (5)	13	N/A	2017/10/23	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (5)	41	N/A	2017/10/24	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (5)	1	N/A	2017/10/25	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (5)	5	N/A	2017/10/26	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (5)	6	N/A	2017/10/31	ATL SOP 00119	Atl. RBCA v3.1 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

Your P.O. #: 121414915.300.002
Your Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/03
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Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7N2746

Received: 2017/10/19, 10:14

accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported: unless indicated otherwise, associated sample data are not blank corrected.

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

- (1) This test was performed by Maxxam Analytics Mississauga
- (2) This test was performed by Sub Bedford to EMSL
- (3) Soils are reported on a dry weight basis unless otherwise specified.
- (4) Chlordane (Total) = Alpha Chlordane + Gamma Chlordane
- (5) 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.

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		FJI260	FJI261	FJI262	FJI263	FJI264	FJI265			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS1	CWT-SS2	CWT-SS3	CWT-SS4	CWT-SS5	CWT-SS6	RDL	QC Batch	MDL

Inorganics										
Moisture	%	18	14	9.8	9.2	10	14	1.0	5222457	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FJI266		FJI267		FJI268	FJI269	FJI270			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A	N/A			
	UNITS	CWT-SS7	QC Batch	CWT-SS8	QC Batch	CWT-SS9	CWT-SS10	CWT-SS11	RDL	QC Batch	MDL

Inorganics											
Moisture	%	25	5230118	91	5235625	16	14	23	1.0	5222457	0.20
Subcontracted Analysis											
Subcontract Parameter	N/A			ATTACHED	5224436				N/A		N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

Maxxam ID		FJI271		FJI272		FJI273	FJI274	FJI275			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A	N/A			
	UNITS	CWT-SS12	QC Batch	CWT-SS13	QC Batch	CWT-SS14	CWT-SS15	CWT-SS16	RDL	QC Batch	MDL

Inorganics											
Moisture	%	25	5222457	11	5235625	13	24	25	1.0	5222457	0.20
Total Organic Carbon	mg/kg					8300			500	5230918	100
Subcontracted Analysis											
Subcontract Parameter	N/A			ATTACHED	5224436				N/A		N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

Maxxam ID		FJI276	FJI277	FJI278	FJI279	FJI280	FJI281			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS17	CWT-SS18	CWT-SS19	CWT-SS20	CWT-SS21	CWT-SS22	RDL	QC Batch	MDL

Inorganics										
Moisture	%	17	18	22	19	22	16	1.0	5222457	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI282	FJI283	FJI284		FJI285	FJI285	FJI286			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A		N/A	N/A	N/A			
	UNITS	CWT-SS23	CWT-SS24	CWT-SS25	QC Batch	CWT-SS26	CWT-SS26 Lab-Dup	CWT-SS27	RDL	QC Batch	MDL

Inorganics											
Moisture	%	17	12	13	5222931	15	15	22	1.0	5223371	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate											

Maxxam ID		FJI287		FJI288	FJI289		FJI290	FJI291			
Sampling Date		2017/10/13		2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A	N/A		N/A	N/A			
	UNITS	CWT-SS28	QC Batch	CWT-SS29	CWT-SS30	QC Batch	CWT-SS31	CWT-SS32	RDL	QC Batch	MDL

Inorganics											
Moisture	%	19	5235625	6.7	17	5223371	21	21	1.0	522587	0.20
Subcontracted Analysis											
Subcontract Parameter	N/A	ATTACHED	5224436						N/A		N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

Maxxam ID		FJI292	FJI293		FJI294		FJI295				
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13				
COC Number		N/A	N/A		N/A		N/A				
	UNITS	CWT-SS33	CWT-SS34	QC Batch	CWT-SS35	QC Batch	CWT-SS36	RDL	QC Batch	MDL	

Inorganics											
Moisture	%	24	13	5222587	30	5235625	31	1.0	5222587	0.20	
Subcontracted Analysis											
Subcontract Parameter	N/A				ATTACHED	5224436		N/A		N/A	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

Maxxam ID		FJI296		FJI297	FJI298	FJI299	FJI300	FJI301			
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS37	QC Batch	CWT-SS38	CWT-SS39	CWT-SS40	CWT-SS41	CWT-SS42	RDL	QC Batch	MDL

Inorganics											
Moisture	%	46	5235625	12	21	25	16	14	1.0	5222587	0.20
Subcontracted Analysis											
Subcontract Parameter	N/A	ATTACHED	5224436						N/A		N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI302	FJI303	FJI304	FJI304	FJI305	FJI306	FJI307			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS43	CWT-SS44	CWT-SS45	CWT-SS45 Lab-Dup	CWT-SS46	CWT-SS47	CWT-SS48	RDL	QC Batch	MDL

Inorganics											
Moisture	%	24	9.3	11	10	18	9.1	11	1.0	5222587	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate											

Maxxam ID		FJI308	FJI309	FJI310	FJI311		FJI312	FJI313			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A		N/A	N/A			
	UNITS	CWT-SS49	CWT-SS50	CWT-SS51	CWT-SS52	QC Batch	CWT-SS53	CWT-SS54	RDL	QC Batch	MDL

Inorganics											
Moisture	%	12	12	8.4	31	5222587	10	25	1.0	5222931	0.20
Total Organic Carbon	mg/kg						17000		500	5230918	100
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

Maxxam ID		FJI314	FJI315	FJI316	FJI317	FJI318	FJI319	FJI320			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS55	CWT-SS56	CWT-SS57	CWT-SS58	CWT-SS59	CWT-SS60	CWT-SS61	RDL	QC Batch	MDL

Inorganics											
Moisture	%	75	10	15	21	89	25	27	1.0	5222931	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

Maxxam ID		FJI321	FJI322	FJI323		FJI324		FJI325			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A		N/A		N/A			
	UNITS	CWT-SS62	CWT-SS63	CWT-SS64	QC Batch	CWT-SS65	QC Batch	CWT-SS66	RDL	QC Batch	MDL

Inorganics											
Moisture	%	11	14	11	5222931	17	5235625	16	1.0	5222931	0.20
Total Organic Carbon	mg/kg			9200	5230918				500		100
Subcontracted Analysis											
Subcontract Parameter	N/A					ATTACHED	5224436		N/A		N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch											

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FJI325	FJI326	FJI327		FJI328			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A		N/A			
	UNITS	CWT-SS66 Lab-Dup	CWT-SS67	CWT-SS68	QC Batch	CWT-SS70	RDL	QC Batch	MDL
Inorganics									
Moisture	%	14	2.3	11	5222931	20	1.0	5230118	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJ1260	FJ1261		FJ1262	FJ1263			
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A	N/A		N/A	N/A			
	UNITS	CWT-SS1	CWT-SS2	QC Batch	CWT-SS3	CWT-SS4	RDL	QC Batch	MDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	5300	3900	5225554	5000	3700	10	5227327	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Barium (Ba)	mg/kg	77	30	5225554	93	49	5.0	5227327	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	5225554	<50	<50	50	5227327	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	5225554	<0.30	<0.30	0.30	5227327	N/A
Acid Extractable Chromium (Cr)	mg/kg	6.0	6.3	5225554	5.0	5.0	2.0	5227327	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.0	1.5	5225554	1.7	1.8	1.0	5227327	N/A
Acid Extractable Copper (Cu)	mg/kg	6.8	4.1	5225554	7.2	11	2.0	5227327	N/A
Acid Extractable Iron (Fe)	mg/kg	18000	11000	5225554	19000	13000	50	5227327	N/A
Acid Extractable Lead (Pb)	mg/kg	9.8	12	5225554	11	25	0.50	5227327	N/A
Acid Extractable Lithium (Li)	mg/kg	4.6	2.6	5225554	4.2	3.6	2.0	5227327	N/A
Acid Extractable Manganese (Mn)	mg/kg	450	130	5225554	540	350	2.0	5227327	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	5225554	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.3	2.4	5225554	2.4	2.9	2.0	5227327	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.9	5.5	5225554	6.4	5.5	2.0	5227327	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5225554	<1.0	<1.0	1.0	5227327	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5225554	<0.50	<0.50	0.50	5227327	N/A
Acid Extractable Strontium (Sr)	mg/kg	7.8	5.2	5225554	8.1	5.7	5.0	5227327	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5225554	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5225554	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Uranium (U)	mg/kg	0.37	0.25	5225554	0.34	0.33	0.10	5227327	N/A
Acid Extractable Vanadium (V)	mg/kg	14	20	5225554	13	11	2.0	5227327	N/A
Acid Extractable Zinc (Zn)	mg/kg	78	26	5225554	80	45	5.0	5227327	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI266		FJI267		FJI269	FJI270			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-SS7	QC Batch	CWT-SS8	QC Batch	CWT-SS10	CWT-SS11	RDL	QC Batch	MDL
Metals										
Acid Extractable Aluminum (Al)	mg/kg	6600	5234500	5600	5237805	6200	4200	10	5227327	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5234500	<2.0	5237805	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5234500	<2.0	5237805	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Barium (Ba)	mg/kg	49	5234500	100	5237805	41	14	5.0	5227327	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5234500	<2.0	5237805	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5234500	<2.0	5237805	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Boron (B)	mg/kg	<50	5234500	<50	5237805	<50	<50	50	5227327	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5234500	0.44	5237805	<0.30	<0.30	0.30	5227327	N/A
Acid Extractable Chromium (Cr)	mg/kg	11	5234500	4.4	5237805	13	7.4	2.0	5227327	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.5	5234500	1.4	5237805	2.7	1.0	1.0	5227327	N/A
Acid Extractable Copper (Cu)	mg/kg	9.1	5234500	7.2	5237805	7.7	<2.0	2.0	5227327	N/A
Acid Extractable Iron (Fe)	mg/kg	11000	5234500	30000	5237805	14000	13000	50	5227327	N/A
Acid Extractable Lead (Pb)	mg/kg	3.7	5234500	5.4	5237805	5.1	6.6	0.50	5227327	N/A
Acid Extractable Lithium (Li)	mg/kg	5.1	5234500	<2.0	5237805	3.7	<2.0	2.0	5227327	N/A
Acid Extractable Manganese (Mn)	mg/kg	150	5234500	290	5237805	220	81	2.0	5227327	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5234500	<0.10	5237805	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5234500	2.6	5237805	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Nickel (Ni)	mg/kg	8.2	5234500	4.1	5237805	4.6	<2.0	2.0	5227327	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.3	5234500	2.2	5237805	5.8	6.0	2.0	5227327	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5234500	<1.0	5237805	<1.0	<1.0	1.0	5227327	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5234500	<0.50	5237805	<0.50	<0.50	0.50	5227327	N/A
Acid Extractable Strontium (Sr)	mg/kg	12	5234500	37	5237805	12	<5.0	5.0	5227327	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5234500	<0.10	5237805	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5234500	<2.0	5237805	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Uranium (U)	mg/kg	0.55	5234500	0.36	5237805	0.48	0.31	0.10	5227327	N/A
Acid Extractable Vanadium (V)	mg/kg	24	5234500	9.3	5237805	33	30	2.0	5227327	N/A
Acid Extractable Zinc (Zn)	mg/kg	150	5234500	380	5237805	29	12	5.0	5227327	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI271		FJI272		FJI273	FJI273			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-SS12	QC Batch	CWT-SS13	QC Batch	CWT-SS14	CWT-SS14 Lab-Dup	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg	4400	5227327	4800	5238053	4800	4700	10	5227327	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5227327	<2.0	5238053	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5227327	<2.0	5238053	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Barium (Ba)	mg/kg	21	5227327	61	5238053	63	65	5.0	5227327	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5227327	<2.0	5238053	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5227327	<2.0	5238053	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Boron (B)	mg/kg	<50	5227327	<50	5238053	<50	<50	50	5227327	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5227327	2.3	5238053	0.82	0.79	0.30	5227327	N/A
Acid Extractable Chromium (Cr)	mg/kg	8.6	5227327	14	5238053	14	13	2.0	5227327	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	5227327	3.2	5238053	3.1	2.7	1.0	5227327	N/A
Acid Extractable Copper (Cu)	mg/kg	3.5	5227327	19	5238053	36	30	2.0	5227327	N/A
Acid Extractable Iron (Fe)	mg/kg	3300	5227327	18000	5238053	12000	12000	50	5227327	N/A
Acid Extractable Lead (Pb)	mg/kg	4.6	5227327	120	5238053	110	95	0.50	5227327	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	5227327	4.9	5238053	5.7	5.8	2.0	5227327	N/A
Acid Extractable Manganese (Mn)	mg/kg	52	5227327	240	5238053	220	220	2.0	5227327	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5227327	0.14	5238053	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5227327	<2.0	5238053	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.1	5227327	6.5	5238053	6.0	5.5	2.0	5227327	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.4	5227327	7.1	5238053	5.9	6.0	2.0	5227327	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5227327	<1.0	5238053	<1.0	<1.0	1.0	5227327	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5227327	<0.50	5238053	<0.50	<0.50	0.50	5227327	N/A
Acid Extractable Strontium (Sr)	mg/kg	5.1	5227327	16	5238053	29	30	5.0	5227327	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5227327	<0.10	5238053	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5227327	3.2	5238053	6.8	3.5	2.0	5227327	N/A
Acid Extractable Uranium (U)	mg/kg	0.39	5227327	0.34	5238053	0.27	0.31	0.10	5227327	N/A
Acid Extractable Vanadium (V)	mg/kg	13	5227327	26	5238053	19	21	2.0	5227327	N/A
Acid Extractable Zinc (Zn)	mg/kg	6.1	5227327	310	5238053	170	94 (1)	5.0	5227327	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. Results confirmed by repeat digestion and analysis.

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI273	FJI275	FJI277		FJI279	FJI281			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A		N/A	N/A			
	UNITS	CWT-SS14 Lab-Dup 2	CWT-SS16	CWT-SS18	QC Batch	CWT-SS20	CWT-SS22	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg		7800	6000	5227327	8100	5800	10	5225311	N/A
Acid Extractable Antimony (Sb)	mg/kg		<2.0	<2.0	5227327	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Arsenic (As)	mg/kg		2.2	<2.0	5227327	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Barium (Ba)	mg/kg		140	36	5227327	54	47	5.0	5225311	N/A
Acid Extractable Beryllium (Be)	mg/kg		<2.0	<2.0	5227327	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Bismuth (Bi)	mg/kg		<2.0	<2.0	5227327	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Boron (B)	mg/kg		<50	<50	5227327	<50	<50	50	5225311	N/A
Acid Extractable Cadmium (Cd)	mg/kg		0.76	<0.30	5227327	1.3	0.69	0.30	5225311	N/A
Acid Extractable Chromium (Cr)	mg/kg		21	11	5227327	17	11	2.0	5225311	N/A
Acid Extractable Cobalt (Co)	mg/kg		4.8	2.8	5227327	3.2	2.9	1.0	5225311	N/A
Acid Extractable Copper (Cu)	mg/kg		24	6.5	5227327	13	37	2.0	5225311	N/A
Acid Extractable Iron (Fe)	mg/kg		22000	13000	5227327	20000	15000	50	5225311	N/A
Acid Extractable Lead (Pb)	mg/kg		200	24	5227327	23	63	0.50	5225311	N/A
Acid Extractable Lithium (Li)	mg/kg		8.3	4.8	5227327	5.1	5.0	2.0	5225311	N/A
Acid Extractable Manganese (Mn)	mg/kg		380	200	5227327	310	260	2.0	5225311	N/A
Acid Extractable Mercury (Hg)	mg/kg		0.18	<0.10	5227327	<0.10	<0.10	0.10	5225311	N/A
Acid Extractable Molybdenum (Mo)	mg/kg		<2.0	<2.0	5227327	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Nickel (Ni)	mg/kg		12	4.6	5227327	6.0	5.3	2.0	5225311	N/A
Acid Extractable Rubidium (Rb)	mg/kg		13	5.9	5227327	4.9	6.4	2.0	5225311	N/A
Acid Extractable Selenium (Se)	mg/kg		<1.0	<1.0	5227327	<1.0	<1.0	1.0	5225311	N/A
Acid Extractable Silver (Ag)	mg/kg		<0.50	<0.50	5227327	<0.50	<0.50	0.50	5225311	N/A
Acid Extractable Strontium (Sr)	mg/kg		17	11	5227327	22	14	5.0	5225311	N/A
Acid Extractable Thallium (Tl)	mg/kg		<0.10	<0.10	5227327	<0.10	<0.10	0.10	5225311	N/A
Acid Extractable Tin (Sn)	mg/kg		3.3	<2.0	5227327	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Uranium (U)	mg/kg		0.59	0.36	5227327	0.68	0.40	0.10	5225311	N/A
Acid Extractable Vanadium (V)	mg/kg		21	26	5227327	34	25	2.0	5225311	N/A
Acid Extractable Zinc (Zn)	mg/kg	96 (1)	750	71	5227327	290	130	5.0	5225311	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.

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI283	FJI285		FJI287		FJI289			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS24	CWT-SS26	QC Batch	CWT-SS28	QC Batch	CWT-SS30	RDL	QC Batch	MDL
Metals										
Acid Extractable Aluminum (Al)	mg/kg	4100	5700	5227327	6000	5237805	5200	10	5225311	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	5227327	<2.0	5237805	<2.0	2.0	5225311	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	5227327	<2.0	5237805	<2.0	2.0	5225311	N/A
Acid Extractable Barium (Ba)	mg/kg	48	67	5227327	33	5237805	39	5.0	5225311	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	5227327	<2.0	5237805	<2.0	2.0	5225311	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	5227327	<2.0	5237805	<2.0	2.0	5225311	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	5227327	<50	5237805	<50	50	5225311	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	5227327	<0.30	5237805	1.1	0.30	5225311	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.1	9.3	5227327	11	5237805	11	2.0	5225311	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.5	2.4	5227327	2.8	5237805	3.3	1.0	5225311	N/A
Acid Extractable Copper (Cu)	mg/kg	9.4	5.5	5227327	9.6	5237805	12	2.0	5225311	N/A
Acid Extractable Iron (Fe)	mg/kg	13000	16000	5227327	14000	5237805	12000	50	5225311	N/A
Acid Extractable Lead (Pb)	mg/kg	63	13	5227327	20	5237805	18	0.50	5225311	N/A
Acid Extractable Lithium (Li)	mg/kg	4.0	5.8	5227327	4.0	5237805	5.4	2.0	5225311	N/A
Acid Extractable Manganese (Mn)	mg/kg	220	280	5227327	160	5237805	220	2.0	5225311	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	5227327	<0.10	5237805	<0.10	0.10	5225311	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5227327	<2.0	5237805	<2.0	2.0	5225311	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.2	3.8	5227327	5.8	5237805	6.3	2.0	5225311	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.6	8.2	5227327	5.4	5237805	6.8	2.0	5225311	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	5227327	<1.0	5237805	<1.0	1.0	5225311	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	5227327	<0.50	5237805	<0.50	0.50	5225311	N/A
Acid Extractable Strontium (Sr)	mg/kg	8.5	10	5227327	13	5237805	16	5.0	5225311	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	5227327	<0.10	5237805	<0.10	0.10	5225311	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	5227327	<2.0	5237805	<2.0	2.0	5225311	N/A
Acid Extractable Uranium (U)	mg/kg	0.30	0.42	5227327	0.38	5237805	0.49	0.10	5225311	N/A
Acid Extractable Vanadium (V)	mg/kg	21	24	5227327	31	5237805	26	2.0	5225311	N/A
Acid Extractable Zinc (Zn)	mg/kg	55	62	5227327	73	5237805	86	5.0	5225311	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJ1290		FJ1291	FJ1291		FJ1293			
Sampling Date		2017/10/13		2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A		N/A	N/A		N/A			
	UNITS	CWT-SS31	QC Batch	CWT-SS32	CWT-SS32 Lab-Dup	QC Batch	CWT-SS34	RDL	QC Batch	MDL

Metals										
Acid Extractable Aluminum (Al)	mg/kg	4800	5225554	8900	8700	5227329	8900	10	5227327	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5225554	<2.0	<2.0	5227329	<2.0	2.0	5227327	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5225554	<2.0	<2.0	5227329	<2.0	2.0	5227327	N/A
Acid Extractable Barium (Ba)	mg/kg	79	5225554	46	51	5227329	28	5.0	5227327	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5225554	<2.0	<2.0	5227329	<2.0	2.0	5227327	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5225554	<2.0	<2.0	5227329	<2.0	2.0	5227327	N/A
Acid Extractable Boron (B)	mg/kg	<50	5225554	<50	<50	5227329	<50	50	5227327	N/A
Acid Extractable Cadmium (Cd)	mg/kg	0.77	5225554	49	52	5227329	1.2	0.30	5227327	N/A
Acid Extractable Chromium (Cr)	mg/kg	8.0	5225554	13	13	5227329	18	2.0	5227327	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.8	5225554	2.6	2.6	5227329	3.4	1.0	5227327	N/A
Acid Extractable Copper (Cu)	mg/kg	12	5225554	7.6	7.7	5227329	9.0	2.0	5227327	N/A
Acid Extractable Iron (Fe)	mg/kg	17000	5225554	16000	16000	5227329	20000	50	5227327	N/A
Acid Extractable Lead (Pb)	mg/kg	62	5225554	11	14	5227329	9.4	0.50	5227327	N/A
Acid Extractable Lithium (Li)	mg/kg	3.7	5225554	4.3	3.7	5227329	4.2	2.0	5227327	N/A
Acid Extractable Manganese (Mn)	mg/kg	460	5225554	180	170	5227329	180	2.0	5227327	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5225554	<0.10	<0.10	5227329	<0.10	0.10	5227327	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5225554	<2.0	<2.0	5227329	<2.0	2.0	5227327	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.5	5225554	4.1	4.6	5227329	6.6	2.0	5227327	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.2	5225554	8.0	8.1	5227329	4.8	2.0	5227327	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5225554	<1.0	<1.0	5227329	<1.0	1.0	5227327	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5225554	<0.50	<0.50	5227329	<0.50	0.50	5227327	N/A
Acid Extractable Strontium (Sr)	mg/kg	11	5225554	20	21	5227329	11	5.0	5227327	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5225554	<0.10	<0.10	5227329	<0.10	0.10	5227327	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5225554	<2.0	<2.0	5227329	<2.0	2.0	5227327	N/A
Acid Extractable Uranium (U)	mg/kg	0.29	5225554	0.37	0.40	5227329	0.56	0.10	5227327	N/A
Acid Extractable Vanadium (V)	mg/kg	13	5225554	31	30	5227329	41	2.0	5227327	N/A
Acid Extractable Zinc (Zn)	mg/kg	120	5225554	1400	1300	5227329	48	5.0	5227327	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		FJI294		FJI295		FJI296		FJI300			
Sampling Date		2017/10/13		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A		N/A			
	UNITS	CWT-SS35	QC Batch	CWT-SS36	QC Batch	CWT-SS37	QC Batch	CWT-SS41	RDL	QC Batch	MDL

Metals											
Acid Extractable Aluminum (Al)	mg/kg	6600	5237805	17000	5227327	7700	5237805	9000	10	5227327	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5237805	<2.0	5227327	<2.0	5237805	<2.0	2.0	5227327	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5237805	<2.0	5227327	<2.0	5237805	<2.0	2.0	5227327	N/A
Acid Extractable Barium (Ba)	mg/kg	40	5237805	450	5227327	76	5237805	39	5.0	5227327	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5237805	<2.0	5227327	<2.0	5237805	<2.0	2.0	5227327	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5237805	<2.0	5227327	<2.0	5237805	<2.0	2.0	5227327	N/A
Acid Extractable Boron (B)	mg/kg	<50	5237805	<50	5227327	<50	5237805	<50	50	5227327	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5237805	<0.30	5227327	0.34	5237805	6.5	0.30	5227327	N/A
Acid Extractable Chromium (Cr)	mg/kg	12	5237805	73	5227327	10	5237805	17	2.0	5227327	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.5	5237805	14	5227327	2.9	5237805	2.7	1.0	5227327	N/A
Acid Extractable Copper (Cu)	mg/kg	5.5	5237805	3.3	5227327	6.1	5237805	9.6	2.0	5227327	N/A
Acid Extractable Iron (Fe)	mg/kg	14000	5237805	31000	5227327	12000	5237805	21000	50	5227327	N/A
Acid Extractable Lead (Pb)	mg/kg	7.5	5237805	2.0	5227327	6.6	5237805	24	0.50	5227327	N/A
Acid Extractable Lithium (Li)	mg/kg	3.1	5237805	8.2	5227327	2.3	5237805	3.0	2.0	5227327	N/A
Acid Extractable Manganese (Mn)	mg/kg	170	5237805	290	5227327	170	5237805	170	2.0	5227327	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5237805	<0.10	5227327	<0.10	5237805	<0.10	0.10	5227327	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5237805	<2.0	5227327	<2.0	5237805	<2.0	2.0	5227327	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.2	5237805	40	5227327	4.8	5237805	5.6	2.0	5227327	N/A
Acid Extractable Rubidium (Rb)	mg/kg	6.0	5237805	35	5227327	5.7	5237805	4.4	2.0	5227327	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5237805	<1.0	5227327	<1.0	5237805	<1.0	1.0	5227327	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5237805	<0.50	5227327	<0.50	5237805	<0.50	0.50	5227327	N/A
Acid Extractable Strontium (Sr)	mg/kg	11	5237805	10	5227327	12	5237805	14	5.0	5227327	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5237805	0.25	5227327	<0.10	5237805	<0.10	0.10	5227327	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5237805	<2.0	5227327	<2.0	5237805	<2.0	2.0	5227327	N/A
Acid Extractable Uranium (U)	mg/kg	0.45	5237805	0.17	5227327	0.46	5237805	0.43	0.10	5227327	N/A
Acid Extractable Vanadium (V)	mg/kg	27	5237805	88	5227327	28	5237805	42	2.0	5227327	N/A
Acid Extractable Zinc (Zn)	mg/kg	33	5237805	57	5227327	51	5237805	300	5.0	5227327	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI302	FJI303	FJI307	FJI308	FJI311			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS43	CWT-SS44	CWT-SS48	CWT-SS49	CWT-SS52	RDL	QC Batch	MDL

Metals									
Acid Extractable Aluminum (Al)	mg/kg	4800	5100	3300	4700	3600	10	5227327	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Barium (Ba)	mg/kg	27	40	35	59	18	5.0	5227327	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5227327	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5227327	N/A
Acid Extractable Chromium (Cr)	mg/kg	7.5	11	9.1	8.6	7.5	2.0	5227327	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.5	3.1	2.1	2.3	<1.0	1.0	5227327	N/A
Acid Extractable Copper (Cu)	mg/kg	6.9	6.0	2.5	7.7	<2.0	2.0	5227327	N/A
Acid Extractable Iron (Fe)	mg/kg	10000	13000	15000	13000	6100	50	5227327	N/A
Acid Extractable Lead (Pb)	mg/kg	4.4	4.3	2.5	5.8	6.8	0.50	5227327	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	4.0	3.5	4.7	<2.0	2.0	5227327	N/A
Acid Extractable Manganese (Mn)	mg/kg	110	150	160	220	46	2.0	5227327	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.9	5.1	3.8	3.2	<2.0	2.0	5227327	N/A
Acid Extractable Rubidium (Rb)	mg/kg	3.9	6.9	5.5	11	3.3	2.0	5227327	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5227327	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5227327	N/A
Acid Extractable Strontium (Sr)	mg/kg	8.1	8.6	6.7	9.3	<5.0	5.0	5227327	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5227327	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5227327	N/A
Acid Extractable Uranium (U)	mg/kg	0.26	0.35	0.25	0.27	0.37	0.10	5227327	N/A
Acid Extractable Vanadium (V)	mg/kg	19	28	29	21	24	2.0	5227327	N/A
Acid Extractable Zinc (Zn)	mg/kg	48	23	22	39	6.0	5.0	5227327	N/A

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI313	FJI315	FJI316	FJI317	FJI319	FJI321			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS54	CWT-SS56	CWT-SS57	CWT-SS58	CWT-SS60	CWT-SS62	RDL	QC Batch	MDL
Metals										
Acid Extractable Aluminum (Al)	mg/kg	7700	1900	11000	25000	7800	6400	10	5225311	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Barium (Ba)	mg/kg	18	35	48	40	41	90	5.0	5225311	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	<50	50	5225311	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5225311	N/A
Acid Extractable Chromium (Cr)	mg/kg	9.3	<2.0	4.4	19	11	5.0	2.0	5225311	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	1.1	1.4	2.8	1.5	1.0	5225311	N/A
Acid Extractable Copper (Cu)	mg/kg	3.2	<2.0	<2.0	3.0	6.1	5.4	2.0	5225311	N/A
Acid Extractable Iron (Fe)	mg/kg	6900	6300	34000	36000	20000	23000	50	5225311	N/A
Acid Extractable Lead (Pb)	mg/kg	3.8	1.6	3.4	6.2	4.6	8.1	0.50	5225311	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	3.2	3.1	4.4	3.7	2.0	5225311	N/A
Acid Extractable Manganese (Mn)	mg/kg	64	80	340	240	260	510	2.0	5225311	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225311	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	<2.0	<2.0	<2.0	3.5	<2.0	2.0	5225311	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.0	10	8.5	8.1	6.7	8.1	2.0	5225311	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5225311	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5225311	N/A
Acid Extractable Strontium (Sr)	mg/kg	6.4	<5.0	<5.0	<5.0	7.8	6.4	5.0	5225311	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5225311	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Uranium (U)	mg/kg	0.44	<0.10	0.16	0.69	0.43	0.26	0.10	5225311	N/A
Acid Extractable Vanadium (V)	mg/kg	16	<2.0	23	45	32	12	2.0	5225311	N/A
Acid Extractable Zinc (Zn)	mg/kg	8.4	11	42	42	29	54	5.0	5225311	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJI322		FJI324		FJI326	FJI327			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-SS63	QC Batch	CWT-SS65	QC Batch	CWT-SS67	CWT-SS68	RDL	QC Batch	MDL
Metals										
Acid Extractable Aluminum (Al)	mg/kg	2300	5225311	3700	5237805	2300	4300	10	5225311	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5225311	<2.0	5237805	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5225311	<2.0	5237805	2.2	<2.0	2.0	5225311	N/A
Acid Extractable Barium (Ba)	mg/kg	13	5225311	34	5237805	17	35	5.0	5225311	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5225311	<2.0	5237805	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5225311	<2.0	5237805	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Boron (B)	mg/kg	<50	5225311	<50	5237805	<50	<50	50	5225311	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5225311	<0.30	5237805	<0.30	<0.30	0.30	5225311	N/A
Acid Extractable Chromium (Cr)	mg/kg	3.7	5225311	7.3	5237805	3.5	7.3	2.0	5225311	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.4	5225311	2.0	5237805	1.7	2.4	1.0	5225311	N/A
Acid Extractable Copper (Cu)	mg/kg	3.1	5225311	5.0	5237805	4.6	4.0	2.0	5225311	N/A
Acid Extractable Iron (Fe)	mg/kg	6900	5225311	8800	5237805	8800	11000	50	5225311	N/A
Acid Extractable Lead (Pb)	mg/kg	4.0	5225311	23	5237805	8.1	9.9	0.50	5225311	N/A
Acid Extractable Lithium (Li)	mg/kg	2.8	5225311	4.6	5237805	3.1	4.4	2.0	5225311	N/A
Acid Extractable Manganese (Mn)	mg/kg	71	5225311	120	5237805	95	140	2.0	5225311	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5225311	<0.10	5237805	<0.10	<0.10	0.10	5225311	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5225311	<2.0	5237805	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.5	5225311	3.6	5237805	3.0	3.5	2.0	5225311	N/A
Acid Extractable Rubidium (Rb)	mg/kg	3.2	5225311	6.3	5237805	3.8	7.4	2.0	5225311	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5225311	<1.0	5237805	<1.0	<1.0	1.0	5225311	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5225311	<0.50	5237805	<0.50	<0.50	0.50	5225311	N/A
Acid Extractable Strontium (Sr)	mg/kg	7.8	5225311	7.9	5237805	6.3	8.2	5.0	5225311	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5225311	<0.10	5237805	<0.10	<0.10	0.10	5225311	N/A
Acid Extractable Tin (Sn)	mg/kg	2.4	5225311	<2.0	5237805	<2.0	<2.0	2.0	5225311	N/A
Acid Extractable Uranium (U)	mg/kg	0.30	5225311	0.27	5237805	0.19	0.28	0.10	5225311	N/A
Acid Extractable Vanadium (V)	mg/kg	9.3	5225311	15	5237805	8.6	19	2.0	5225311	N/A
Acid Extractable Zinc (Zn)	mg/kg	12	5225311	29	5237805	23	25	5.0	5225311	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FJ1328			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SS70	RDL	QC Batch	MDL
Metals					
Acid Extractable Aluminum (Al)	mg/kg	6400	10	5234500	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	2.0	5234500	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	2.0	5234500	N/A
Acid Extractable Barium (Ba)	mg/kg	48	5.0	5234500	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	2.0	5234500	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	2.0	5234500	N/A
Acid Extractable Boron (B)	mg/kg	<50	50	5234500	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	0.30	5234500	N/A
Acid Extractable Chromium (Cr)	mg/kg	12	2.0	5234500	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.5	1.0	5234500	N/A
Acid Extractable Copper (Cu)	mg/kg	8.9	2.0	5234500	N/A
Acid Extractable Iron (Fe)	mg/kg	11000	50	5234500	N/A
Acid Extractable Lead (Pb)	mg/kg	3.4	0.50	5234500	N/A
Acid Extractable Lithium (Li)	mg/kg	4.8	2.0	5234500	N/A
Acid Extractable Manganese (Mn)	mg/kg	140	2.0	5234500	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.10	5234500	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	2.0	5234500	N/A
Acid Extractable Nickel (Ni)	mg/kg	7.3	2.0	5234500	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.4	2.0	5234500	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	1.0	5234500	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	0.50	5234500	N/A
Acid Extractable Strontium (Sr)	mg/kg	11	5.0	5234500	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	0.10	5234500	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	2.0	5234500	N/A
Acid Extractable Uranium (U)	mg/kg	0.53	0.10	5234500	N/A
Acid Extractable Vanadium (V)	mg/kg	23	2.0	5234500	N/A
Acid Extractable Zinc (Zn)	mg/kg	130	5.0	5234500	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJI267		FJI269		FJI272		FJI279			
Sampling Date		2017/10/13		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A		N/A			
	UNITS	CWT-SS8	QC Batch	CWT-SS10	QC Batch	CWT-SS13	QC Batch	CWT-SS20	RDL	QC Batch	MDL

Polyaromatic Hydrocarbons											
1-Methylnaphthalene	mg/kg	<0.010	5235898	<0.010	5225548	<0.010	5235898	<0.010	0.010	5225548	N/A
2-Methylnaphthalene	mg/kg	<0.010	5235898	<0.010	5225548	<0.010	5235898	<0.010	0.010	5225548	N/A
Acenaphthene	mg/kg	<0.010	5235898	<0.010	5225548	0.029	5235898	<0.010	0.010	5225548	N/A
Acenaphthylene	mg/kg	<0.010	5235898	<0.010	5225548	<0.010	5235898	<0.010	0.010	5225548	N/A
Anthracene	mg/kg	<0.010	5235898	<0.010	5225548	0.069	5235898	0.015	0.010	5225548	N/A
Benzo(a)anthracene	mg/kg	<0.010	5235898	<0.010	5225548	0.13	5235898	0.038	0.010	5225548	N/A
Benzo(a)pyrene	mg/kg	<0.010	5235898	<0.010	5225548	0.10	5235898	0.072	0.010	5225548	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	5235898	<0.010	5225548	0.075	5235898	0.18	0.010	5225548	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	5235117	<0.020	5222426	0.12	5235117	0.26	0.020	5222426	N/A
Benzo(g,h,i)perylene	mg/kg	0.15	5235898	<0.010	5225548	0.069	5235898	0.089	0.010	5225548	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	5235898	<0.010	5225548	0.048	5235898	0.077	0.010	5225548	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	5235898	<0.010	5225548	0.049	5235898	0.075	0.010	5225548	N/A
Chrysene	mg/kg	<0.010	5235898	<0.010	5225548	0.14	5235898	0.12	0.010	5225548	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	5235898	<0.010	5225548	0.016	5235898	0.025	0.010	5225548	N/A
Fluoranthene	mg/kg	<0.010	5235898	<0.010	5225548	0.36	5235898	0.074	0.010	5225548	N/A
Fluorene	mg/kg	<0.010	5235898	<0.010	5225548	0.021	5235898	<0.010	0.010	5225548	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	5235898	<0.010	5225548	0.056	5235898	0.085	0.010	5225548	N/A
Naphthalene	mg/kg	<0.010	5235898	<0.010	5225548	<0.010	5235898	<0.010	0.010	5225548	N/A
Perylene	mg/kg	0.15	5235898	<0.010	5225548	0.032	5235898	0.020	0.010	5225548	N/A
Phenanthrene	mg/kg	<0.010	5235898	<0.010	5225548	0.22	5235898	0.022	0.010	5225548	N/A
Pyrene	mg/kg	<0.010	5235898	<0.010	5225548	0.27	5235898	0.066	0.010	5225548	N/A

Surrogate Recovery (%)											
D10-Anthracene	%	114	5235898	93	5225548	115	5235898	92		5225548	
D14-Terphenyl (FS)	%	96	5235898	97	5225548	89	5235898	99		5225548	
D8-Acenaphthylene	%	74	5235898	90	5225548	87	5235898	90		5225548	

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

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJI282	FJI291		FJI294		FJI296			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS23	CWT-SS32	QC Batch	CWT-SS35	RDL	CWT-SS37	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.010	<0.010	5225548	<0.010	0.010	<0.053 (1)	0.053	5235898	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	5225548	0.018	0.010	<0.095 (1)	0.095	5235898	N/A
Acenaphthene	mg/kg	0.056	<0.010	5225548	<0.010	0.010	<0.049 (1)	0.049	5235898	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	5225548	<0.010	0.010	<0.088 (1)	0.088	5235898	N/A
Anthracene	mg/kg	0.062	<0.010	5225548	<0.010	0.010	<0.056 (1)	0.056	5235898	N/A
Benzo(a)anthracene	mg/kg	0.18	<0.010	5225548	<0.010	0.010	<0.087 (1)	0.087	5235898	N/A
Benzo(a)pyrene	mg/kg	0.15	<0.010	5225548	<0.010	0.010	<0.010	0.010	5235898	N/A
Benzo(b)fluoranthene	mg/kg	0.14	0.013	5225548	0.033	0.010	0.18	0.010	5235898	N/A
Benzo(b,j)fluoranthene	mg/kg	0.23	<0.020	5222426	0.033	0.020	0.18	0.020	5235117	N/A
Benzo(g,h,i)perylene	mg/kg	0.11	<0.010	5225548	<0.010	0.010	<0.035 (1)	0.035	5235898	N/A
Benzo(j)fluoranthene	mg/kg	0.086	<0.010	5225548	<0.010	0.010	<0.010	0.010	5235898	N/A
Benzo(k)fluoranthene	mg/kg	0.086	<0.010	5225548	<0.010	0.010	<0.025 (1)	0.025	5235898	N/A
Chrysene	mg/kg	0.21	0.023	5225548	<0.010	0.010	1.1	0.010	5235898	N/A
Dibenz(a,h)anthracene	mg/kg	0.024	<0.010	5225548	<0.010	0.010	<0.010	0.010	5235898	N/A
Fluoranthene	mg/kg	0.47	0.025	5225548	<0.010	0.010	0.050	0.010	5235898	N/A
Fluorene	mg/kg	0.041	<0.010	5225548	<0.010	0.010	<0.14 (1)	0.14	5235898	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	0.097	<0.010	5225548	0.018	0.010	<0.010	0.010	5235898	N/A
Naphthalene	mg/kg	0.017	<0.010	5225548	<0.010	0.010	<0.12 (1)	0.12	5235898	N/A
Perylene	mg/kg	0.038	<0.010	5225548	<0.010	0.010	<0.010	0.010	5235898	N/A
Phenanthrene	mg/kg	0.34	<0.010	5225548	<0.010	0.010	<0.049 (1)	0.049	5235898	N/A
Pyrene	mg/kg	0.33	0.022	5225548	0.025	0.010	0.24	0.010	5235898	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	92	102	5225548	103		108		5235898	
D14-Terphenyl (FS)	%	99	109	5225548	90		83		5235898	
D8-Acenaphthylene	%	94	94	5225548	97		83		5235898	
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		FJI308	FJI311	FJI314	FJI317	FJI320	FJI322			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS49	CWT-SS52	CWT-SS55	CWT-SS58	CWT-SS61	CWT-SS63	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons										
1-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
2-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Acenaphthene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Anthracene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Benzo(a)anthracene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Benzo(a)pyrene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5222426	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Chrysene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Fluoranthene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Fluorene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Naphthalene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Perylene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Phenanthrene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Pyrene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5225548	N/A
Surrogate Recovery (%)										
D10-Anthracene	%	95	95	91	95	88	103		5225548	
D14-Terphenyl (FS)	%	100	101	107	98	92	101		5225548	
D8-Acenaphthylene	%	94	95	87	94	91	96		5225548	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FJ1325			
Sampling Date		2017/10/13			
COC Number		N/A			
	UNITS	CWT-SS66	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons					
1-Methylnaphthalene	mg/kg	<0.010	0.010	5225548	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.010	5225548	N/A
Acenaphthene	mg/kg	<0.010	0.010	5225548	N/A
Acenaphthylene	mg/kg	<0.010	0.010	5225548	N/A
Anthracene	mg/kg	<0.010	0.010	5225548	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	5225548	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	5225548	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	5225548	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	5222426	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	5225548	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	5225548	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	5225548	N/A
Chrysene	mg/kg	<0.010	0.010	5225548	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	5225548	N/A
Fluoranthene	mg/kg	<0.010	0.010	5225548	N/A
Fluorene	mg/kg	<0.010	0.010	5225548	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	5225548	N/A
Naphthalene	mg/kg	<0.010	0.010	5225548	N/A
Perylene	mg/kg	<0.010	0.010	5225548	N/A
Phenanthrene	mg/kg	<0.010	0.010	5225548	N/A
Pyrene	mg/kg	<0.010	0.010	5225548	N/A
Surrogate Recovery (%)					
D10-Anthracene	%	88		5225548	
D14-Terphenyl (FS)	%	95		5225548	
D8-Acenaphthylene	%	96		5225548	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJI270		FJI272		FJI275	FJI293			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-SS11	QC Batch	CWT-SS13	QC Batch	CWT-SS16	CWT-SS34	RDL	QC Batch	MDL

Volatile Organics										
1,1,1-Trichloroethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
1,1,2,2-Tetrachloroethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00040
1,1,2-Trichloroethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00040
1,1-Dichloroethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
1,1-Dichloroethylene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
1,2-Dichlorobenzene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
1,2-Dichloroethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
1,2-Dichloropropane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
1,3-Dichlorobenzene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
1,4-Dichlorobenzene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00030
Benzene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
Bromodichloromethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
Bromoform	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00030
Bromomethane	ug/kg	<50	5226049	<50	5241887	<50	<50	50	5226049	0.00040
Carbon Tetrachloride	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
Chlorobenzene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
Chloroethane	ug/kg	<200	5226049	<200	5241887	<200	<200	200	5226049	0.00030
Chloroform	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
cis-1,2-Dichloroethylene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
cis-1,3-Dichloropropene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
Dibromochloromethane	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00030
Ethylbenzene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
Ethylene Dibromide	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00040
Methylene Chloride(Dichloromethane)	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
o-Xylene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
p+m-Xylene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
Styrene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
Tetrachloroethylene	ug/kg	<25	5226049	<25	5241887	170	<25	25	5226049	0.00030
Toluene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00010
Total Xylenes	ug/kg	<50	5226049	<50	5241887	<50	<50	50	5226049	N/A
trans-1,2-Dichloroethylene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00020
trans-1,3-Dichloropropene	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00030
Trichloroethylene	ug/kg	<10	5226049	<10	5241887	<10	<10	10	5226049	0.00020

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJI270		FJI272		FJI275	FJI293			
Sampling Date		2017/10/13		2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A		N/A		N/A	N/A			
	UNITS	CWT-SS11	QC Batch	CWT-SS13	QC Batch	CWT-SS16	CWT-SS34	RDL	QC Batch	MDL
Trichlorofluoromethane (FREON 11)	ug/kg	<25	5226049	<25	5241887	<25	<25	25	5226049	0.00030
Vinyl Chloride	ug/kg	<20	5226049	<20	5241887	<20	<20	20	5226049	0.00020
Surrogate Recovery (%)										
4-Bromofluorobenzene	%	99	5226049	101	5241887	100	105		5226049	
D10-o-Xylene	%	98 (1)	5226049	109 (1)	5241887	92 (1)	80		5226049	
D4-1,2-Dichloroethane	%	99	5226049	94	5241887	96	102		5226049	
D8-Toluene	%	96	5226049	102	5241887	97	97		5226049	
RDL = Reportable Detection Limit										
QC Batch = Quality Control Batch										
(1) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.										

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJI295	FJI326			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-SS36	CWT-SS67	RDL	QC Batch	MDL
Volatile Organics						
1,1,1-Trichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,1,2,2-Tetrachloroethane	ug/kg	<25	<25	25	5226049	0.00040
1,1,2-Trichloroethane	ug/kg	<25	<25	25	5226049	0.00040
1,1-Dichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,1-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00010
1,2-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00020
1,2-Dichloroethane	ug/kg	<25	<25	25	5226049	0.00010
1,2-Dichloropropane	ug/kg	<25	<25	25	5226049	0.00020
1,3-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00020
1,4-Dichlorobenzene	ug/kg	<25	<25	25	5226049	0.00030
Benzene	ug/kg	<25	<25	25	5226049	0.00010
Bromodichloromethane	ug/kg	<25	<25	25	5226049	0.00020
Bromoform	ug/kg	<25	<25	25	5226049	0.00030
Bromomethane	ug/kg	<50	<50	50	5226049	0.00040
Carbon Tetrachloride	ug/kg	<25	<25	25	5226049	0.00010
Chlorobenzene	ug/kg	<25	<25	25	5226049	0.00010
Chloroethane	ug/kg	<200	<200	200	5226049	0.00030
Chloroform	ug/kg	<25	<25	25	5226049	0.00010
cis-1,2-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00010
cis-1,3-Dichloropropene	ug/kg	<25	<25	25	5226049	0.00020
Dibromochloromethane	ug/kg	<25	<25	25	5226049	0.00030
Ethylbenzene	ug/kg	<25	<25	25	5226049	0.00010
Ethylene Dibromide	ug/kg	<25	<25	25	5226049	0.00040
Methylene Chloride(Dichloromethane)	ug/kg	<25	<25	25	5226049	0.00020
o-Xylene	ug/kg	<25	<25	25	5226049	0.00010
p+m-Xylene	ug/kg	<25	<25	25	5226049	0.00010
Styrene	ug/kg	<25	<25	25	5226049	0.00020
Tetrachloroethylene	ug/kg	<25	<25	25	5226049	0.00030
Toluene	ug/kg	<25	<25	25	5226049	0.00010
Total Xylenes	ug/kg	<50	<50	50	5226049	N/A
trans-1,2-Dichloroethylene	ug/kg	<25	<25	25	5226049	0.00020
trans-1,3-Dichloropropene	ug/kg	<25	<25	25	5226049	0.00030
Trichloroethylene	ug/kg	<10	<10	10	5226049	0.00020
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FJI295	FJI326			
Sampling Date		2017/10/13	2017/10/13			
COC Number		N/A	N/A			
	UNITS	CWT-SS36	CWT-SS67	RDL	QC Batch	MDL
Trichlorofluoromethane (FREON 11)	ug/kg	<25	<25	25	5226049	0.00030
Vinyl Chloride	ug/kg	<20	<20	20	5226049	0.00020
Surrogate Recovery (%)						
4-Bromofluorobenzene	%	97	99		5226049	
D10-o-Xylene	%	85	96		5226049	
D4-1,2-Dichloroethane	%	98	96		5226049	
D8-Toluene	%	96	97		5226049	
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI260	FJI260		FJI261		FJI262			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS1	CWT-SS1 Lab-Dup	RDL	CWT-SS2	RDL	CWT-SS3	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025		0.025	<0.025	0.025	<0.025	0.025	5225590	N/A
Toluene	mg/kg	<0.025		0.025	<0.025	0.025	<0.025	0.025	5225590	N/A
Ethylbenzene	mg/kg	<0.025		0.025	<0.025	0.025	<0.025	0.025	5225590	0.025
Total Xylenes	mg/kg	<0.050		0.050	<0.50	0.50	<0.050	0.050	5225590	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5		2.5	<25	25	<2.5	2.5	5225590	N/A
>C10-C16 Hydrocarbons	mg/kg	75	48	10	140	100	<10	10	5225694	N/A
>C16-C21 Hydrocarbons	mg/kg	220	160	10	480	100	<10	10	5225694	N/A
>C21-<C32 Hydrocarbons	mg/kg	67	56	15	5900	150	20	15	5225694	N/A
Modified TPH (Tier1)	mg/kg	360		15	6500	150	20	15	5222287	N/A
Reached Baseline at C32	mg/kg	Yes		N/A	Yes	N/A	Yes	N/A	5225694	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		N/A	COMMENT (2)	N/A	COMMENT (3)	N/A	5225694	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	99	92		105		104		5225694	
n-Dotriacontane - Extractable	%	109	110		127 (4)		111		5225694	
Isobutylbenzene - Volatile	%	95 (5)			44 (6)		96		5225590	
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) Unidentified compound(s) in fuel / lube range. One product in lube oil range. (3) Possible lube oil fraction. (4) Elevated TEH RDL(s) due to sample dilution. (5) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (6) VPH surrogate not within acceptance limits. Analysis was repeated with similar results.										

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI263	FJI264		FJI266	FJI266			
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A	N/A		N/A	N/A			
	UNITS	CWT-SS4	CWT-SS5	QC Batch	CWT-SS7	CWT-SS7 Lab-Dup	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5225590	<0.025		0.025	5230623	N/A
Toluene	mg/kg	<0.025	<0.025	5225590	<0.025		0.025	5230623	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5225590	<0.025		0.025	5230623	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5225590	<0.050		0.050	5230623	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225590	<2.5		2.5	5230623	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5225694	<10	<10	10	5233167	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5225694	<10	<10	10	5233167	N/A
>C21-<C32 Hydrocarbons	mg/kg	23	<15	5225694	29	27	15	5233167	N/A
Modified TPH (Tier1)	mg/kg	23	<15	5222287	29		15	5227576	N/A
Reached Baseline at C32	mg/kg	Yes	NA	5225694	Yes		N/A	5233167	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	5225694	COMMENT (2)		N/A	5233167	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	102	99	5225694	92	89		5233167	
n-Dotriacontane - Extractable	%	110	113	5225694	100 (3)	100 (3)		5233167	
Isobutylbenzene - Volatile	%	96	94	5225590	99			5230623	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Possible lube oil fraction. (2) Unidentified compound(s) in lube oil range. Possible lube oil fraction. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.									

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI267	FJI267		FJI268	FJI269	FJI270			
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A		N/A	N/A	N/A			
	UNITS	CWT-SS8	CWT-SS8 Lab-Dup	QC Batch	CWT-SS9	CWT-SS10	CWT-SS11	RDL	QC Batch	MDL

Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	5239816	<0.025	<0.025	<0.025	0.025	5225590	N/A
Toluene	mg/kg	<0.025	<0.025	5239816	<0.025	<0.025	<0.025	0.025	5225590	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5239816	<0.025	<0.025	<0.025	0.025	5225590	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5239816	<0.050	<0.050	<0.050	0.050	5225590	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5239816	<2.5	9.3	<2.5	2.5	5225590	N/A
>C10-C16 Hydrocarbons	mg/kg	<10		5237143	<10	15	<10	10	5225694	N/A
>C16-C21 Hydrocarbons	mg/kg	<10		5237143	<10	<10	<10	10	5225694	N/A
>C21-<C32 Hydrocarbons	mg/kg	270		5237143	<15	<15	<15	15	5225694	N/A
Modified TPH (Tier1)	mg/kg	270		5235321	<15	24	<15	15	5222287	N/A
Reached Baseline at C32	mg/kg	Yes		5237143	NA	Yes	NA	N/A	5225694	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		5237143	NA	COMMENT (2)	NA	N/A	5225694	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	89		5237143	95	104	96		5225694	
n-Dotriacontane - Extractable	%	105		5237143	102	107	106		5225694	
Isobutylbenzene - Volatile	%	172 (3)	171 (3)	5239816	93	94	96 (4)		5225590	

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) One product in fuel oil range.
 (3) VPH surrogate not within acceptance limits due to matrix interference. VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
 (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		FJI271	FJI271		FJI272		FJI273			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS12	CWT-SS12 Lab-Dup	QC Batch	CWT-SS13	QC Batch	CWT-SS14	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	5225590	<0.025	5239816	<0.025	0.025	5225590	N/A
Toluene	mg/kg	<0.025	<0.025	5225590	<0.025	5239816	<0.025	0.025	5225590	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5225590	<0.025	5239816	<0.025	0.025	5225590	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5225590	<0.050	5239816	<0.050	0.050	5225590	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225590	<2.5	5239816	<2.5	2.5	5225590	N/A
>C10-C16 Hydrocarbons	mg/kg	<10		5225694	<10	5237143	<10	10	5225694	N/A
>C16-C21 Hydrocarbons	mg/kg	<10		5225694	<10	5237143	43	10	5225694	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15		5225694	72	5237143	270	15	5225694	N/A
Modified TPH (Tier1)	mg/kg	<15		5222287	72	5235321	310	15	5222287	N/A
Reached Baseline at C32	mg/kg	NA		5225694	Yes	5237143	Yes	N/A	5225694	N/A
Hydrocarbon Resemblance	mg/kg	NA		5225694	COMMENT (1)	5237143	COMMENT (1)	N/A	5225694	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	105		5225694	92	5237143	99		5225694	
n-Dotriacontane - Extractable	%	119		5225694	120	5237143	115		5225694	
Isobutylbenzene - Volatile	%	79	79	5225590	103 (2)	5239816	93 (2)		5225590	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Lube oil fraction. (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		FJI274	FJI274		FJI275	FJI276			
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A	N/A		N/A	N/A			
	UNITS	CWT-SS15	CWT-SS15 Lab-Dup	QC Batch	CWT-SS16	CWT-SS17	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025		5225590	<0.025	<0.025	0.025	5225590	N/A
Toluene	mg/kg	<0.025		5225590	<0.025	<0.025	0.025	5225590	N/A
Ethylbenzene	mg/kg	<0.025		5225590	<0.025	<0.025	0.025	5225590	0.025
Total Xylenes	mg/kg	<0.050		5225590	<0.050	<0.050	0.050	5225590	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5		5225590	<2.5	<2.5	2.5	5225590	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5228077	22	23	10	5225694	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5228077	78	120	10	5225694	N/A
>C21-<C32 Hydrocarbons	mg/kg	47	45	5228077	220	1100	15	5225694	N/A
Modified TPH (Tier1)	mg/kg	47		5222434	320	1200	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes		5228077	Yes	No	N/A	5225694	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		5228077	COMMENT (2)	COMMENT (3)	N/A	5225694	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	102	103	5228077	99	98		5225694	
n-Dotriacontane - Extractable	%	105	93	5228077	114	120		5225694	
Isobutylbenzene - Volatile	%	93		5225590	93 (4)	89 (4)		5225590	
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) Unidentified compound(s) in fuel / lube range. Lube oil fraction. (3) Lube oil fraction. (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		FJI277	FJI278	FJI279	FJI280	FJI281			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS18	CWT-SS19	CWT-SS20	CWT-SS21	CWT-SS22	RDL	QC Batch	MDL

Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	0.23	<0.025	0.025	5225590	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225590	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225590	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5225590	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	14	<10	10	5225694	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	52	38	10	5225694	N/A
>C21-<C32 Hydrocarbons	mg/kg	48	40	54	180	130	15	5225694	N/A
Modified TPH (Tier1)	mg/kg	48	40	54	240	170	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	Yes	Yes	Yes	N/A	5225694	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	COMMENT (2)	COMMENT (3)	COMMENT (4)	N/A	5225694	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	91	97	97	100	110		5225694	
n-Dotriacontane - Extractable	%	104	105	125	109 (5)	104		5225694	
Isobutylbenzene - Volatile	%	95	79	94 (6)	89 (6)	93		5225590	

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 N/A = Not Applicable
 (1) Lube oil fraction.
 (2) Possible lube oil fraction.
 (3) Unidentified compound(s) in fuel / lube range. Lube oil fraction.
 (4) One product in fuel / lube range. Possible lube oil fraction.
 (5) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.
 (6) 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		FJI282	FJI283		FJI284			
Sampling Date		2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A			
	UNITS	CWT-SS23	CWT-SS24	QC Batch	CWT-SS25	RDL	QC Batch	MDL
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	5225590	<0.025	0.025	5225993	N/A
Toluene	mg/kg	<0.025	<0.025	5225590	<0.025	0.025	5225993	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5225590	<0.025	0.025	5225993	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5225590	<0.050	0.050	5225993	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225590	<2.5	2.5	5225993	N/A
>C10-C16 Hydrocarbons	mg/kg	26	<10	5225694	20	10	5225694	N/A
>C16-C21 Hydrocarbons	mg/kg	100	20	5225694	51	10	5225694	N/A
>C21-<C32 Hydrocarbons	mg/kg	490	150	5225694	120	15	5225694	N/A
Modified TPH (Tier1)	mg/kg	620	170	5222434	190	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	5225694	Yes	N/A	5225694	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	5225694	COMMENT (1)	N/A	5225694	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	109	94	5225694	106		5225694	
n-Dotriacontane - Extractable	%	127	109	5225694	114		5225694	
Isobutylbenzene - Volatile	%	84	84	5225590	100		5225993	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel / lube range. Lube oil fraction. (2) Lube oil fraction.								

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI285	FJI286		FJI287		FJI288			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS26	CWT-SS27	QC Batch	CWT-SS28	QC Batch	CWT-SS29	RDL	QC Batch	MDL

Petroleum Hydrocarbons

Benzene	mg/kg	<0.025	<0.025	5225993	<0.025	5239816	<0.025	0.025	5225993	N/A
Toluene	mg/kg	<0.025	<0.025	5225993	<0.025	5239816	<0.025	0.025	5225993	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5225993	<0.025	5239816	<0.025	0.025	5225993	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5225993	<0.050	5239816	<0.050	0.050	5225993	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225993	<2.5	5239816	<2.5	2.5	5225993	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5228077	<10	5237143	<10	10	5228077	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5228077	<10	5237143	<10	10	5228077	N/A
>C21-<C32 Hydrocarbons	mg/kg	32	26	5228077	21	5237143	<15	15	5228077	N/A
Modified TPH (Tier1)	mg/kg	32	26	5222434	21	5235321	<15	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	5228077	Yes	5237143	NA	N/A	5228077	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	5228077	COMMENT (1)	5237143	NA	N/A	5228077	N/A

Surrogate Recovery (%)

Isobutylbenzene - Extractable	%	74	95	5228077	86	5237143	98		5228077	
n-Dotriacontane - Extractable	%	107	89	5228077	94 (3)	5237143	90		5228077	
Isobutylbenzene - Volatile	%	109 (4)	106	5225993	112	5239816	103		5225993	

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Unidentified compound(s) in lube oil range.

(2) Possible lube oil fraction.

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

(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		FJI289	FJI290	FJI291	FJI292			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-SS30	CWT-SS31	CWT-SS32	CWT-SS33	RDL	QC Batch	MDL
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5225993	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5225993	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5225993	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	5225993	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	2.5	5225993	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5228077	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	10	5228077	N/A
>C21-<C32 Hydrocarbons	mg/kg	46	37	23	25	15	5228077	N/A
Modified TPH (Tier1)	mg/kg	46	37	23	25	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	Yes	Yes	N/A	5228077	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (2)	COMMENT (2)	COMMENT (1)	N/A	5228077	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	94	97	94	69		5228077	
n-Dotriacontane - Extractable	%	82	90 (3)	87	99		5228077	
Isobutylbenzene - Volatile	%	106 (4)	106	108	108		5225993	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (2) Possible lube oil fraction. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (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		FJI293	FJI293			FJI294			
Sampling Date		2017/10/13	2017/10/13			2017/10/13			
COC Number		N/A	N/A			N/A			
	UNITS	CWT-SS34	CWT-SS34 Lab-Dup	RDL	QC Batch	CWT-SS35	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025		0.025	5225993	<0.025	0.025	5239816	N/A
Toluene	mg/kg	<0.025		0.025	5225993	<0.025	0.025	5239816	N/A
Ethylbenzene	mg/kg	<0.025		0.025	5225993	<0.025	0.025	5239816	0.025
Total Xylenes	mg/kg	<0.050		0.050	5225993	<0.050	0.050	5239816	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5		2.5	5225993	<2.5	2.5	5239816	N/A
>C10-C16 Hydrocarbons	mg/kg	1000	1000	50	5225690	73	10	5237143	N/A
>C16-C21 Hydrocarbons	mg/kg	13000	12000	50	5225690	190	10	5237143	N/A
>C21-<C32 Hydrocarbons	mg/kg	14000	13000	75	5225690	780	15	5237143	N/A
Modified TPH (Tier1)	mg/kg	27000		75	5222434	1000	15	5235321	N/A
Reached Baseline at C32	mg/kg	No		N/A	5225690	No	N/A	5237143	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)		N/A	5225690	COMMENT (2)	N/A	5237143	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	102	121		5225690	92		5237143	
n-Dotriacontane - Extractable	%	134 (3)	128 (4)		5225690	116		5237143	
Isobutylbenzene - Volatile	%	64			5225993	103		5239816	
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) One product in fuel / lube range. Lube oil fraction. (3) TEH surrogate(s) not within acceptance limits. Analysis was repeated with similar results. Elevated TEH RDL(s) due to sample dilution. (4) Elevated TEH RDL(s) due to sample dilution.									

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI295			FJI296			FJI297			
Sampling Date		2017/10/13			2017/10/13			2017/10/13			
COC Number		N/A			N/A			N/A			
	UNITS	CWT-SS36	RDL	QC Batch	CWT-SS37	RDL	QC Batch	CWT-SS38	RDL	QC Batch	MDL

Petroleum Hydrocarbons

Benzene	mg/kg	<0.025	0.025	5225993	<0.025	0.025	5239816	<0.025	0.025	5225993	N/A
Toluene	mg/kg	<0.025	0.025	5225993	<0.025	0.025	5239816	<0.025	0.025	5225993	N/A
Ethylbenzene	mg/kg	<0.025	0.025	5225993	<0.025	0.025	5239816	<0.025	0.025	5225993	0.025
Total Xylenes	mg/kg	<0.050	0.050	5225993	<0.050	0.050	5239816	<0.050	0.050	5225993	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5225993	<2.5	2.5	5239816	<2.5	2.5	5225993	N/A
>C10-C16 Hydrocarbons	mg/kg	300	10	5228077	8800	100	5237143	<10	10	5228077	N/A
>C16-C21 Hydrocarbons	mg/kg	72	10	5228077	5000	100	5237143	<10	10	5228077	N/A
>C21-<C32 Hydrocarbons	mg/kg	27	15	5228077	12000	150	5237143	<15	15	5228077	N/A
Modified TPH (Tier1)	mg/kg	400	15	5222434	25000	150	5235321	<15	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes	N/A	5228077	No	N/A	5237143	NA	N/A	5228077	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5228077	COMMENT (2)	N/A	5237143	NA	N/A	5228077	N/A

Surrogate Recovery (%)

Isobutylbenzene - Extractable	%	95		5228077	87		5237143	90		5228077	
n-Dotriacontane - Extractable	%	113		5228077	224 (3)		5237143	91 (4)		5228077	
Isobutylbenzene - Volatile	%	108		5225993	84		5239816	99		5225993	

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) One product in fuel oil range.

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

(3) TEH surrogate(s) not within acceptance limits due to sample dilution / product interference. Elevated TEH RDL(s) due to sample dilution. TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

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

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FJI298	FJI299	FJI300	FJI301	FJI301	FJI302			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS39	CWT-SS40	CWT-SS41	CWT-SS42	CWT-SS42 Lab-Dup	CWT-SS43	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.025	5225993	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5225993	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	2.5	5225993	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10		<10	10	5228077	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10		<10	10	5228077	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	28	<15	<15		28	15	5228077	N/A
Modified TPH (Tier1)	mg/kg	<15	28	<15	<15		28	15	522434	N/A
Reached Baseline at C32	mg/kg	NA	Yes	NA	NA		Yes	N/A	5228077	N/A
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	NA	NA		COMMENT (2)	N/A	5228077	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	85	98	92	90		99		5228077	
n-Dotriacontane - Extractable	%	103 (3)	98 (3)	95	92		99		5228077	
Isobutylbenzene - Volatile	%	116	108	107	108 (4)	106 (4)	123 (4)		5225993	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Possible lube oil fraction. (2) Unidentified compound(s) in lube oil range. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (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		FJI303	FJI305	FJI307	FJI308		FJI309			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A	N/A		N/A			
	UNITS	CWT-SS44	CWT-SS46	CWT-SS48	CWT-SS49	QC Batch	CWT-SS50	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	5225993	<0.025	0.025	5225999	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	5225993	<0.025	0.025	5225999	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	5225993	<0.025	0.025	5225999	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	5225993	<0.050	0.050	5225999	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	5225993	<2.5	2.5	5225999	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	<10	5228077	<10	10	5228077	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	<10	5228077	<10	10	5228077	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	<15	48	5228077	<15	15	5228077	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	<15	48	5222434	<15	15	5222434	N/A
Reached Baseline at C32	mg/kg	NA	NA	NA	Yes	5228077	NA	N/A	5228077	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	NA	COMMENT (1)	5228077	NA	N/A	5228077	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	94	89	87	90	5228077	92		5228077	
n-Dotriacontane - Extractable	%	100 (2)	94 (2)	92 (2)	89 (2)	5228077	82 (2)		5228077	
Isobutylbenzene - Volatile	%	103 (3)	109 (3)	109	104	5225993	106 (3)		5225999	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Possible lube oil fraction. (2) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (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		FJI309		FJI310	FJI311	FJI312	FJI313			
Sampling Date		2017/10/13		2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A		N/A	N/A	N/A	N/A			
	UNITS	CWT-SS50 Lab-Dup	QC Batch	CWT-SS51	CWT-SS52	CWT-SS53	CWT-SS54	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	5225999	<0.025	<0.025	<0.025	<0.025	0.025	5225999	N/A
Toluene	mg/kg	<0.025	5225999	<0.025	<0.025	<0.025	<0.025	0.025	5225999	N/A
Ethylbenzene	mg/kg	<0.025	5225999	<0.025	<0.025	<0.025	<0.025	0.025	5225999	0.025
Total Xylenes	mg/kg	<0.050	5225999	<0.050	<0.050	<0.050	<0.050	0.050	5225999	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5225999	<2.5	<2.5	<2.5	<2.5	2.5	5225999	N/A
>C10-C16 Hydrocarbons	mg/kg		5228077	<10	<10	<10	<10	10	5225690	N/A
>C16-C21 Hydrocarbons	mg/kg		5228077	<10	<10	<10	<10	10	5225690	N/A
>C21-<C32 Hydrocarbons	mg/kg		5228077	24	<15	18	<15	15	5225690	N/A
Modified TPH (Tier1)	mg/kg		5222434	24	<15	18	<15	15	5222434	N/A
Reached Baseline at C32	mg/kg		5228077	Yes	NA	Yes	NA	N/A	5225690	N/A
Hydrocarbon Resemblance	mg/kg		5228077	COMMENT (1)	NA	COMMENT (2)	NA	N/A	5225690	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%		5228077	96	96	111	100		5225690	
n-Dotriacontane - Extractable	%		5228077	114	114	125	118		5225690	
Isobutylbenzene - Volatile	%	106 (3)	5225999	102 (3)	109	100	108 (3)		5225999	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Possible lube oil fraction. (2) Unidentified compound(s) in lube oil range. (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		FJI314			FJI315		FJI316			
Sampling Date		2017/10/13			2017/10/13		2017/10/13			
COC Number		N/A			N/A		N/A			
	UNITS	CWT-SS55	RDL	QC Batch	CWT-SS56	QC Batch	CWT-SS57	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.050	0.050	5225999	<0.025	5225999	<0.025	0.025	5225999	N/A
Toluene	mg/kg	<0.050	0.050	5225999	<0.025	5225999	<0.025	0.025	5225999	N/A
Ethylbenzene	mg/kg	<0.050	0.050	5225999	<0.025	5225999	<0.025	0.025	5225999	0.025
Total Xylenes	mg/kg	<0.10	0.10	5225999	<0.050	5225999	<0.050	0.050	5225999	N/A
C6 - C10 (less BTEX)	mg/kg	<5.0	5.0	5225999	<2.5	5225999	<2.5	2.5	5225999	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	10	5235292	<10	5225690	<10	10	5233173	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	10	5235292	<10	5225690	<10	10	5233173	N/A
>C21-<C32 Hydrocarbons	mg/kg	140	15	5235292	<15	5225690	<15	15	5233173	N/A
Modified TPH (Tier1)	mg/kg	140	15	5222434	<15	5222434	<15	15	5222434	N/A
Reached Baseline at C32	mg/kg	Yes	N/A	5235292	NA	5225690	NA	N/A	5233173	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5235292	NA	5225690	NA	N/A	5233173	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	88		5235292	96	5225690	97		5233173	
n-Dotriacontane - Extractable	%	126		5235292	118	5225690	111 (2)		5233173	
Isobutylbenzene - Volatile	%	100 (3)		5225999	100	5225999	106 (4)		5225999	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (2) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (3) Elevated VPH RDL(s) due to limited sample. (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		FJI317	FJI318		FJI319	FJI320			
Sampling Date		2017/10/13	2017/10/13		2017/10/13	2017/10/13			
COC Number		N/A	N/A		N/A	N/A			
	UNITS	CWT-SS58	CWT-SS59	QC Batch	CWT-SS60	CWT-SS61	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	0.025	5225999	N/A
Toluene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	0.025	5225999	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5225999	<0.025	<0.025	0.025	5225999	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5225999	<0.050	<0.050	0.050	5225999	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5225999	<2.5	<2.5	2.5	5225999	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5225690	<10	<10	10	5225690	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5225690	<10	<10	10	5225690	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	550	5225690	21	27	15	5225690	N/A
Modified TPH (Tier1)	mg/kg	<15	550	5222434	21	27	15	5222435	N/A
Reached Baseline at C32	mg/kg	NA	Yes	5225690	Yes	Yes	N/A	5225690	N/A
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	5225690	COMMENT (1)	COMMENT (1)	N/A	5225690	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	96	94	5225690	82	97		5225690	
n-Dotriacontane - Extractable	%	122	119	5225690	115	117		5225690	
Isobutylbenzene - Volatile	%	98 (2)	94	5225999	110	105 (2)		5225999	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Unidentified compound(s) in lube oil range. (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		FJI321	FJI322	FJI323		FJI324			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A		N/A			
	UNITS	CWT-SS62	CWT-SS63	CWT-SS64	QC Batch	CWT-SS65	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	5225999	<0.025	0.025	5239816	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	5225999	<0.025	0.025	5239816	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	5225999	<0.025	0.025	5239816	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	5225999	<0.050	0.050	5239816	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	5225999	5.0	2.5	5239816	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	5225690	110	10	5237143	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	14	5225690	57	10	5237143	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	43	5225690	490	15	5237143	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	57	5222435	660	15	5235321	N/A
Reached Baseline at C32	mg/kg	NA	NA	Yes	5225690	Yes	N/A	5237143	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	COMMENT (1)	5225690	COMMENT (2)	N/A	5237143	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	87	83	87	5225690	93		5237143	
n-Dotriacontane - Extractable	%	118	122	115	5225690	104 (3)		5237143	
Isobutylbenzene - Volatile	%	102 (4)	104 (4)	103 (4)	5225999	107 (4)		5239816	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel / lube range. Possible lube oil fraction. (2) One product in fuel oil range. Lube oil fraction. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (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		FJI325	FJI326	FJI327		FJI328			
Sampling Date		2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A		N/A			
	UNITS	CWT-SS66	CWT-SS67	CWT-SS68	QC Batch	CWT-SS70	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	5230623	<0.025	0.025	5230623	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	5230623	<0.025	0.025	5230623	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	5230623	<0.025	0.025	5230623	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	5230623	<0.050	0.050	5230623	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	5230623	<2.5	2.5	5230623	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	<10	5225690	<10	10	5233173	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	<10	5225690	<10	10	5233173	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	34	5225690	29	15	5233173	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	34	5222435	29	15	5227576	N/A
Reached Baseline at C32	mg/kg	NA	NA	Yes	5225690	Yes	N/A	5233173	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	COMMENT (1)	5225690	COMMENT (2)	N/A	5233173	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	84	73	87	5225690	97		5233173	
n-Dotriacontane - Extractable	%	121 (3)	112	117	5225690	102		5233173	
Isobutylbenzene - Volatile	%	99 (4)	93 (4)	90 (4)	5230623	93 (4)		5230623	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Possible lube oil fraction. (2) Unidentified compound(s) in lube oil range. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (4) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.									

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI264	FJI265		FJI266		FJI267			
Sampling Date		2017/10/13	2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-SS5	CWT-SS6	QC Batch	CWT-SS7	QC Batch	CWT-SS8	RDL	QC Batch	MDL

PCBs

Aroclor 1016	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	0.050	5237942	N/A
Aroclor 1221	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	0.050	5237942	N/A
Aroclor 1232	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	0.050	5237942	N/A
Aroclor 1248	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	0.050	5237942	N/A
Aroclor 1242	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	0.050	5237942	N/A
Aroclor 1254	ug/g	<0.050	<0.050	5225858	<0.050	5232173	<0.050	0.050	5237942	N/A
Aroclor 1260	ug/g	1.4	2.6	5225858	3.0	5232173	1.9	0.050	5237942	N/A
Calculated Total PCB	ug/g	1.4	2.6	5222428	3.0	5227483	1.9	0.050	5234618	N/A

Surrogate Recovery (%)

Decachlorobiphenyl	%	96	92	5225858	130	5232173	85		5237942	
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

Maxxam ID		FJI268	FJI269	FJI270	FJI271		FJI272			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A	N/A		N/A			
	UNITS	CWT-SS9	CWT-SS10	CWT-SS11	CWT-SS12	QC Batch	CWT-SS13	RDL	QC Batch	MDL

PCBs

Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	0.93	0.050	5237942	N/A
Aroclor 1260	ug/g	0.48	0.11	<0.050	0.071	5227406	0.45	0.050	5237942	N/A
Calculated Total PCB	ug/g	0.48	0.11	<0.050	0.071	5222428	1.4	0.050	5234618	N/A

Surrogate Recovery (%)

Decachlorobiphenyl	%	95	90	91	93	5227406	86		5237942	
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI274	FJI274	FJI276	FJI278	FJI280	FJI282			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS15	CWT-SS15 Lab-Dup	CWT-SS17	CWT-SS19	CWT-SS21	CWT-SS23	RDL	QC Batch	MDL
PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	1.4	<0.050	0.050	5227406	N/A
Aroclor 1260	ug/g	0.14	0.13	0.12	0.10	0.60	1.5	0.050	5227406	N/A
Calculated Total PCB	ug/g	0.14		0.12	0.10	2.0	1.5	0.050	5222428	N/A
Surrogate Recovery (%)										
Decachlorobiphenyl	%	94	89	80	93	87	85		5227406	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable										

Maxxam ID		FJI284	FJI286	FJI288	FJI290	FJI292				
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13				
COC Number		N/A	N/A	N/A	N/A	N/A				
	UNITS	CWT-SS25	CWT-SS27	CWT-SS29	CWT-SS31	CWT-SS33	RDL	QC Batch	MDL	
PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A	
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A	
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A	
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A	
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A	
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5227406	N/A	
Aroclor 1260	ug/g	0.26	0.42	<0.050	2.0	0.15	0.050	5227406	N/A	
Calculated Total PCB	ug/g	0.26	0.42	<0.050	2.0	0.15	0.050	5222428	N/A	
Surrogate Recovery (%)										
Decachlorobiphenyl	%	90	92	93	92	94		5227406		
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable										

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI293			FJI294		FJI295		FJI296			
Sampling Date		2017/10/13			2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A			N/A		N/A		N/A			
	UNITS	CWT-SS34	RDL	QC Batch	CWT-SS35	QC Batch	CWT-SS36	QC Batch	CWT-SS37	RDL	QC Batch	MDL

PCBs												
Aroclor 1016	ug/g	<0.15	0.15	5230592	<0.050	5237942	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1221	ug/g	<0.15	0.15	5230592	<0.050	5237942	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1232	ug/g	<0.15	0.15	5230592	<0.050	5237942	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1248	ug/g	<0.15	0.15	5230592	<0.050	5237942	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1242	ug/g	<0.15	0.15	5230592	<0.050	5237942	<0.050	5227406	<0.050	0.050	5237942	N/A
Aroclor 1254	ug/g	0.18	0.15	5230592	<0.050	5237942	<0.050	5227406	0.11	0.050	5237942	N/A
Aroclor 1260	ug/g	<0.15	0.15	5230592	0.41	5237942	<0.050	5227406	0.20	0.050	5237942	N/A
Calculated Total PCB	ug/g	<0.75	0.75	5222428	0.41	5234618	<0.050	5222428	0.32	0.050	5234618	N/A

Surrogate Recovery (%)												
Decachlorobiphenyl	%	68 (1)		5230592	92	5237942	83	5227406	73		5237942	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results. PCB:Unidentified (possibly halogenated) compounds detected. Elevated PCB RDL due to matrix / co-extractive interference.												

Maxxam ID		FJI301	FJI302	FJI303	FJI304		FJI305	FJI306				
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13	2017/10/13				
COC Number		N/A	N/A	N/A	N/A		N/A	N/A				
	UNITS	CWT-SS42	CWT-SS43	CWT-SS44	CWT-SS45	QC Batch	CWT-SS46	CWT-SS47	RDL	QC Batch	MDL	

PCBs												
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	5227406	<0.050	<0.050	0.050	5228079	N/A	
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	5222428	<0.050	<0.050	0.050	5222428	N/A	

Surrogate Recovery (%)												
Decachlorobiphenyl	%	89	91	91	95	5227406	86	88 (1)		5228079		
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB:Unidentified (possibly halogenated) compounds detected.												

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FJI307	FJI308	FJI309	FJI310	FJI316	FJI321			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13	2017/10/13			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-SS48	CWT-SS49	CWT-SS50	CWT-SS51	CWT-SS57	CWT-SS62	RDL	QC Batch	MDL

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5228079	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5222428	N/A

Surrogate Recovery (%)										
Decachlorobiphenyl	%	86	90	89	89	86	88		5228079	

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

Maxxam ID		FJI321	FJI323	FJI325	FJI327		FJI328			
Sampling Date		2017/10/13	2017/10/13	2017/10/13	2017/10/13		2017/10/13			
COC Number		N/A	N/A	N/A	N/A		N/A			
	UNITS	CWT-SS62 Lab-Dup	CWT-SS64	CWT-SS66	CWT-SS68	QC Batch	CWT-SS70	RDL	QC Batch	MDL

PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	<0.050	0.050	5232173	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	5228079	0.40	0.050	5232173	N/A
Calculated Total PCB	ug/g		<0.050	<0.050	<0.050	5222428	0.40	0.050	5227483	N/A

Surrogate Recovery (%)										
Decachlorobiphenyl	%	90	91	87	85	5228079	106		5232173	

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

ORGANOCHLORINATED PESTICIDES BY GC-ECD (SOIL)

Maxxam ID		FJI277		FJI293		FJI315		FJI318			
Sampling Date		2017/10/13		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A		N/A			
	UNITS	CWT-SS18	RDL	CWT-SS34	RDL	CWT-SS56	RDL	CWT-SS59	RDL	QC Batch	MDL
Calculated Parameters											
Aldrin + Dieldrin	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
Chlordane (Total)	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
DDT+ Metabolites	ug/g	<0.020	0.020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
Heptachlor + Heptachlor epoxide	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
o,p-DDD + p,p-DDD	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
o,p-DDE + p,p-DDE	ug/g	<0.0080	0.0080	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
o,p-DDT + p,p-DDT	ug/g	<0.020	0.020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
Total Endosulfan	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5227597	N/A
Total PCB	ug/g	1.7	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5227597	N/A
Pesticides & Herbicides											
Aldrin	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
a-Chlordane	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
g-Chlordane	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
o,p-DDD	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
p,p-DDD	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
o,p-DDE	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
p,p-DDE	ug/g	<0.0080	0.0080	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
o,p-DDT	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
p,p-DDT	ug/g	<0.020	0.020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Dieldrin	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Lindane	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Endosulfan I (alpha)	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Endosulfan II (beta)	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Endrin	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Heptachlor	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Heptachlor epoxide	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Hexachlorobenzene	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Methoxychlor	ug/g	<0.0050	0.0050	<0.25	0.25	<0.0050	0.0050	<0.050	0.050	5238211	0.0016
Aroclor 1016	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1221	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1232	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1242	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1248	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
RDL = Reportable Detection Limit											
QC Batch = Quality Control Batch											
N/A = Not Applicable											

ORGANOCHLORINATED PESTICIDES BY GC-ECD (SOIL)

Maxxam ID		FJI277		FJI293		FJI315		FJI318			
Sampling Date		2017/10/13		2017/10/13		2017/10/13		2017/10/13			
COC Number		N/A		N/A		N/A		N/A			
	UNITS	CWT-SS18	RDL	CWT-SS34	RDL	CWT-SS56	RDL	CWT-SS59	RDL	QC Batch	MDL
Aroclor 1254	ug/g	1.5	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1260	ug/g	0.19	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1262	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
Aroclor 1268	ug/g	<0.15	0.15	<0.75	0.75	<0.015	0.015	<0.15	0.15	5238211	0.0030
alpha-BHC	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
beta-BHC	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
delta-BHC	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Endosulfan sulfate	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Endrin aldehyde	ug/g	<0.030	0.030	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Endrin ketone	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Mirex	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Octachlorostyrene	ug/g	<0.0020	0.0020	<0.10	0.10	<0.0020	0.0020	<0.020	0.020	5238211	0.00040
Toxaphene	ug/g	<0.080	0.080	<4.0	4.0	<0.080	0.080	<0.80	0.80	5238211	0.020
Surrogate Recovery (%)											
2,4,5,6-Tetrachloro-m-xylene	%	85		66		62		87		5238211	
Decachlorobiphenyl	%	104		NC (1)		81		100		5238211	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) Surrogate recovery was not calculated (NC) due to matrix interferences.											

TEST SUMMARY

Maxxam ID: FJI260
Sample ID: CWT-SS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI260 Dup
Sample ID: CWT-SS1
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson

Maxxam ID: FJI261
Sample ID: CWT-SS2
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/26	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/25	Thea Holland

Maxxam ID: FJI262
Sample ID: CWT-SS3
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI263
Sample ID: CWT-SS4
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk

TEST SUMMARY

Maxxam ID: FJI263
Sample ID: CWT-SS4
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI264
Sample ID: CWT-SS5
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/24	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI265
Sample ID: CWT-SS6
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5225858	2017/10/23	2017/10/24	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/24	Automated Statchk

Maxxam ID: FJI266
Sample ID: CWT-SS7
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5233167	2017/10/26	2017/10/27	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5234500	2017/10/27	2017/10/27	Bryon Angevine
Moisture	BAL	5230118	N/A	2017/10/25	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5232173	2017/10/26	2017/10/27	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5227483	N/A	2017/10/27	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5227576	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5230623	N/A	2017/10/26	Thea Holland

Maxxam ID: FJI266 Dup
Sample ID: CWT-SS7
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5233167	2017/10/26	2017/10/27	Brittany Matthews

TEST SUMMARY

Maxxam ID: FJI267
Sample ID: CWT-SS8
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5235117	N/A	2017/11/03	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5237143	2017/10/28	2017/10/31	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5237805	2017/10/30	2017/10/30	Bryon Angevine
Moisture	BAL	5235625	N/A	2017/10/28	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5235898	2017/10/27	2017/11/02	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5237942	2017/10/27	2017/11/01	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5234618	N/A	2017/11/01	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5224436	N/A	2017/10/27	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5235321	N/A	2017/11/01	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

Maxxam ID: FJI267 Dup
Sample ID: CWT-SS8
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

Maxxam ID: FJI268
Sample ID: CWT-SS9
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI269
Sample ID: CWT-SS10
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

TEST SUMMARY

Maxxam ID: FJI270
Sample ID: CWT-SS11
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/20	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI271
Sample ID: CWT-SS12
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI271 Dup
Sample ID: CWT-SS12
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI272
Sample ID: CWT-SS13
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5235117	N/A	2017/11/03	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5237143	2017/10/28	2017/11/01	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5238053	2017/10/30	2017/10/30	Bryon Angevine
Moisture	BAL	5235625	N/A	2017/10/28	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5235898	2017/10/27	2017/11/02	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5237942	2017/10/27	2017/11/01	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5234618	N/A	2017/11/01	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5224436	N/A	2017/10/27	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5235321	N/A	2017/11/01	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5241887	N/A	2017/11/01	Amanda Swales

TEST SUMMARY

Maxxam ID: FJI272
Sample ID: CWT-SS13
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

Maxxam ID: FJI273
Sample ID: CWT-SS14
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
Total Organic Carbon in Soil	COMB	5230918	N/A	2017/10/29	Sarabjit Raina
ModTPH (T1) Calc. for Soil	CALC	5222287	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI273 Dup
Sample ID: CWT-SS14
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine

Maxxam ID: FJI273 Dup2
Sample ID: CWT-SS14
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/26	2017/10/26	Bryon Angevine

Maxxam ID: FJI274
Sample ID: CWT-SS15
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/23	Thea Holland

TEST SUMMARY

Maxxam ID: FJI274 Dup
Sample ID: CWT-SS15
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates

Maxxam ID: FJI275
Sample ID: CWT-SS16
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/24	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/24	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI276
Sample ID: CWT-SS17
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI277
Sample ID: CWT-SS18
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
OC Pesticides (Selected) & PCB	GC/ECD	5238211	2017/10/30	2017/10/31	Joy Zhang
OC Pesticides Summed Parameters	CALC	5227597	N/A	2017/10/24	Brad Newman
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/25	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI278
Sample ID: CWT-SS19
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/26	Tyler Johnson
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/25	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI279
Sample ID: CWT-SS20
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PAH Compounds by GC/MS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/25	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI280
Sample ID: CWT-SS21
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/24	Tyler Johnson
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI281
Sample ID: CWT-SS22
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222457	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI282
Sample ID: CWT-SS23
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI283
Sample ID: CWT-SS24
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225590	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI284
Sample ID: CWT-SS25
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225694	2017/10/23	2017/10/23	Tyler Johnson
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/25	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI285
Sample ID: CWT-SS26
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/27	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5223371	N/A	2017/10/23	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI285 Dup
Sample ID: CWT-SS26
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5223371	N/A	2017/10/23	David Balfour

Maxxam ID: FJI286
Sample ID: CWT-SS27
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5223371	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI287
Sample ID: CWT-SS28
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5237143	2017/10/28	2017/10/31	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5237805	2017/10/30	2017/10/30	Bryon Angevine
Moisture	BAL	5235625	N/A	2017/10/28	Jacob Henley
Asbestos (bulk) by PLM (Sub fr Bedford)		5224436	N/A	2017/10/27	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5235321	N/A	2017/11/01	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

Maxxam ID: FJI288
Sample ID: CWT-SS29
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5223371	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI289
Sample ID: CWT-SS30
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson

TEST SUMMARY

Maxxam ID: FJI289
Sample ID: CWT-SS30
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5223371	N/A	2017/10/23	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI290
Sample ID: CWT-SS31
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5225554	2017/10/23	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI291
Sample ID: CWT-SS32
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227329	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI291 Dup
Sample ID: CWT-SS32
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5227329	2017/10/24	2017/10/24	Bryon Angevine

Maxxam ID: FJI292
Sample ID: CWT-SS33
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/27	Tyler Johnson

TEST SUMMARY

Maxxam ID: FJI292
Sample ID: CWT-SS33
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI293
Sample ID: CWT-SS34
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/27	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
OC Pesticides (Selected) & PCB	GC/ECD	5238211	2017/10/30	2017/10/31	Joy Zhang
OC Pesticides Summed Parameters	CALC	5227597	N/A	2017/10/24	Brad Newman
PCBs in soil by GC/ECD	GC/ECD	5230592	2017/10/25	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/31	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI293 Dup
Sample ID: CWT-SS34
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney

Maxxam ID: FJI294
Sample ID: CWT-SS35
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5235117	N/A	2017/11/03	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5237143	2017/10/28	2017/10/31	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5237805	2017/10/30	2017/10/30	Bryon Angevine
Moisture	BAL	5235625	N/A	2017/10/28	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5235898	2017/10/27	2017/11/02	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5237942	2017/10/27	2017/11/01	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5234618	N/A	2017/11/01	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5224436	N/A	2017/10/27	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5235321	N/A	2017/11/01	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

TEST SUMMARY

Maxxam ID: FJI295
Sample ID: CWT-SS36
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI296
Sample ID: CWT-SS37
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5235117	N/A	2017/11/03	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5237143	2017/10/28	2017/11/01	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5237805	2017/10/30	2017/10/30	Bryon Angevine
Moisture	BAL	5235625	N/A	2017/10/28	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5235898	2017/10/27	2017/11/02	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5237942	2017/10/27	2017/11/01	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5234618	N/A	2017/11/01	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5224436	N/A	2017/10/27	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5235321	N/A	2017/11/01	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

Maxxam ID: FJI297
Sample ID: CWT-SS38
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI298
Sample ID: CWT-SS39
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI299
Sample ID: CWT-SS40
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI300
Sample ID: CWT-SS41
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI301
Sample ID: CWT-SS42
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI301 Dup
Sample ID: CWT-SS42
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI302
Sample ID: CWT-SS43
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates

TEST SUMMARY

Maxxam ID: FJI302
Sample ID: CWT-SS43
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI303
Sample ID: CWT-SS44
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI304
Sample ID: CWT-SS45
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5227406	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk

Maxxam ID: FJI304 Dup
Sample ID: CWT-SS45
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley

Maxxam ID: FJI305
Sample ID: CWT-SS46
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI306
Sample ID: CWT-SS47
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk

Maxxam ID: FJI307
Sample ID: CWT-SS48
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/26	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI308
Sample ID: CWT-SS49
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/27	Tyler Johnson
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225993	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI309
Sample ID: CWT-SS50
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5228077	2017/10/24	2017/10/27	Tyler Johnson
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/23	Thea Holland

TEST SUMMARY

Maxxam ID: FJI309 Dup
Sample ID: CWT-SS50
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI310
Sample ID: CWT-SS51
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/25	Marley Gidney
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI311
Sample ID: CWT-SS52
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/25	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5227327	2017/10/24	2017/10/24	Bryon Angevine
Moisture	BAL	5222587	N/A	2017/10/20	Jacob Henley
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/23	Thea Holland

Maxxam ID: FJI312
Sample ID: CWT-SS53
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/25	Marley Gidney
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
Total Organic Carbon in Soil	COMB	5230918	N/A	2017/10/29	Sarabjit Raina
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI313
Sample ID: CWT-SS54
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/25	Marley Gidney

TEST SUMMARY

Maxxam ID: FJI313
Sample ID: CWT-SS54
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI314
Sample ID: CWT-SS55
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5235292	2017/10/27	2017/10/29	Brittany Matthews
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/30	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI315
Sample ID: CWT-SS56
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
OC Pesticides (Selected) & PCB	GC/ECD	5238211	2017/10/30	2017/10/31	Joy Zhang
OC Pesticides Summed Parameters	CALC	5227597	N/A	2017/10/24	Brad Newman
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI316
Sample ID: CWT-SS57
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5233173	2017/10/26	2017/10/28	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/29	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI317
Sample ID: CWT-SS58
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI318
Sample ID: CWT-SS59
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
OC Pesticides (Selected) & PCB	GC/ECD	5238211	2017/10/30	2017/10/31	Joy Zhang
OC Pesticides Summed Parameters	CALC	5227597	N/A	2017/10/25	Brad Newman
ModTPH (T1) Calc. for Soil	CALC	5222434	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI319
Sample ID: CWT-SS60
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI320
Sample ID: CWT-SS61
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI321
Sample ID: CWT-SS62
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI321 Dup
Sample ID: CWT-SS62
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates

Maxxam ID: FJI322
Sample ID: CWT-SS63
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

Maxxam ID: FJI323
Sample ID: CWT-SS64
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
Total Organic Carbon in Soil	COMB	5230918	N/A	2017/10/29	Sarabjit Raina
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5225999	N/A	2017/10/24	Thea Holland

TEST SUMMARY

Maxxam ID: FJI324
Sample ID: CWT-SS65
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5237143	2017/10/28	2017/11/01	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5237805	2017/10/30	2017/10/30	Bryon Angevine
Moisture	BAL	5235625	N/A	2017/10/28	Jacob Henley
Asbestos (bulk) by PLM (Sub fr Bedford)		5224436	N/A	2017/10/27	Eric Dearman
ModTPH (T1) Calc. for Soil	CALC	5235321	N/A	2017/11/01	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5239816	N/A	2017/10/31	Thea Holland

Maxxam ID: FJI325
Sample ID: CWT-SS66
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5222426	N/A	2017/10/28	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5225548	2017/10/23	2017/10/27	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5230623	N/A	2017/10/26	Thea Holland

Maxxam ID: FJI325 Dup
Sample ID: CWT-SS66
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour

Maxxam ID: FJI326
Sample ID: CWT-SS67
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5226049	N/A	2017/10/25	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5230623	N/A	2017/10/26	Thea Holland

TEST SUMMARY

Maxxam ID: FJI327
Sample ID: CWT-SS68
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5225690	2017/10/23	2017/10/26	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5225311	2017/10/23	2017/10/23	Bryon Angevine
Moisture	BAL	5222931	N/A	2017/10/23	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5228079	2017/10/24	2017/10/26	Lisa Gates
PCB Aroclor sum (soil)	CALC	5222428	N/A	2017/10/26	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5222435	N/A	2017/10/27	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5230623	N/A	2017/10/26	Thea Holland

Maxxam ID: FJI328
Sample ID: CWT-SS70
Matrix: Soil

Collected: 2017/10/13
Shipped:
Received: 2017/10/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5233173	2017/10/26	2017/10/28	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5234500	2017/10/27	2017/10/27	Bryon Angevine
Moisture	BAL	5230118	N/A	2017/10/25	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5232173	2017/10/26	2017/10/27	Chloe Bramble
PCB Aroclor sum (soil)	CALC	5227483	N/A	2017/10/27	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5227576	N/A	2017/10/29	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5230623	N/A	2017/10/26	Thea Holland

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.1°C
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TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

Sample FJI277 [CWT-SS18] : OC Pesticide Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample FJI293 [CWT-SS34] : OC Pesticide Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample FJI318 [CWT-SS59] : OC Pesticide Analysis: Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225548	D10-Anthracene	2017/10/25	86	50 - 130	96	50 - 130	101	%				
5225548	D14-Terphenyl (FS)	2017/10/25	97	50 - 130	104	50 - 130	114	%				
5225548	D8-Acenaphthylene	2017/10/25	86	50 - 130	93	50 - 130	108	%				
5225590	Isobutylbenzene - Volatile	2017/10/23	75	60 - 130	94	60 - 130	100	%				
5225690	Isobutylbenzene - Extractable	2017/10/25	121	30 - 130	97	30 - 130	98	%				
5225690	n-Dotriacontane - Extractable	2017/10/25	130 (1)	30 - 130	111	30 - 130	117	%				
5225694	Isobutylbenzene - Extractable	2017/10/23	103	30 - 130	95	30 - 130	95	%				
5225694	n-Dotriacontane - Extractable	2017/10/23	109	30 - 130	108	30 - 130	101	%				
5225858	Decachlorobiphenyl	2017/10/24	87	30 - 130	93	30 - 130	92	%				
5225993	Isobutylbenzene - Volatile	2017/10/24	105 (2)	60 - 130	101	60 - 130	97	%				
5225999	Isobutylbenzene - Volatile	2017/10/23	87 (2)	60 - 130	97	60 - 130	98	%				
5226049	4-Bromofluorobenzene	2017/10/25	101	60 - 140	102	60 - 140	100	%				
5226049	D10-o-Xylene	2017/10/25	95 (3)	60 - 130	102	60 - 130	96	%				
5226049	D4-1,2-Dichloroethane	2017/10/25	101	60 - 140	98	60 - 140	97	%				
5226049	D8-Toluene	2017/10/25	97	60 - 140	98	60 - 140	97	%				
5227406	Decachlorobiphenyl	2017/10/26	97	30 - 130	91	30 - 130	93	%				
5228077	Isobutylbenzene - Extractable	2017/10/26	99	30 - 130	103	30 - 130	89	%				
5228077	n-Dotriacontane - Extractable	2017/10/26	98	30 - 130	97	30 - 130	98	%				
5228079	Decachlorobiphenyl	2017/10/26	88	30 - 130	91	30 - 130	91	%				
5230592	Decachlorobiphenyl	2017/10/26	95	30 - 130	105	30 - 130	107	%				
5230623	Isobutylbenzene - Volatile	2017/10/26	79 (2)	60 - 130	88	60 - 130	90	%				
5232173	Decachlorobiphenyl	2017/10/27	100	30 - 130	102	30 - 130	102	%				
5233167	Isobutylbenzene - Extractable	2017/10/27	87	30 - 130	87	30 - 130	91	%				
5233167	n-Dotriacontane - Extractable	2017/10/27	105 (5)	30 - 130	96	30 - 130	103	%				
5233173	Isobutylbenzene - Extractable	2017/10/28	101	30 - 130	96	30 - 130	89	%				
5233173	n-Dotriacontane - Extractable	2017/10/28	104 (5)	30 - 130	111	30 - 130	105	%				
5235292	Isobutylbenzene - Extractable	2017/10/29	87	30 - 130	89	30 - 130	78	%				
5235292	n-Dotriacontane - Extractable	2017/10/29	107	30 - 130	109	30 - 130	92	%				
5235898	D10-Anthracene	2017/11/01	96	50 - 130	93	50 - 130	99	%				
5235898	D14-Terphenyl (FS)	2017/11/01	87	50 - 130	88	50 - 130	91	%				

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5235898	D8-Acenaphthylene	2017/11/01	95	50 - 130	91	50 - 130	91	%				
5237143	Isobutylbenzene - Extractable	2017/10/31	86	30 - 130	86	30 - 130	83	%				
5237143	n-Dotriacontane - Extractable	2017/10/31	100 (6)	30 - 130	93	30 - 130	84	%				
5237942	Decachlorobiphenyl	2017/10/31	99	30 - 130	99	30 - 130	99	%				
5238211	2,4,5,6-Tetrachloro-m-xylene	2017/10/31	84	50 - 130	83	50 - 130	90	%				
5238211	Decachlorobiphenyl	2017/10/31	124	50 - 130	108	50 - 130	112	%				
5239816	Isobutylbenzene - Volatile	2017/10/31	174 (7)	60 - 130	94	60 - 130	98	%				
5241887	4-Bromofluorobenzene	2017/11/01	101	60 - 140	101	60 - 140	101	%				
5241887	D10-o-Xylene	2017/11/01	109	60 - 130	104	60 - 130	108	%				
5241887	D4-1,2-Dichloroethane	2017/11/01	96	60 - 140	96	60 - 140	94	%				
5241887	D8-Toluene	2017/11/01	101	60 - 140	101	60 - 140	101	%				
5222457	Moisture	2017/10/20							6.5	25		
5222587	Moisture	2017/10/20							5.7	25		
5222931	Moisture	2017/10/23							14	25		
5223371	Moisture	2017/10/23							5.3	25		
5225311	Acid Extractable Aluminum (Al)	2017/10/23					<10	mg/kg	14	35		
5225311	Acid Extractable Antimony (Sb)	2017/10/23	96	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Arsenic (As)	2017/10/23	98	75 - 125	101	75 - 125	<2.0	mg/kg	6.3	35		
5225311	Acid Extractable Barium (Ba)	2017/10/23	112	75 - 125	96	75 - 125	<5.0	mg/kg	6.8	35		
5225311	Acid Extractable Beryllium (Be)	2017/10/23	101	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Bismuth (Bi)	2017/10/23	105	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Boron (B)	2017/10/23	97	75 - 125	99	75 - 125	<50	mg/kg	NC	35		
5225311	Acid Extractable Cadmium (Cd)	2017/10/23	101	75 - 125	97	75 - 125	<0.30	mg/kg	NC	35		
5225311	Acid Extractable Chromium (Cr)	2017/10/23	106	75 - 125	101	75 - 125	<2.0	mg/kg	8.5	35		
5225311	Acid Extractable Cobalt (Co)	2017/10/23	106	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		
5225311	Acid Extractable Copper (Cu)	2017/10/23	106	75 - 125	99	75 - 125	<2.0	mg/kg	11	35		
5225311	Acid Extractable Iron (Fe)	2017/10/23					<50	mg/kg	0.13	35		
5225311	Acid Extractable Lead (Pb)	2017/10/23	NC	75 - 125	96	75 - 125	<0.50	mg/kg	16	35		
5225311	Acid Extractable Lithium (Li)	2017/10/23	104	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Manganese (Mn)	2017/10/23	115	75 - 125	101	75 - 125	<2.0	mg/kg	15	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225311	Acid Extractable Mercury (Hg)	2017/10/23	100	75 - 125	101	75 - 125	<0.10	mg/kg	6.1	35		
5225311	Acid Extractable Molybdenum (Mo)	2017/10/23	104	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Nickel (Ni)	2017/10/23	107	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Rubidium (Rb)	2017/10/23	104	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Selenium (Se)	2017/10/23	99	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
5225311	Acid Extractable Silver (Ag)	2017/10/23	103	75 - 125	100	75 - 125	<0.50	mg/kg	NC	35		
5225311	Acid Extractable Strontium (Sr)	2017/10/23	115	75 - 125	102	75 - 125	<5.0	mg/kg	11	35		
5225311	Acid Extractable Thallium (Tl)	2017/10/23	104	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5225311	Acid Extractable Tin (Sn)	2017/10/23	101	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225311	Acid Extractable Uranium (U)	2017/10/23	101	75 - 125	97	75 - 125	<0.10	mg/kg	6.8	35		
5225311	Acid Extractable Vanadium (V)	2017/10/23	106	75 - 125	99	75 - 125	<2.0	mg/kg	4.4	35		
5225311	Acid Extractable Zinc (Zn)	2017/10/23	96	75 - 125	99	75 - 125	<5.0	mg/kg	1.8	35		
5225548	1-Methylnaphthalene	2017/10/25	79	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50		
5225548	2-Methylnaphthalene	2017/10/25	83	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5225548	Acenaphthene	2017/10/25	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5225548	Acenaphthylene	2017/10/25	84	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50		
5225548	Anthracene	2017/10/25	88	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(a)anthracene	2017/10/25	89	30 - 130	97	30 - 130	<0.010	mg/kg	27	50		
5225548	Benzo(a)pyrene	2017/10/25	96	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(b)fluoranthene	2017/10/25	97	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(g,h,i)perylene	2017/10/25	100	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(j)fluoranthene	2017/10/25	99	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5225548	Benzo(k)fluoranthene	2017/10/25	96	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50		
5225548	Chrysene	2017/10/25	83	30 - 130	93	30 - 130	<0.010	mg/kg	22	50		
5225548	Dibenz(a,h)anthracene	2017/10/25	97	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50		
5225548	Fluoranthene	2017/10/25	91	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5225548	Fluorene	2017/10/25	87	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5225548	Indeno(1,2,3-cd)pyrene	2017/10/25	98	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5225548	Naphthalene	2017/10/25	78	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5225548	Perylene	2017/10/25	95	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225548	Phenanthrene	2017/10/25	115	30 - 130	123	30 - 130	<0.010	mg/kg	NC	50		
5225548	Pyrene	2017/10/25	86	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5225554	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	1.6	35		
5225554	Acid Extractable Antimony (Sb)	2017/10/24	102	75 - 125	106	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Arsenic (As)	2017/10/24	97	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Barium (Ba)	2017/10/24	115	75 - 125	105	75 - 125	<5.0	mg/kg	5.5	35		
5225554	Acid Extractable Beryllium (Be)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Bismuth (Bi)	2017/10/24	105	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Boron (B)	2017/10/24	99	75 - 125	105	75 - 125	<50	mg/kg	NC	35		
5225554	Acid Extractable Cadmium (Cd)	2017/10/24	100	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5225554	Acid Extractable Chromium (Cr)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	5.1	35		
5225554	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	100	75 - 125	<1.0	mg/kg	26	35		
5225554	Acid Extractable Copper (Cu)	2017/10/24	97	75 - 125	99	75 - 125	<2.0	mg/kg	1.8	35		
5225554	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	12	35		
5225554	Acid Extractable Lead (Pb)	2017/10/24	101	75 - 125	102	75 - 125	<0.50	mg/kg	14	35		
5225554	Acid Extractable Lithium (Li)	2017/10/24	107	75 - 125	102	75 - 125	<2.0	mg/kg	12	35		
5225554	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	103	75 - 125	<2.0	mg/kg	21	35		
5225554	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35		
5225554	Acid Extractable Molybdenum (Mo)	2017/10/24	104	75 - 125	108	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Nickel (Ni)	2017/10/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	21	35		
5225554	Acid Extractable Rubidium (Rb)	2017/10/24	102	75 - 125	103	75 - 125	<2.0	mg/kg	14	35		
5225554	Acid Extractable Selenium (Se)	2017/10/24	97	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
5225554	Acid Extractable Silver (Ag)	2017/10/24	100	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35		
5225554	Acid Extractable Strontium (Sr)	2017/10/24	110	75 - 125	104	75 - 125	<5.0	mg/kg	16	35		
5225554	Acid Extractable Thallium (Tl)	2017/10/24	104	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5225554	Acid Extractable Tin (Sn)	2017/10/24	101	75 - 125	111	75 - 125	<2.0	mg/kg	NC	35		
5225554	Acid Extractable Uranium (U)	2017/10/24	101	75 - 125	100	75 - 125	<0.10	mg/kg	33	35		
5225554	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	101	75 - 125	<2.0	mg/kg	6.1	35		
5225554	Acid Extractable Zinc (Zn)	2017/10/24	105	75 - 125	101	75 - 125	<5.0	mg/kg	11	35		
5225590	Benzene	2017/10/23	90	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5225590	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50		
5225590	Ethylbenzene	2017/10/23	101	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5225590	Toluene	2017/10/23	98	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5225590	Total Xylenes	2017/10/23	101	60 - 130	93	60 - 140	<0.050	mg/kg	NC	50		
5225690	>C10-C16 Hydrocarbons	2017/10/26	NC	30 - 130	101	30 - 130	<10	mg/kg	1.5	50		
5225690	>C16-C21 Hydrocarbons	2017/10/26	NC	30 - 130	97	30 - 130	<10	mg/kg	8.0	50		
5225690	>C21-<C32 Hydrocarbons	2017/10/26	NC	30 - 130	121	30 - 130	<15	mg/kg	5.0	50		
5225694	>C10-C16 Hydrocarbons	2017/10/23	84	30 - 130	99	30 - 130	<10	mg/kg	43	50		
5225694	>C16-C21 Hydrocarbons	2017/10/23	75	30 - 130	88	30 - 130	<10	mg/kg	27	50		
5225694	>C21-<C32 Hydrocarbons	2017/10/23	86	30 - 130	103	30 - 130	<15	mg/kg	17	50		
5225858	Aroclor 1016	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1221	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1232	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1242	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1248	2017/10/24					<0.050	ug/g	NC	50		
5225858	Aroclor 1254	2017/10/24	84	30 - 130	98	30 - 130	<0.050	ug/g	NC	50		
5225858	Aroclor 1260	2017/10/24					<0.050	ug/g	NC	50		
5225993	Benzene	2017/10/24	85	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50		
5225993	C6 - C10 (less BTEX)	2017/10/24					<2.5	mg/kg	NC	50		
5225993	Ethylbenzene	2017/10/24	90	60 - 130	99	60 - 140	<0.025	mg/kg	NC	50		
5225993	Toluene	2017/10/24	83	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50		
5225993	Total Xylenes	2017/10/24	87	60 - 130	99	60 - 140	<0.050	mg/kg	NC	50		
5225999	Benzene	2017/10/23	82	60 - 130	92	60 - 140	<0.025	mg/kg	NC	50		
5225999	C6 - C10 (less BTEX)	2017/10/23					<2.5	mg/kg	NC	50		
5225999	Ethylbenzene	2017/10/23	88	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5225999	Toluene	2017/10/23	80	60 - 130	92	60 - 140	<0.025	mg/kg	NC	50		
5225999	Total Xylenes	2017/10/23	97	60 - 130	94	60 - 140	<0.050	mg/kg	NC	50		
5226049	1,1,1-Trichloroethane	2017/10/25	108	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	1,1,2,2-Tetrachloroethane	2017/10/25	105	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	1,1,2-Trichloroethane	2017/10/25	105	60 - 140	106	60 - 130	<25	ug/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5226049	1,1-Dichloroethane	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	1,1-Dichloroethylene	2017/10/25	103	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	1,2-Dichlorobenzene	2017/10/25	93	60 - 140	97	60 - 130	<25	ug/kg	NC	50		
5226049	1,2-Dichloroethane	2017/10/25	101	60 - 140	103	60 - 130	<25	ug/kg	NC	50		
5226049	1,2-Dichloropropane	2017/10/25	102	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	1,3-Dichlorobenzene	2017/10/25	94	60 - 140	100	60 - 130	<25	ug/kg	NC	50		
5226049	1,4-Dichlorobenzene	2017/10/25	92	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5226049	Benzene	2017/10/25	102	60 - 140	107	60 - 130	<25	ug/kg	NC	50		
5226049	Bromodichloromethane	2017/10/25	106	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5226049	Bromoform	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5226049	Bromomethane	2017/10/25	92	60 - 140	104	60 - 140	<50	ug/kg	NC	50		
5226049	Carbon Tetrachloride	2017/10/25	107	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	Chlorobenzene	2017/10/25	99	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5226049	Chloroethane	2017/10/25	92	60 - 140	100	60 - 140	<200	ug/kg	NC	50		
5226049	Chloroform	2017/10/25	99	60 - 140	101	60 - 130	<25	ug/kg	NC	50		
5226049	cis-1,2-Dichloroethylene	2017/10/25	110	60 - 140	114	60 - 130	<25	ug/kg	NC	50		
5226049	cis-1,3-Dichloropropene	2017/10/25	100	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5226049	Dibromochloromethane	2017/10/25	107	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5226049	Ethylbenzene	2017/10/25	97	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	Ethylene Dibromide	2017/10/25	103	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5226049	Methylene Chloride(Dichloromethane)	2017/10/25	111	60 - 140	115	60 - 130	<25	ug/kg	NC	50		
5226049	o-Xylene	2017/10/25	99	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5226049	p+m-Xylene	2017/10/25	97	60 - 140	106	60 - 130	<25	ug/kg	NC	50		
5226049	Styrene	2017/10/25	84	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5226049	Tetrachloroethylene	2017/10/25	109	60 - 140	117	60 - 130	<25	ug/kg	NC	50		
5226049	Toluene	2017/10/25	100	60 - 140	107	60 - 130	<25	ug/kg	NC	50		
5226049	Total Xylenes	2017/10/25					<50	ug/kg	NC	50		
5226049	trans-1,2-Dichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<25	ug/kg	NC	50		
5226049	trans-1,3-Dichloropropene	2017/10/25	88	60 - 140	94	60 - 130	<25	ug/kg	NC	50		
5226049	Trichloroethylene	2017/10/25	108	60 - 140	115	60 - 130	<10	ug/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5226049	Trichlorofluoromethane (FREON 11)	2017/10/25	90	60 - 140	105	60 - 140	<25	ug/kg	NC	50		
5226049	Vinyl Chloride	2017/10/25	95	60 - 140	109	60 - 140	<20	ug/kg	NC	50		
5227327	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	0.95	35		
5227327	Acid Extractable Antimony (Sb)	2017/10/24	98	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Arsenic (As)	2017/10/24	100	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Barium (Ba)	2017/10/24	NC	75 - 125	100	75 - 125	<5.0	mg/kg	2.5	35		
5227327	Acid Extractable Beryllium (Be)	2017/10/24	105	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Bismuth (Bi)	2017/10/24	102	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Boron (B)	2017/10/24	101	75 - 125	108	75 - 125	<50	mg/kg	NC	35		
5227327	Acid Extractable Cadmium (Cd)	2017/10/24	102	75 - 125	102	75 - 125	<0.30	mg/kg	3.3	35		
5227327	Acid Extractable Chromium (Cr)	2017/10/24	98	75 - 125	102	75 - 125	<2.0	mg/kg	9.3	35		
5227327	Acid Extractable Cobalt (Co)	2017/10/24	101	75 - 125	104	75 - 125	<1.0	mg/kg	17	35		
5227327	Acid Extractable Copper (Cu)	2017/10/24	89	75 - 125	104	75 - 125	<2.0	mg/kg	18	35		
5227327	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	1.5	35		
5227327	Acid Extractable Lead (Pb)	2017/10/24	NC	75 - 125	102	75 - 125	<0.50	mg/kg	15	35		
5227327	Acid Extractable Lithium (Li)	2017/10/24	103	75 - 125	102	75 - 125	<2.0	mg/kg	1.8	35		
5227327	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	105	75 - 125	<2.0	mg/kg	1.2	35		
5227327	Acid Extractable Mercury (Hg)	2017/10/24	98	75 - 125	106	75 - 125	<0.10	mg/kg	NC	35		
5227327	Acid Extractable Molybdenum (Mo)	2017/10/24	99	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Nickel (Ni)	2017/10/24	101	75 - 125	104	75 - 125	<2.0	mg/kg	8.7	35		
5227327	Acid Extractable Rubidium (Rb)	2017/10/24	100	75 - 125	99	75 - 125	<2.0	mg/kg	0.70	35		
5227327	Acid Extractable Selenium (Se)	2017/10/24	104	75 - 125	104	75 - 125	<1.0	mg/kg	NC	35		
5227327	Acid Extractable Silver (Ag)	2017/10/24	106	75 - 125	104	75 - 125	<0.50	mg/kg	NC	35		
5227327	Acid Extractable Strontium (Sr)	2017/10/24	106	75 - 125	102	75 - 125	<5.0	mg/kg	3.1	35		
5227327	Acid Extractable Thallium (Tl)	2017/10/24	102	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5227327	Acid Extractable Tin (Sn)	2017/10/24	NC	75 - 125	107	75 - 125	<2.0	mg/kg	NC	35		
5227327	Acid Extractable Uranium (U)	2017/10/24	105	75 - 125	105	75 - 125	<0.10	mg/kg	15	35		
5227327	Acid Extractable Vanadium (V)	2017/10/24	101	75 - 125	102	75 - 125	<2.0	mg/kg	10	35		
5227327	Acid Extractable Zinc (Zn)	2017/10/24	NC	75 - 125	105	75 - 125	<5.0	mg/kg	57 (4)	35		
5227329	Acid Extractable Aluminum (Al)	2017/10/24					<10	mg/kg	2.1	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5227329	Acid Extractable Antimony (Sb)	2017/10/24	103	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Arsenic (As)	2017/10/24	101	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Barium (Ba)	2017/10/24	109	75 - 125	103	75 - 125	<5.0	mg/kg	11	35		
5227329	Acid Extractable Beryllium (Be)	2017/10/24	109	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Bismuth (Bi)	2017/10/24	107	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Boron (B)	2017/10/24	106	75 - 125	106	75 - 125	<50	mg/kg	NC	35		
5227329	Acid Extractable Cadmium (Cd)	2017/10/24	102	75 - 125	103	75 - 125	<0.30	mg/kg	4.7	35		
5227329	Acid Extractable Chromium (Cr)	2017/10/24	101	75 - 125	100	75 - 125	<2.0	mg/kg	4.1	35		
5227329	Acid Extractable Cobalt (Co)	2017/10/24	106	75 - 125	103	75 - 125	<1.0	mg/kg	0.031	35		
5227329	Acid Extractable Copper (Cu)	2017/10/24	105	75 - 125	101	75 - 125	<2.0	mg/kg	1.2	35		
5227329	Acid Extractable Iron (Fe)	2017/10/24					<50	mg/kg	1.7	35		
5227329	Acid Extractable Lead (Pb)	2017/10/24	104	75 - 125	100	75 - 125	<0.50	mg/kg	23	35		
5227329	Acid Extractable Lithium (Li)	2017/10/24	104	75 - 125	101	75 - 125	<2.0	mg/kg	13	35		
5227329	Acid Extractable Manganese (Mn)	2017/10/24	NC	75 - 125	104	75 - 125	<2.0	mg/kg	2.4	35		
5227329	Acid Extractable Mercury (Hg)	2017/10/24	99	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35		
5227329	Acid Extractable Molybdenum (Mo)	2017/10/24	103	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Nickel (Ni)	2017/10/24	107	75 - 125	104	75 - 125	<2.0	mg/kg	10	35		
5227329	Acid Extractable Rubidium (Rb)	2017/10/24	104	75 - 125	100	75 - 125	<2.0	mg/kg	0.87	35		
5227329	Acid Extractable Selenium (Se)	2017/10/24	104	75 - 125	104	75 - 125	<1.0	mg/kg	NC	35		
5227329	Acid Extractable Silver (Ag)	2017/10/24	104	75 - 125	102	75 - 125	<0.50	mg/kg	NC	35		
5227329	Acid Extractable Strontium (Sr)	2017/10/24	108	75 - 125	99	75 - 125	<5.0	mg/kg	3.2	35		
5227329	Acid Extractable Thallium (Tl)	2017/10/24	106	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5227329	Acid Extractable Tin (Sn)	2017/10/24	99	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5227329	Acid Extractable Uranium (U)	2017/10/24	106	75 - 125	102	75 - 125	<0.10	mg/kg	7.4	35		
5227329	Acid Extractable Vanadium (V)	2017/10/24	102	75 - 125	102	75 - 125	<2.0	mg/kg	4.2	35		
5227329	Acid Extractable Zinc (Zn)	2017/10/24	NC	75 - 125	104	75 - 125	<5.0	mg/kg	4.5	35		
5227406	Aroclor 1016	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1221	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1232	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1242	2017/10/26					<0.050	ug/g	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5227406	Aroclor 1248	2017/10/26					<0.050	ug/g	NC	50		
5227406	Aroclor 1254	2017/10/26	109	30 - 130	103	30 - 130	<0.050	ug/g	NC	50		
5227406	Aroclor 1260	2017/10/26					<0.050	ug/g	7.4	50		
5228077	>C10-C16 Hydrocarbons	2017/10/26	102	30 - 130	88	30 - 130	<10	mg/kg	NC	50		
5228077	>C16-C21 Hydrocarbons	2017/10/26	76	30 - 130	82	30 - 130	<10	mg/kg	NC	50		
5228077	>C21-<C32 Hydrocarbons	2017/10/26	105	30 - 130	107	30 - 130	<15	mg/kg	4.1	50		
5228079	Aroclor 1016	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1221	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1232	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1242	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1248	2017/10/26					<0.050	ug/g	NC	50		
5228079	Aroclor 1254	2017/10/26	96	30 - 130	99	30 - 130	<0.050	ug/g	NC	50		
5228079	Aroclor 1260	2017/10/26					<0.050	ug/g	NC	50		
5230118	Moisture	2017/10/25							6.8	25		
5230592	Aroclor 1016	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1221	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1232	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1242	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1248	2017/10/26					<0.050	ug/g	NC	50		
5230592	Aroclor 1254	2017/10/26	74	30 - 130	109	30 - 130	<0.050	ug/g	NC	50		
5230592	Aroclor 1260	2017/10/26					<0.050	ug/g	NC	50		
5230623	Benzene	2017/10/26	101	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		
5230623	C6 - C10 (less BTEX)	2017/10/26					<2.5	mg/kg	NC	50		
5230623	Ethylbenzene	2017/10/26	102	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		
5230623	Toluene	2017/10/26	99	60 - 130	83	60 - 140	<0.025	mg/kg	NC	50		
5230623	Total Xylenes	2017/10/26	99	60 - 130	84	60 - 140	<0.050	mg/kg	NC	50		
5230918	Total Organic Carbon	2017/10/29					<500	mg/kg	3.0	35	105	75 - 125
5232173	Aroclor 1016	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1221	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1232	2017/10/27					<0.050	ug/g	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5232173	Aroclor 1242	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1248	2017/10/27					<0.050	ug/g	NC	50		
5232173	Aroclor 1254	2017/10/27	105	30 - 130	108	30 - 130	<0.050	ug/g	NC	50		
5232173	Aroclor 1260	2017/10/27					<0.050	ug/g	NC	50		
5233167	>C10-C16 Hydrocarbons	2017/10/27	92	30 - 130	90	30 - 130	<10	mg/kg	NC	50		
5233167	>C16-C21 Hydrocarbons	2017/10/27	91	30 - 130	89	30 - 130	<10	mg/kg	NC	50		
5233167	>C21-<C32 Hydrocarbons	2017/10/27	102	30 - 130	105	30 - 130	<15	mg/kg	6.3	50		
5233173	>C10-C16 Hydrocarbons	2017/10/28	98	30 - 130	94	30 - 130	<10	mg/kg	NC	50		
5233173	>C16-C21 Hydrocarbons	2017/10/28	99	30 - 130	90	30 - 130	<10	mg/kg	NC	50		
5233173	>C21-<C32 Hydrocarbons	2017/10/28	115	30 - 130	116	30 - 130	<15	mg/kg	NC	50		
5234500	Acid Extractable Aluminum (Al)	2017/10/27					<10	mg/kg	0.37	35		
5234500	Acid Extractable Antimony (Sb)	2017/10/27	92	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Arsenic (As)	2017/10/27	110	75 - 125	102	75 - 125	<2.0	mg/kg	30	35		
5234500	Acid Extractable Barium (Ba)	2017/10/27	NC	75 - 125	97	75 - 125	<5.0	mg/kg	2.8	35		
5234500	Acid Extractable Beryllium (Be)	2017/10/27	101	75 - 125	98	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Bismuth (Bi)	2017/10/27	103	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Boron (B)	2017/10/27	97	75 - 125	98	75 - 125	<50	mg/kg	NC	35		
5234500	Acid Extractable Cadmium (Cd)	2017/10/27	102	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5234500	Acid Extractable Chromium (Cr)	2017/10/27	102	75 - 125	100	75 - 125	<2.0	mg/kg	0.18	35		
5234500	Acid Extractable Cobalt (Co)	2017/10/27	100	75 - 125	99	75 - 125	<1.0	mg/kg	6.1	35		
5234500	Acid Extractable Copper (Cu)	2017/10/27	100	75 - 125	98	75 - 125	<2.0	mg/kg	3.2	35		
5234500	Acid Extractable Iron (Fe)	2017/10/27					<50	mg/kg	1.4	35		
5234500	Acid Extractable Lead (Pb)	2017/10/27	102	75 - 125	99	75 - 125	<0.50	mg/kg	1.5	35		
5234500	Acid Extractable Lithium (Li)	2017/10/27	104	75 - 125	100	75 - 125	<2.0	mg/kg	4.4	35		
5234500	Acid Extractable Manganese (Mn)	2017/10/27	NC	75 - 125	102	75 - 125	<2.0	mg/kg	9.6	35		
5234500	Acid Extractable Mercury (Hg)	2017/10/27	100	75 - 125	102	75 - 125	<0.10	mg/kg	NC	35		
5234500	Acid Extractable Molybdenum (Mo)	2017/10/27	103	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Nickel (Ni)	2017/10/27	102	75 - 125	101	75 - 125	<2.0	mg/kg	6.6	35		
5234500	Acid Extractable Rubidium (Rb)	2017/10/27	102	75 - 125	102	75 - 125	<2.0	mg/kg	4.0	35		
5234500	Acid Extractable Selenium (Se)	2017/10/27	103	75 - 125	101	75 - 125	<1.0	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5234500	Acid Extractable Silver (Ag)	2017/10/27	105	75 - 125	100	75 - 125	<0.50	mg/kg	NC	35		
5234500	Acid Extractable Strontium (Sr)	2017/10/27	104	75 - 125	101	75 - 125	<5.0	mg/kg	24	35		
5234500	Acid Extractable Thallium (Tl)	2017/10/27	104	75 - 125	103	75 - 125	<0.10	mg/kg	NC	35		
5234500	Acid Extractable Tin (Sn)	2017/10/27	102	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35		
5234500	Acid Extractable Uranium (U)	2017/10/27	100	75 - 125	98	75 - 125	<0.10	mg/kg	1.4	35		
5234500	Acid Extractable Vanadium (V)	2017/10/27	102	75 - 125	98	75 - 125	<2.0	mg/kg	3.5	35		
5234500	Acid Extractable Zinc (Zn)	2017/10/27	107	75 - 125	104	75 - 125	<5.0	mg/kg	4.0	35		
5235292	>C10-C16 Hydrocarbons	2017/10/29	91	30 - 130	94	30 - 130	<10	mg/kg	NC	50		
5235292	>C16-C21 Hydrocarbons	2017/10/29	92	30 - 130	93	30 - 130	<10	mg/kg	NC	50		
5235292	>C21-<C32 Hydrocarbons	2017/10/29	104	30 - 130	108	30 - 130	<15	mg/kg	NC	50		
5235625	Moisture	2017/10/28							6.0	25		
5235898	1-Methylnaphthalene	2017/11/01	95	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50		
5235898	2-Methylnaphthalene	2017/11/01	107	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5235898	Acenaphthene	2017/11/01	104	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50		
5235898	Acenaphthylene	2017/11/01	107	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50		
5235898	Anthracene	2017/11/01	102	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5235898	Benzo(a)anthracene	2017/11/01	104	30 - 130	103	30 - 130	<0.010	mg/kg	NC	50		
5235898	Benzo(a)pyrene	2017/11/01	99	30 - 130	92	30 - 130	<0.010	mg/kg	NC	50		
5235898	Benzo(b)fluoranthene	2017/11/01	95	30 - 130	91	30 - 130	<0.010	mg/kg	NC	50		
5235898	Benzo(g,h,i)perylene	2017/11/01	100	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50		
5235898	Benzo(j)fluoranthene	2017/11/01	101	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50		
5235898	Benzo(k)fluoranthene	2017/11/01	101	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50		
5235898	Chrysene	2017/11/01	96	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5235898	Dibenz(a,h)anthracene	2017/11/01	95	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50		
5235898	Fluoranthene	2017/11/01	105	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5235898	Fluorene	2017/11/01	109	30 - 130	106	30 - 130	<0.010	mg/kg	NC	50		
5235898	Indeno(1,2,3-cd)pyrene	2017/11/01	97	30 - 130	89	30 - 130	<0.010	mg/kg	NC	50		
5235898	Naphthalene	2017/11/01	96	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		
5235898	Perylene	2017/11/01	102	30 - 130	93	30 - 130	<0.010	mg/kg	NC	50		
5235898	Phenanthrene	2017/11/01	103	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5235898	Pyrene	2017/11/01	106	30 - 130	105	30 - 130	<0.010	mg/kg	NC	50		
5237143	>C10-C16 Hydrocarbons	2017/10/31	91	30 - 130	87	30 - 130	<10	mg/kg	NC	50		
5237143	>C16-C21 Hydrocarbons	2017/10/31	90	30 - 130	80	30 - 130	<10	mg/kg	NC	50		
5237143	>C21-<C32 Hydrocarbons	2017/10/31	97	30 - 130	92	30 - 130	<15	mg/kg	9.4	50		
5237805	Acid Extractable Aluminum (Al)	2017/10/30					<10	mg/kg	3.6	35		
5237805	Acid Extractable Antimony (Sb)	2017/10/30	87	75 - 125	105	75 - 125	<2.0	mg/kg	NC	35		
5237805	Acid Extractable Arsenic (As)	2017/10/30	102	75 - 125	102	75 - 125	<2.0	mg/kg	5.3	35		
5237805	Acid Extractable Barium (Ba)	2017/10/30	NC	75 - 125	99	75 - 125	<5.0	mg/kg	2.7	35		
5237805	Acid Extractable Beryllium (Be)	2017/10/30	102	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5237805	Acid Extractable Bismuth (Bi)	2017/10/30	104	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5237805	Acid Extractable Boron (B)	2017/10/30	98	75 - 125	102	75 - 125	<50	mg/kg	NC	35		
5237805	Acid Extractable Cadmium (Cd)	2017/10/30	103	75 - 125	105	75 - 125	<0.30	mg/kg	0.27	35		
5237805	Acid Extractable Chromium (Cr)	2017/10/30	104	75 - 125	103	75 - 125	<2.0	mg/kg	3.1	35		
5237805	Acid Extractable Cobalt (Co)	2017/10/30	105	75 - 125	104	75 - 125	<1.0	mg/kg	1.6	35		
5237805	Acid Extractable Copper (Cu)	2017/10/30	101	75 - 125	101	75 - 125	<2.0	mg/kg	2.5	35		
5237805	Acid Extractable Iron (Fe)	2017/10/30					<50	mg/kg	2.5	35		
5237805	Acid Extractable Lead (Pb)	2017/10/30	96	75 - 125	102	75 - 125	<0.50	mg/kg	12	35		
5237805	Acid Extractable Lithium (Li)	2017/10/30	NC	75 - 125	104	75 - 125	<2.0	mg/kg	5.4	35		
5237805	Acid Extractable Manganese (Mn)	2017/10/30	NC	75 - 125	104	75 - 125	<2.0	mg/kg	3.1	35		
5237805	Acid Extractable Mercury (Hg)	2017/10/30	99	75 - 125	105	75 - 125	<0.10	mg/kg	NC	35		
5237805	Acid Extractable Molybdenum (Mo)	2017/10/30	NC	75 - 125	103	75 - 125	<2.0	mg/kg	4.1	35		
5237805	Acid Extractable Nickel (Ni)	2017/10/30	105	75 - 125	103	75 - 125	<2.0	mg/kg	2.2	35		
5237805	Acid Extractable Rubidium (Rb)	2017/10/30	106	75 - 125	103	75 - 125	<2.0	mg/kg	8.1	35		
5237805	Acid Extractable Selenium (Se)	2017/10/30	104	75 - 125	106	75 - 125	<1.0	mg/kg	NC	35		
5237805	Acid Extractable Silver (Ag)	2017/10/30	103	75 - 125	104	75 - 125	<0.50	mg/kg	NC	35		
5237805	Acid Extractable Strontium (Sr)	2017/10/30	103	75 - 125	102	75 - 125	<5.0	mg/kg	1.6	35		
5237805	Acid Extractable Thallium (Tl)	2017/10/30	102	75 - 125	104	75 - 125	<0.10	mg/kg	6.6	35		
5237805	Acid Extractable Tin (Sn)	2017/10/30	87	75 - 125	103	75 - 125	<2.0	mg/kg	28	35		
5237805	Acid Extractable Uranium (U)	2017/10/30	107	75 - 125	107	75 - 125	<0.10	mg/kg	1.0	35		
5237805	Acid Extractable Vanadium (V)	2017/10/30	NC	75 - 125	103	75 - 125	<2.0	mg/kg	4.7	35		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5237805	Acid Extractable Zinc (Zn)	2017/10/30	NC	75 - 125	106	75 - 125	<5.0	mg/kg	4.6	35		
5237942	Aroclor 1016	2017/10/31					<0.050	ug/g	NC	50		
5237942	Aroclor 1221	2017/10/31					<0.050	ug/g	NC	50		
5237942	Aroclor 1232	2017/10/31					<0.050	ug/g	NC	50		
5237942	Aroclor 1242	2017/10/31					<0.050	ug/g	NC	50		
5237942	Aroclor 1248	2017/10/31					<0.050	ug/g	NC	50		
5237942	Aroclor 1254	2017/10/31	128	30 - 130	111	30 - 130	<0.050	ug/g	NC	50		
5237942	Aroclor 1260	2017/10/31					<0.050	ug/g	32	50		
5238053	Acid Extractable Aluminum (Al)	2017/10/30					<10	mg/kg				
5238053	Acid Extractable Antimony (Sb)	2017/10/30	NC	75 - 125	105	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Arsenic (As)	2017/10/30	97	75 - 125	99	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Barium (Ba)	2017/10/30	NC	75 - 125	104	75 - 125	<5.0	mg/kg				
5238053	Acid Extractable Beryllium (Be)	2017/10/30	100	75 - 125	99	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Bismuth (Bi)	2017/10/30	100	75 - 125	102	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Boron (B)	2017/10/30	86	75 - 125	101	75 - 125	<50	mg/kg				
5238053	Acid Extractable Cadmium (Cd)	2017/10/30	97	75 - 125	99	75 - 125	<0.30	mg/kg				
5238053	Acid Extractable Chromium (Cr)	2017/10/30	101	75 - 125	96	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Cobalt (Co)	2017/10/30	98	75 - 125	99	75 - 125	<1.0	mg/kg				
5238053	Acid Extractable Copper (Cu)	2017/10/30	NC	75 - 125	97	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Iron (Fe)	2017/10/30					<50	mg/kg				
5238053	Acid Extractable Lead (Pb)	2017/10/31	NC	75 - 125	100	75 - 125	<0.50	mg/kg	1.7	35		
5238053	Acid Extractable Lithium (Li)	2017/10/30	108	75 - 125	101	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Manganese (Mn)	2017/10/30	NC	75 - 125	101	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Mercury (Hg)	2017/10/30	102	75 - 125	104	75 - 125	<0.10	mg/kg				
5238053	Acid Extractable Molybdenum (Mo)	2017/10/30	105	75 - 125	102	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Nickel (Ni)	2017/10/30	107	75 - 125	99	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Rubidium (Rb)	2017/10/30	98	75 - 125	102	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Selenium (Se)	2017/10/30	94	75 - 125	99	75 - 125	<1.0	mg/kg				
5238053	Acid Extractable Silver (Ag)	2017/10/30	99	75 - 125	101	75 - 125	<0.50	mg/kg				
5238053	Acid Extractable Strontium (Sr)	2017/10/30	102	75 - 125	99	75 - 125	<5.0	mg/kg				

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5238053	Acid Extractable Thallium (Tl)	2017/10/30	103	75 - 125	105	75 - 125	<0.10	mg/kg				
5238053	Acid Extractable Tin (Sn)	2017/10/30	107	75 - 125	107	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Uranium (U)	2017/10/30	99	75 - 125	100	75 - 125	<0.10	mg/kg				
5238053	Acid Extractable Vanadium (V)	2017/10/30	102	75 - 125	97	75 - 125	<2.0	mg/kg				
5238053	Acid Extractable Zinc (Zn)	2017/10/30	NC	75 - 125	99	75 - 125	<5.0	mg/kg				
5238211	a-Chlordane	2017/10/31	81	50 - 130	88	50 - 130	<0.0020	ug/g	NC	40		
5238211	Aldrin	2017/10/31	105	50 - 130	104	50 - 130	<0.0020	ug/g	NC	40		
5238211	alpha-BHC	2017/10/31	82	30 - 130	84	30 - 130	<0.0020	ug/g				
5238211	Aroclor 1016	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1221	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1232	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1242	2017/10/31			92	60 - 130	<0.015	ug/g	NC	40		
5238211	Aroclor 1248	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1254	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1260	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1262	2017/10/31					<0.015	ug/g				
5238211	Aroclor 1268	2017/10/31					<0.015	ug/g				
5238211	beta-BHC	2017/10/31	100	30 - 130	120	30 - 130	<0.0020	ug/g				
5238211	delta-BHC	2017/10/31	108	30 - 130	108	30 - 130	<0.0020	ug/g				
5238211	Dieldrin	2017/10/31	91	50 - 130	118	50 - 130	<0.0020	ug/g	NC	40		
5238211	Endosulfan I (alpha)	2017/10/31	94	50 - 130	110	50 - 130	<0.0020	ug/g	NC	40		
5238211	Endosulfan II (beta)	2017/10/31	102	50 - 130	99	50 - 130	<0.0020	ug/g	NC	40		
5238211	Endosulfan sulfate	2017/10/31	101	30 - 130	121	30 - 130	<0.0020	ug/g				
5238211	Endrin aldehyde	2017/10/31	78	30 - 130	110	30 - 130	<0.0020	ug/g				
5238211	Endrin ketone	2017/10/31	105	30 - 130	118	30 - 130	<0.0020	ug/g				
5238211	Endrin	2017/10/31	76	50 - 130	107	50 - 130	<0.0020	ug/g	NC	40		
5238211	g-Chlordane	2017/10/31	86	50 - 130	99	50 - 130	<0.0020	ug/g	NC	40		
5238211	Heptachlor epoxide	2017/10/31	77	50 - 130	105	50 - 130	<0.0020	ug/g	NC	40		
5238211	Heptachlor	2017/10/31	89	50 - 130	75	50 - 130	<0.0020	ug/g	NC	40		
5238211	Hexachlorobenzene	2017/10/31	97	50 - 130	95	50 - 130	<0.0020	ug/g	NC	40		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5238211	Lindane	2017/10/31	76	50 - 130	93	50 - 130	<0.0020	ug/g	NC	40		
5238211	Methoxychlor	2017/10/31	121	50 - 130	115	50 - 130	<0.0050	ug/g	NC	40		
5238211	Mirex	2017/10/31	69	30 - 130	85	30 - 130	<0.0020	ug/g				
5238211	o,p-DDD	2017/10/31	83	50 - 130	114	50 - 130	<0.0020	ug/g	NC	40		
5238211	o,p-DDE	2017/10/31	93	50 - 130	79	50 - 130	<0.0020	ug/g	NC	40		
5238211	o,p-DDT	2017/10/31	80	50 - 130	87	50 - 130	<0.0020	ug/g	NC	40		
5238211	Octachlorostyrene	2017/10/31	81	30 - 130	78	30 - 130	<0.0020	ug/g				
5238211	p,p-DDD	2017/10/31	78	50 - 130	113	50 - 130	<0.0020	ug/g	NC	40		
5238211	p,p-DDE	2017/10/31	115	50 - 130	102	50 - 130	<0.0020	ug/g	NC	40		
5238211	p,p-DDT	2017/10/31	100	50 - 130	100	50 - 130	<0.0020	ug/g	NC	40		
5238211	Toxaphene	2017/10/31			107	30 - 130	<0.080	ug/g	NC	50		
5239816	Benzene	2017/10/31	90	60 - 130	102	60 - 140	<0.025	mg/kg	NC	50		
5239816	C6 - C10 (less BTEX)	2017/10/31					<2.5	mg/kg	NC	50		
5239816	Ethylbenzene	2017/10/31	100	60 - 130	108	60 - 140	<0.025	mg/kg	NC	50		
5239816	Toluene	2017/10/31	91	60 - 130	104	60 - 140	<0.025	mg/kg	NC	50		
5239816	Total Xylenes	2017/10/31	96	60 - 130	107	60 - 140	<0.050	mg/kg	NC	50		
5241887	1,1,1-Trichloroethane	2017/11/01	116	60 - 140	111	60 - 130	<25	ug/kg	NC	50		
5241887	1,1,2,2-Tetrachloroethane	2017/11/01	101	60 - 140	93	60 - 130	<25	ug/kg	NC	50		
5241887	1,1,2-Trichloroethane	2017/11/01	104	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5241887	1,1-Dichloroethane	2017/11/01	115	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5241887	1,1-Dichloroethylene	2017/11/01	114	60 - 140	112	60 - 130	<25	ug/kg	NC	50		
5241887	1,2-Dichlorobenzene	2017/11/01	100	60 - 140	94	60 - 130	<25	ug/kg	NC	50		
5241887	1,2-Dichloroethane	2017/11/01	103	60 - 140	97	60 - 130	<25	ug/kg	NC	50		
5241887	1,2-Dichloropropane	2017/11/01	104	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5241887	1,3-Dichlorobenzene	2017/11/01	103	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5241887	1,4-Dichlorobenzene	2017/11/01	102	60 - 140	96	60 - 130	<25	ug/kg	NC	50		
5241887	Benzene	2017/11/01	107	60 - 140	102	60 - 130	<25	ug/kg	NC	50		
5241887	Bromodichloromethane	2017/11/01	108	60 - 140	101	60 - 130	<25	ug/kg	NC	50		
5241887	Bromoform	2017/11/01	103	60 - 140	95	60 - 130	<25	ug/kg	NC	50		
5241887	Bromomethane	2017/11/01	101	60 - 140	99	60 - 140	<50	ug/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5241887	Carbon Tetrachloride	2017/11/01	114	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5241887	Chlorobenzene	2017/11/01	108	60 - 140	102	60 - 130	<25	ug/kg	NC	50		
5241887	Chloroethane	2017/11/01	99	60 - 140	97	60 - 140	<200	ug/kg	NC	50		
5241887	Chloroform	2017/11/01	104	60 - 140	97	60 - 130	<25	ug/kg	NC	50		
5241887	cis-1,2-Dichloroethylene	2017/11/01	113	60 - 140	106	60 - 130	<25	ug/kg	NC	50		
5241887	cis-1,3-Dichloropropene	2017/11/01	112	60 - 140	107	60 - 130	<25	ug/kg	NC	50		
5241887	Dibromochloromethane	2017/11/01	106	60 - 140	99	60 - 130	<25	ug/kg	NC	50		
5241887	Ethylbenzene	2017/11/01	116	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5241887	Ethylene Dibromide	2017/11/01	100	60 - 140	95	60 - 130	<25	ug/kg	NC	50		
5241887	Methylene Chloride(Dichloromethane)	2017/11/01	109	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5241887	o-Xylene	2017/11/01	112	60 - 140	106	60 - 130	<25	ug/kg	NC	50		
5241887	p+m-Xylene	2017/11/01	114	60 - 140	108	60 - 130	<25	ug/kg	NC	50		
5241887	Styrene	2017/11/01	111	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5241887	Tetrachloroethylene	2017/11/01	116	60 - 140	111	60 - 130	<25	ug/kg	NC	50		
5241887	Toluene	2017/11/01	115	60 - 140	110	60 - 130	<25	ug/kg	NC	50		
5241887	Total Xylenes	2017/11/01					<50	ug/kg	NC	50		
5241887	trans-1,2-Dichloroethylene	2017/11/01	114	60 - 140	109	60 - 130	<25	ug/kg	NC	50		
5241887	trans-1,3-Dichloropropene	2017/11/01	97	60 - 140	94	60 - 130	<25	ug/kg	NC	50		
5241887	Trichloroethylene	2017/11/01	114	60 - 140	109	60 - 130	<10	ug/kg	NC	50		
5241887	Trichlorofluoromethane (FREON 11)	2017/11/01	97	60 - 140	102	60 - 140	<25	ug/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

Stantec Consulting Ltd
Client Project #: FORMER MILLITARY SITE
Site Location: CARTWRIGHT, NL
Your P.O. #: 121414915.300.002
Sampler Initials: RP

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
5241887	Vinyl Chloride	2017/11/01	101	60 - 140	105	60 - 140	<20	ug/kg	NC	50		

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

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

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

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

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

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

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

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

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

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

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

(4) Poor RPD due to sample inhomogeneity. Results confirmed by repeat digestion and analysis.

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

(6) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.

(7) VPH surrogate not within acceptance limits due to matrix interference. VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility

VALIDATION SIGNATURE PAGE

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



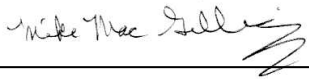
Brad Newman, Scientific Service Specialist



Eric Dearman, Scientific Specialist



Kevin MacDonald, Inorganics Supervisor



Mike MacGillivray, Scientific Specialist (Inorganics)



Rosemarie MacDonald, Scientific Specialist (Organics)

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



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551711798
Customer ID: 55PSSC69
Customer PO: JOB # B7N2746
Project ID:

Attn: Heather Macumber
Maxxam Analytics, Inc.
200 Bluewater Road
Suite 105
Bedford, NS B4B 1G9

Phone: (902) 832-4852
Fax:
Collected: 10/13/2017
Received: 10/24/2017
Analyzed: 10/27/2017

Proj: JOB # B7N2746

Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS Act - Asbestos in the Workplace via EPA600/R-93/116 Method

Client Sample ID: FJI267-02R/CWT-SS8

Lab Sample ID: 551711798-0001

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	10%	90%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI272-02R/CWT-SS13

Lab Sample ID: 551711798-0002

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	0%	100%	<1% Chrysotile	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI287-02R/CWT-SS28

Lab Sample ID: 551711798-0003

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	10%	90%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI294-02R/CWT-SS35

Lab Sample ID: 551711798-0004

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	6%	94%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI296-02R/CWT-SS37

Lab Sample ID: 551711798-0005

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	6%	94%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep

Client Sample ID: FJI324-02R/CWT-SS65

Lab Sample ID: 551711798-0006

Sample Description:

TEST	Analyzed Date	Color	Non-Asbestos		Asbestos	Comment
			Fibrous	Non-Fibrous		
PLM	10/27/2017	Brown	4%	96%	None Detected	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep



EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3
Phone/Fax: 289-997-4602 / (289) 997-4607
<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order 551711798
Customer ID: 55PSSC69
Customer PO: JOB # B7N2746
Project ID:

**Test Report: Asbestos Analysis of Bulk Materials for Nova Scotia Code of Practice Section 66 OHS
Act - Asbestos in the Workplace via EPA600/R-93/116 Method**

Analyst(s):

Natalie D'Amico PLM (6)

Reviewed and approved by:

Matthew Davis
or Other Approved Signatory

None Detected = <0.1%. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. Samples received in good condition unless otherwise noted. This report must not be used to claim product endorsement by NVLAP of any agency of the U.S. Government.

Samples analyzed by EMSL Canada Inc. Mississauga, ON NVLAP Lab Code 200877-0

Initial report from: 10/27/2017 11:04:50

Your Project #: 121414915.200.002
 Site Location: FORMER MILITARY SITE, BORDER BEACON, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/16

Report #: R4860594

Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7O7507

Received: 2017/11/02, 10:11

Sample Matrix: Soil
 # Samples Received: 4

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Metals in Terrestrial Biota (1)	4	2017/11/10	2017/11/11	ATL SOP 00058	EPA 6020A R1 m
PCBs in soil by GC/ECD (1, 2)	2	2017/11/08	2017/11/14	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (1, 2)	2	2017/11/09	2017/11/10	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil) (1)	2	N/A	2017/11/10	N/A	Auto Calc.
PCB Aroclor sum (soil) (1)	2	N/A	2017/11/14	N/A	Auto Calc.

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

(1) This test was performed by Maxxam Bedford

(2) Soils are reported on a dry weight basis unless otherwise specified.

Your Project #: 121414915.200.002
Site Location: FORMER MILITARY SITE, BORDER BEACON, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/16
Report #: R4860594
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B707507
Received: 2017/11/02, 10:11

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

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

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FMF455	FMF456	FMF457	FMF458	FMF458			
Sampling Date		2017/10/26	2017/10/25	2017/10/25	2017/10/26	2017/10/26			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	BB-VEG1	BB-VEG4	BB-VEG5	BB-VEG8	BB-VEG8 Lab-Dup	RDL	QC Batch	MDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	260	830	3000	400	500	10	5259225	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Barium (Ba)	mg/kg	31	62	74	120	130	5.0	5259225	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Boron (B)	mg/kg	<5.0	<5.0	<5.0	8.6	8.8	5.0	5259225	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	6.0	0.69	0.82	0.30	5259225	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	<2.0	2.9	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	<1.0	<1.0	1.1	1.0	5259225	N/A
Acid Extractable Copper (Cu)	mg/kg	2.6	4.2	9.0	7.3	7.6	2.0	5259225	N/A
Acid Extractable Iron (Fe)	mg/kg	470	1600	2900	710	970	50	5259225	N/A
Acid Extractable Lead (Pb)	mg/kg	<0.50	2.0	7.7	1.1	1.4	0.50	5259225	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	2.5	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Manganese (Mn)	mg/kg	130	85	120	290	310	2.0	5259225	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	5.4	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.2	<2.0	4.1	<2.0	2.0	2.0	5259225	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5259225	N/A
Acid Extractable Strontium (Sr)	mg/kg	12	12	13	22	26	5.0	5259225	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5259225	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	0.10	<0.10	<0.10	0.10	5259225	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	2.1	2.4	<2.0	<2.0	2.0	5259225	N/A
Acid Extractable Zinc (Zn)	mg/kg	16	39	280	370	420	5.0	5259225	N/A
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		FMF455			FMF456			FMF457			FMF458		
Sampling Date		2017/10/26			2017/10/25			2017/10/25			2017/10/26		
COC Number		N/A			N/A			N/A			N/A		
	UNITS	BB-VEG1	RDL	QC Batch	BB-VEG4	RDL	BB-VEG5	RDL	QC Batch	BB-VEG8	RDL	QC Batch	MDL

PCBs													
Aroclor 1016	ug/g	<0.25	0.25	5256649	<0.15	0.15	<0.050	0.050	5262301	<0.25	0.25	5256649	N/A
Aroclor 1221	ug/g	<0.25	0.25	5256649	<0.15	0.15	<0.050	0.050	5262301	<0.25	0.25	5256649	N/A
Aroclor 1232	ug/g	<0.25	0.25	5256649	<0.15	0.15	<0.050	0.050	5262301	<0.25	0.25	5256649	N/A
Aroclor 1248	ug/g	<0.25	0.25	5256649	<0.15	0.15	<0.050	0.050	5262301	<0.25	0.25	5256649	N/A
Aroclor 1242	ug/g	<0.25	0.25	5256649	<0.15	0.15	<0.050	0.050	5262301	<0.25	0.25	5256649	N/A
Aroclor 1254	ug/g	<0.25	0.25	5256649	<0.15	0.15	0.15	0.050	5262301	<0.25	0.25	5256649	N/A
Aroclor 1260	ug/g	<0.25	0.25	5256649	<0.15	0.15	<0.050	0.050	5262301	<0.25	0.25	5256649	N/A
Calculated Total PCB	ug/g	<0.25	0.25	5248668	<0.15	0.15	0.15	0.050	5248668	<0.25	0.25	5248668	N/A

Surrogate Recovery (%)													
Decachlorobiphenyl	%	73 (1)		5256649	68 (2)		55 (3)		5262301	72 (1)		5256649	

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

(1) Elevated PCB RDL due to matrix / co-extractive interference.
 (2) PCB surrogate not within acceptance limits. Sample past recommended hold time for repeat analysis. Elevated PCB RDL due to matrix / co-extractive interference.
 (3) PCB surrogate not within acceptance limits. Sample past recommended hold time for repeat analysis.

TEST SUMMARY

Maxxam ID: FMF455
Sample ID: BB-VEG1
Matrix: Soil

Collected: 2017/10/26
Shipped:
Received: 2017/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5259225	2017/11/10	2017/11/11	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5256649	2017/11/09	2017/11/10	Lisa Gates
PCB Aroclor sum (soil)	CALC	5248668	N/A	2017/11/10	Automated Statchk

Maxxam ID: FMF456
Sample ID: BB-VEG4
Matrix: Soil

Collected: 2017/10/25
Shipped:
Received: 2017/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5259225	2017/11/10	2017/11/11	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5262301	2017/11/08	2017/11/14	Lisa Gates
PCB Aroclor sum (soil)	CALC	5248668	N/A	2017/11/14	Automated Statchk

Maxxam ID: FMF457
Sample ID: BB-VEG5
Matrix: Soil

Collected: 2017/10/25
Shipped:
Received: 2017/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5259225	2017/11/10	2017/11/11	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5262301	2017/11/08	2017/11/14	Lisa Gates
PCB Aroclor sum (soil)	CALC	5248668	N/A	2017/11/14	Automated Statchk

Maxxam ID: FMF458
Sample ID: BB-VEG8
Matrix: Soil

Collected: 2017/10/26
Shipped:
Received: 2017/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5259225	2017/11/10	2017/11/11	Bryon Angevine
PCBs in soil by GC/ECD	GC/ECD	5256649	2017/11/09	2017/11/10	Lisa Gates
PCB Aroclor sum (soil)	CALC	5248668	N/A	2017/11/10	Automated Statchk

Maxxam ID: FMF458 Dup
Sample ID: BB-VEG8
Matrix: Soil

Collected: 2017/10/26
Shipped:
Received: 2017/11/02

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5259225	2017/11/10	2017/11/11	Bryon Angevine

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.2°C
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Due to the nature of the samples, an alternate sample prep procedure was employed. Although accredited procedures were used (PCB in Soil), the accreditation does not extend to the matrix being prepared and analyzed.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5256649	Decachlorobiphenyl	2017/11/10	87	30 - 130	88	30 - 130	92	%		
5262301	Decachlorobiphenyl	2017/11/14	79	30 - 130	87	30 - 130	91	%		
5256649	Aroclor 1016	2017/11/10					<0.050	ug/g	NC	50
5256649	Aroclor 1221	2017/11/10					<0.050	ug/g	NC	50
5256649	Aroclor 1232	2017/11/10					<0.050	ug/g	NC	50
5256649	Aroclor 1242	2017/11/10					<0.050	ug/g	NC	50
5256649	Aroclor 1248	2017/11/10					<0.050	ug/g	NC	50
5256649	Aroclor 1254	2017/11/10	91	30 - 130	98	30 - 130	<0.050	ug/g	NC	50
5256649	Aroclor 1260	2017/11/10					<0.050	ug/g	NC	50
5259225	Acid Extractable Aluminum (Al)	2017/11/11					<10	mg/kg	22	35
5259225	Acid Extractable Antimony (Sb)	2017/11/11	92	75 - 125	94	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Arsenic (As)	2017/11/11	93	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Barium (Ba)	2017/11/11	NC	75 - 125	95	75 - 125	<5.0	mg/kg	9.3	35
5259225	Acid Extractable Beryllium (Be)	2017/11/11	100	75 - 125	104	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Boron (B)	2017/11/11	97	75 - 125	104	75 - 125	<5.0	mg/kg	1.4	35
5259225	Acid Extractable Cadmium (Cd)	2017/11/11	96	75 - 125	97	75 - 125	<0.30	mg/kg	17	35
5259225	Acid Extractable Chromium (Cr)	2017/11/11	96	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Cobalt (Co)	2017/11/11	95	75 - 125	96	75 - 125	<1.0	mg/kg	8.2	35
5259225	Acid Extractable Copper (Cu)	2017/11/11	96	75 - 125	96	75 - 125	<2.0	mg/kg	3.5	35
5259225	Acid Extractable Iron (Fe)	2017/11/11					<50	mg/kg	31	35
5259225	Acid Extractable Lead (Pb)	2017/11/11	96	75 - 125	95	75 - 125	<0.50	mg/kg	22	35
5259225	Acid Extractable Lithium (Li)	2017/11/11	101	75 - 125	103	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Manganese (Mn)	2017/11/11	NC	75 - 125	97	75 - 125	<2.0	mg/kg	4.9	35
5259225	Acid Extractable Molybdenum (Mo)	2017/11/11	100	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Nickel (Ni)	2017/11/11	97	75 - 125	98	75 - 125	<2.0	mg/kg	0.99	35
5259225	Acid Extractable Selenium (Se)	2017/11/11	93	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35
5259225	Acid Extractable Silver (Ag)	2017/11/11	97	75 - 125	99	75 - 125	<0.50	mg/kg	NC	35
5259225	Acid Extractable Strontium (Sr)	2017/11/11	101	75 - 125	97	75 - 125	<5.0	mg/kg	16	35
5259225	Acid Extractable Thallium (Tl)	2017/11/11	93	75 - 125	104	75 - 125	<0.10	mg/kg	NC	35
5259225	Acid Extractable Uranium (U)	2017/11/11	95	75 - 125	95	75 - 125	<0.10	mg/kg	NC	35
5259225	Acid Extractable Vanadium (V)	2017/11/11	97	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5259225	Acid Extractable Zinc (Zn)	2017/11/11	NC	75 - 125	100	75 - 125	<5.0	mg/kg	12	35
5262301	Aroclor 1016	2017/11/14					<0.050	ug/g	NC	50
5262301	Aroclor 1221	2017/11/14					<0.050	ug/g	NC	50
5262301	Aroclor 1232	2017/11/14					<0.050	ug/g	NC	50
5262301	Aroclor 1242	2017/11/14					<0.050	ug/g	NC	50
5262301	Aroclor 1248	2017/11/14					<0.050	ug/g	NC	50
5262301	Aroclor 1254	2017/11/14	77	30 - 130	88	30 - 130	<0.050	ug/g	NC	50
5262301	Aroclor 1260	2017/11/14					<0.050	ug/g	NC	50

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

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

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

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

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

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

VALIDATION SIGNATURE PAGE

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

Kevin A. MacDonald

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.

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/24

Report #: R4874237

Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

Sample Matrix: Soil
 # Samples Received: 2

Analyses	Date		Laboratory Method	Reference
	Quantity Extracted	Date Analyzed		
Moisture	2	N/A	2017/11/21 ATL SOP 00001	OMOE Handbook 1983 m
PCBs in soil by GC/ECD (1)	2	2017/11/21	2017/11/23 ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	2	N/A	2017/11/23 N/A	Auto Calc.

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Your Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/24
Report #: R4874237
Version: 1 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

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

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

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FOO128	FOO132		
Sampling Date		2017/11/07	2017/11/07		
COC Number		N/A	N/A		
	UNITS	CWT-TP27-BS1	CWT-TP29-BS1	RDL	QC Batch
Inorganics					
Moisture	%	17	17	1.0	5275609
RDL = Reportable Detection Limit					
QC Batch = Quality Control Batch					

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FOO128	FOO132		
Sampling Date		2017/11/07	2017/11/07		
COC Number		N/A	N/A		
	UNITS	CWT-TP27-BS1	CWT-TP29-BS1	RDL	QC Batch
PCBs					
Aroclor 1016	ug/g	<0.050	<0.050	0.050	5276613
Aroclor 1221	ug/g	<0.050	<0.050	0.050	5276613
Aroclor 1232	ug/g	<0.050	<0.050	0.050	5276613
Aroclor 1248	ug/g	<0.050	<0.050	0.050	5276613
Aroclor 1242	ug/g	<0.050	<0.050	0.050	5276613
Aroclor 1254	ug/g	<0.050	<0.050	0.050	5276613
Aroclor 1260	ug/g	<0.050	0.072	0.050	5276613
Calculated Total PCB	ug/g	<0.050	0.072	0.050	5275854
Surrogate Recovery (%)					
Decachlorobiphenyl	%	95	92		5276613
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.2°C
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Water sample CWT-SW2 was received past the recommended 7 day holding time for PAH and PCB analysis.

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

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5276613	Decachlorobiphenyl	2017/11/23	92	30 - 130	90	30 - 130	92	%		
5275609	Moisture	2017/11/21							4.3	25
5276613	Aroclor 1016	2017/11/23					<0.050	ug/g	NC	50
5276613	Aroclor 1221	2017/11/23					<0.050	ug/g	NC	50
5276613	Aroclor 1232	2017/11/23					<0.050	ug/g	NC	50
5276613	Aroclor 1242	2017/11/23					<0.050	ug/g	NC	50
5276613	Aroclor 1248	2017/11/23					<0.050	ug/g	NC	50
5276613	Aroclor 1254	2017/11/23	90	30 - 130	97	30 - 130	<0.050	ug/g	NC	50
5276613	Aroclor 1260	2017/11/23					<0.050	ug/g	NC	50

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

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

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

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

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

NC (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 $\leq 2x$ RDL).

VALIDATION SIGNATURE PAGE

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



Rosemarie MacDonald, Scientific Specialist (Organics)

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EMSL Canada Inc.

2756 Slough Street Mississauga, ON L4T 1G3

Tel/Fax: (289) 997-4602 / (289) 997-4607

<http://www.EMSL.com> / torontolab@emsl.com

EMSL Canada Order: 551712838

Customer ID: 55PSSC69

Customer PO: JOB # B7P8843

Project ID:

Attention: Heather Macumber
Maxxam Analytics, Inc.
200 Bluewater Road
Bedford, NS B4B 1G9

Phone: (902) 832-4852

Fax:

Received Date: 11/20/2017 8:49 AM

Analysis Date: 11/20/2017

Collected Date: 11/07/2017

Project: JOB # B7P8843

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
FOO128-01R/CWT-TP2 7-BS1		Brown Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
<small>551712838-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep</small>					
FOO132-01R/CWT-TP2 9-BS1		Brown Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
<small>551712838-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep</small>					

Analyst(s)

Natalie D'Amico (2)

Matthew Davis
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Canada Inc. Mississauga, ON

Initial report from: 11/20/2017 13:20:33

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/27
 Report #: R4877414
 Version: 2 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

Sample Matrix: Soil
 # Samples Received: 2

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
TEH in Soil (AA PIRI)	1	2017/11/21	2017/11/21	ATL SOP 00116	Atl. RBCA v3.1 m
TEH in Soil (AA PIRI)	1	2017/11/21	2017/11/22	ATL SOP 00116	Atl. RBCA v3.1 m
Moisture	2	N/A	2017/11/20	ATL SOP 00001	OMOE Handbook 1983 m
ModTPH (T2) Calc. for Soil	2	N/A	2017/11/22	N/A	Atl. RBCA v3 m
VPH in Soil (PIRI2) - Field Preserved (1)	2	N/A	2017/11/22	ATL SOP 00120	Atl. RBCA v3.1 m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

(1) 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.

Your Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/11/27
Report #: R4877414
Version: 2 - Partial

CERTIFICATE OF ANALYSIS – PARTIAL RESULTS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

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

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RESULTS OF ANALYSES OF SOIL

Maxxam ID		FOO108		FOO146		
Sampling Date		2017/11/07		2017/11/07		
COC Number		N/A		N/A		
	UNITS	CWT-TP13-BS2	QC Batch	CWT-TP36-BS2	RDL	QC Batch
Inorganics						
Moisture	%	17	5273377	9.8	1.0	5273521
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						

Maxxam Analytics International Corporation - 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FOO108			FOO108			FOO146		
Sampling Date		2017/11/07			2017/11/07			2017/11/07		
COC Number		N/A			N/A			N/A		
	UNITS	CWT-TP13-BS2	RDL	QC Batch	CWT-TP13-BS2 Lab-Dup	RDL	QC Batch	CWT-TP36-BS2	RDL	QC Batch

Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	0.025	5276304				<0.025	0.025	5276304
Toluene	mg/kg	<0.025	0.025	5276304				<0.025	0.025	5276304
Ethylbenzene	mg/kg	<0.025	0.025	5276304				<0.025	0.025	5276304
Total Xylenes	mg/kg	<0.050	0.050	5276304				<0.050	0.050	5276304
Aliphatic >C6-C8	mg/kg	2.5	1.0	5276304				<1.0	1.0	5276304
Aliphatic >C8-C10	mg/kg	100	1.0	5276304				24	1.0	5276304
>C8-C10 Aromatics (-EX)	mg/kg	3.1	0.50	5276304				<0.50	0.50	5276304
Aliphatic >C10-C12	mg/kg	1200	8.0	5275581	1200	8.0	5275581	130	8.0	5275581
Aliphatic >C12-C16	mg/kg	3400	15	5275581	3500	15	5275581	43	15	5275581
Aliphatic >C16-C21	mg/kg	650	15	5275581	610	15	5275581	<15	15	5275581
Aliphatic >C21-<C32	mg/kg	110	15	5275581	120	15	5275581	<15	15	5275581
Aromatic >C10-C12	mg/kg	81 (1)	20	5275581	62 (1)	20	5275581	38 (1)	20	5275581
Aromatic >C12-C16	mg/kg	590	15	5275581	510	15	5275581	19	15	5275581
Aromatic >C16-C21	mg/kg	400	15	5275581	350	15	5275581	<15	15	5275581
Aromatic >C21-<C32	mg/kg	130	15	5275581	120	15	5275581	<15	15	5275581
Modified TPH (Tier 2)	mg/kg	6700	20	5271357				260	20	5271357
Reached Baseline at C32	mg/kg	Yes	N/A	5275581				Yes	N/A	5275581
Hydrocarbon Resemblance	mg/kg	COMMENT (2)	N/A	5275581				COMMENT (3)	N/A	5275581
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	120		5275581	112		5275581	105		5275581
n-Dotriacontane - Extractable	%	89		5275581	92		5275581	93		5275581
Isobutylbenzene - Volatile	%	76 (4)		5276304				104 (4)		5276304

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable
 (1) Elevated TEH RDL(s) due to detected levels in the method blank.
 (2) Weathered fuel oil fraction.
 (3) One product in the gas/fuel oil range.
 (4) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.

Maxxam Analytics International Corporation

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.2°C
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Water sample CWT-SW2 was received past the recommended 7 day holding time for PAH and PCB analysis.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5275581	Isobutylbenzene - Extractable	2017/11/21	105	30 - 130	116	%		
5275581	n-Dotriacontane - Extractable	2017/11/21	87	30 - 130	107	%		
5276304	Isobutylbenzene - Volatile	2017/11/21	97	60 - 140	95	%		
5273377	Moisture	2017/11/20					3.3	25
5273521	Moisture	2017/11/20					21	25
5275581	Aliphatic >C10-C12	2017/11/21	87	30 - 130	<8.0	mg/kg	0.83	50
5275581	Aliphatic >C12-C16	2017/11/21	90	30 - 130	<15	mg/kg	0.78	50
5275581	Aliphatic >C16-C21	2017/11/21	85	30 - 130	<15	mg/kg	7.0	50
5275581	Aliphatic >C21-<C32	2017/11/21	82	30 - 130	<15	mg/kg	1.5	50
5275581	Aromatic >C10-C12	2017/11/21	114	30 - 130	<20 (1)	mg/kg	27 (1)	50
5275581	Aromatic >C12-C16	2017/11/21	101	30 - 130	<15	mg/kg	13	50
5275581	Aromatic >C16-C21	2017/11/21	93	30 - 130	<15	mg/kg	15	50
5275581	Aromatic >C21-<C32	2017/11/21	96	30 - 130	<15	mg/kg	7.1	50
5276304	>C8-C10 Aromatics (-EX)	2017/11/21			<0.50	mg/kg		
5276304	Aliphatic >C6-C8	2017/11/21			<1.0	mg/kg		
5276304	Aliphatic >C8-C10	2017/11/21			<1.0	mg/kg		
5276304	Benzene	2017/11/21	96	60 - 140	<0.025	mg/kg		
5276304	Ethylbenzene	2017/11/21	97	60 - 140	<0.025	mg/kg		
5276304	Toluene	2017/11/21	94	60 - 140	<0.025	mg/kg		
5276304	Total Xylenes	2017/11/21	100	60 - 140	<0.050	mg/kg		

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

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.

(1) Elevated TEH RDL(s) due to detected levels in the method blank.

VALIDATION SIGNATURE PAGE

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



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 Analytics International Corporation - Bedford, Nova Scotia - Canada

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/12/07
 Report #: R4899959
 Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

Sample Matrix: Soil
 # Samples Received: 70

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/11/21	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	13	N/A	2017/11/27	N/A	Auto Calc.
Benzo(b/j)fluoranthene Sum (soil)	1	N/A	2017/11/29	N/A	Auto Calc.
TEH in Soil (AA PIRI)	1	2017/11/21	2017/11/21	ATL SOP 00116	Atl. RBCA v3.1 m
TEH in Soil (AA PIRI)	1	2017/11/21	2017/11/22	ATL SOP 00116	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (2)	13	2017/11/20	2017/11/20	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (2)	12	2017/11/20	2017/11/21	ATL SOP 00111	Atl. RBCA v3.1 m
TEH in Soil (PIRI) (2)	20	2017/11/20	2017/11/23	ATL SOP 00111	Atl. RBCA v3.1 m
Metals Solids Acid Extr. ICPMS	11	2017/11/20	2017/11/20	ATL SOP 00058	EPA 6020A R1 m
Metals Solids Acid Extr. ICPMS	16	2017/11/21	2017/11/21	ATL SOP 00058	EPA 6020A R1 m
Moisture	66	N/A	2017/11/20	ATL SOP 00001	OMOE Handbook 1983 m
Moisture	2	N/A	2017/11/21	ATL SOP 00001	OMOE Handbook 1983 m
PAH Compounds by GCMS (SIM) (2)	1	2017/11/20	2017/11/20	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (2)	13	2017/11/21	2017/11/26	ATL SOP 00102	EPA 8270D 2007 m
PAH Compounds by GCMS (SIM) (2)	1	2017/11/21	2017/11/28	ATL SOP 00102	EPA 8270D 2007 m
PCBs in soil by GC/ECD (2)	20	2017/11/21	2017/11/22	ATL SOP 00106	EPA 8082A 2007 m
PCBs in soil by GC/ECD (2)	10	2017/11/21	2017/11/23	ATL SOP 00106	EPA 8082A 2007 m
PCB Aroclor sum (soil)	20	N/A	2017/11/22	N/A	Auto Calc.
PCB Aroclor sum (soil)	10	N/A	2017/11/23	N/A	Auto Calc.
Asbestos (bulk) by PLM (Sub fr Bedford) (1)	2	N/A	2017/11/20		
ModTPH (T1) Calc. for Soil	8	N/A	2017/11/22	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	17	N/A	2017/11/23	N/A	Atl. RBCA v3.1 m
ModTPH (T1) Calc. for Soil	20	N/A	2017/11/24	N/A	Atl. RBCA v3.1 m
ModTPH (T2) Calc. for Soil	2	N/A	2017/11/22	N/A	Atl. RBCA v3 m
VOCs in Soil - Field Preserved (3)	5	N/A	2017/11/23	ATL SOP 00133	EPA 8260C R3 m
VOCs in Soil - Field Preserved (3)	1	N/A	2017/11/26	ATL SOP 00133	EPA 8260C R3 m
VPH in Soil (PIRI2) - Field Preserved (3)	2	N/A	2017/11/22	ATL SOP 00120	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (3)	6	N/A	2017/11/21	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (3)	18	N/A	2017/11/22	ATL SOP 00119	Atl. RBCA v3.1 m
VPH in Soil (PIRI) - Field Preserved (3)	21	N/A	2017/11/23	ATL SOP 00119	Atl. RBCA v3.1 m

Your Project #: 121414915.300.002
 Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
 Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/12/07
 Report #: R4899959
 Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

Sample Matrix: TISSUE
 # Samples Received: 4

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Metals in Terrestrial Biota	4	2017/11/24	2017/11/24	ATL SOP 00058	EPA 6020A R1 m
PCBs in tissue by GC/ECD (4)	4	2017/11/20	2017/11/27	ATL SOP 00110	EPA 8082A m
PCB Aroclor sum (tissue)	4	N/A	2017/11/27	N/A	Auto Calc.

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Reference
		Extracted	Analyzed		
Benzo(b/j)fluoranthene Sum (water)	1	N/A	2017/11/21	N/A	Auto Calc.
Metals Water Total MS	1	2017/11/21	2017/11/21	ATL SOP 00058	EPA 6020A R1 m
PAH in Water by GC/MS (SIM)	1	2017/11/17	2017/11/21	ATL SOP 00103	EPA 8270D 2007 m
PCBs in water by GC/ECD	1	2017/11/17	2017/11/20	ATL SOP 00107	EPA 8082A m
PCB Aroclor sum (water)	1	N/A	2017/11/20	N/A	Auto Calc.

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested.

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

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

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

Your Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Your C.O.C. #: N/A

Attention: Jim Slade

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

Report Date: 2017/12/07
Report #: R4899959
Version: 3 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B7P8843

Received: 2017/11/16, 10:23

- (1) This test was performed by Sub Bedford to EMSL
- (2) Soils are reported on a dry weight basis unless otherwise specified.
- (3) 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.
- (4) Results are reported on an as received basis unless otherwise indicated.

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		FOO100	FOO100	FOO101	FOO102	FOO103	FOO104			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP6-BS1	CWT-TP6-BS1 Lab-Dup	CWT-TP7-BS1	CWT-TP9-BS1	CWT-TP10-BS1	CWT-TP10-BS2	RDL	QC Batch	MDL

Inorganics

Moisture	%	21	22	18	13	24	18	1.0	5273377	0.20
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		FOO105	FOO106	FOO107	FOO108	FOO109			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP11-BS1	CWT-TP12-BS1	CWT-TP13-BS1	CWT-TP13-BS2	CWT-TP14-BS1	RDL	QC Batch	MDL

Inorganics

Moisture	%	21	23	17	17	15	1.0	5273377	0.20
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Maxxam ID		FOO110	FOO111	FOO112	FOO113	FOO114			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP15-BS1	CWT-TP15-BS2	CWT-TP16-BS1	CWT-TP16-BS2	CWT-TP17-BS1	RDL	QC Batch	MDL

Inorganics

Moisture	%	14	16	12	13	24	1.0	5273377	0.20
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

Maxxam ID		FOO115	FOO116	FOO117	FOO118	FOO119			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP17-BS2	CWT-TP18-BS1	CWT-TP19-BS1	CWT-TP19-BS2	CWT-TP20-BS1	RDL	QC Batch	MDL

Inorganics

Moisture	%	20	16	22	18	12	1.0	5273377	0.20
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RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FOO120	FOO120	FOO121	FOO122	FOO123			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP21-BS1	CWT-TP21-BS1 Lab-Dup	CWT-TP22-BS1	CWT-TP23-BS1	CWT-TP24-BS1	RDL	QC Batch	MDL

Inorganics									
Moisture	%	16	17	14	21	29	1.0	5273406	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

Maxxam ID		FOO124	FOO125	FOO126	FOO127			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP25-BS1	CWT-TP25-BS2	CWT-TP26-BS1	CWT-TP26-BS2	RDL	QC Batch	MDL

Inorganics									
Moisture	%	19	20	8.4	13	1.0	5273406	0.20	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam ID		FOO128		FOO129	FOO130	FOO131			
Sampling Date		2017/11/07		2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A		N/A	N/A	N/A			
	UNITS	CWT-TP27-BS1	QC Batch	CWT-TP27-BS2	CWT-TP28-BS1	CWT-TP28-BS2	RDL	QC Batch	MDL

Inorganics									
Moisture	%	17	5275609	18	20	19	1.0	5273406	0.20
Subcontracted Analysis									
Subcontract Parameter	N/A	ATTACHED	5277017						
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam ID		FOO132		FOO133	FOO134	FOO135	FOO136			
Sampling Date		2017/11/07		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP29-BS1	QC Batch	CWT-TP29-BS2	CWT-TP30-BS1	CWT-TP30-BS2	CWT-TP31-BS1	RDL	QC Batch	MDL

Inorganics										
Moisture	%	17	5275609	17	18	20	7.8	1.0	5273406	0.20
Subcontracted Analysis										
Subcontract Parameter	N/A	ATTACHED	5277017							
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FOO137	FOO138	FOO139	FOO140	FOO141			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP31-BS2	CWT-TP32-BS1	CWT-TP32-BS2	CWT-TP33-BS1	CWT-TP33-BS2	RDL	QC Batch	MDL

Inorganics									
Moisture	%	15	13	12	12	9.0	1.0	5273406	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam ID		FOO142	FOO142	FOO143	FOO144	FOO146			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP34-BS1	CWT-TP34-BS1 Lab-Dup	CWT-TP35-BS1	CWT-TP35-BS2	CWT-TP36-BS2	RDL	QC Batch	MDL

Inorganics									
Moisture	%	7.1	8.8	15	23	9.8	1.0	5273521	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

Maxxam ID		FOO147	FOO148	FOO149	FOO150	FOO151			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP37-BS1	CWT-TP37-BS2	CWT-TP38-BS1	CWT-TP38-BS2	CWT-TP39-BS1	RDL	QC Batch	MDL

Inorganics									
Moisture	%	17	13	15	13	17	1.0	5273521	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

Maxxam ID		FOO152	FOO154	FOO155	FOO156	FOO157			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP39-BS2	CWT-TP40-BS2	CWT-TP41-BS1	CWT-TP41-BS2	CWT-TP42-BS1	RDL	QC Batch	MDL

Inorganics									
Moisture	%	13	11	15	13	11	1.0	5273521	0.20
RDL = Reportable Detection Limit QC Batch = Quality Control Batch									

RESULTS OF ANALYSES OF SOIL

Maxxam ID		FOO158	FOO159	FOO165	FOO166	FOO167			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP42-BS2	CWT-TP43-BS1	CWT-TP100-BS1	CWT-TP101-BS1	CWT-TP102-BS1	RDL	QC Batch	MDL

Inorganics									
Moisture	%	9.1	18	15	12	12	1.0	5273521	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FOO168		FOO169	FOO170	FOO171			
Sampling Date		2017/11/07		2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A		N/A	N/A	N/A			
	UNITS	CWT-TP103-BS2	QC Batch	CWT-TP104-BS2	CWT-TP105-BS1	CWT-TP106-BS2	RDL	QC Batch	MDL

Inorganics									
Moisture	%	16	5273521	12	12	17	1.0	5273460	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		FOO172	FOO173	FOO174			
Sampling Date		2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A			
	UNITS	CWT-TP109-BS2	CWT-TP110-BS2	CWT-TP111-BS1	RDL	QC Batch	MDL

Inorganics							
Moisture	%	9.2	19	9.7	1.0	5273460	0.20

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FOO100	FOO103	FOO105	FOO109	FOO110			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP6-BS1	CWT-TP10-BS1	CWT-TP11-BS1	CWT-TP14-BS1	CWT-TP15-BS1	RDL	QC Batch	MDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	5100	16000	6100	4900	6200	10	5275551	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Barium (Ba)	mg/kg	20	28	42	62	57	5.0	5275551	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5275551	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	0.38	0.30	5275551	N/A
Acid Extractable Chromium (Cr)	mg/kg	12	18	11	9.4	12	2.0	5275551	N/A
Acid Extractable Cobalt (Co)	mg/kg	1.5	2.1	2.0	2.7	2.9	1.0	5275551	N/A
Acid Extractable Copper (Cu)	mg/kg	3.6	4.3	7.0	6.1	13	2.0	5275551	N/A
Acid Extractable Iron (Fe)	mg/kg	14000	18000	15000	15000	16000	50	5275551	N/A
Acid Extractable Lead (Pb)	mg/kg	7.2	3.1	9.4	22	43	0.50	5275551	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	2.7	3.4	4.4	4.7	2.0	5275551	N/A
Acid Extractable Manganese (Mn)	mg/kg	95	110	190	370	230	2.0	5275551	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5275551	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Nickel (Ni)	mg/kg	2.5	3.9	3.6	3.4	5.5	2.0	5275551	N/A
Acid Extractable Rubidium (Rb)	mg/kg	2.7	3.2	4.9	7.2	7.9	2.0	5275551	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5275551	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5275551	N/A
Acid Extractable Strontium (Sr)	mg/kg	12	11	13	17	17	5.0	5275551	N/A
Acid Extractable Thallium (Tl)	mg/kg	0.18	0.13	<0.10	<0.10	<0.10	0.10	5275551	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Uranium (U)	mg/kg	0.39	0.47	0.40	0.34	0.48	0.10	5275551	N/A
Acid Extractable Vanadium (V)	mg/kg	29	45	27	23	31	2.0	5275551	N/A
Acid Extractable Zinc (Zn)	mg/kg	37	16	45	86	120	5.0	5275551	N/A
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FOO112	FOO116	FOO119	FOO120	FOO122			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP16-BS1	CWT-TP18-BS1	CWT-TP20-BS1	CWT-TP21-BS1	CWT-TP23-BS1	RDL	QC Batch	MDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	5600	5800	5200	6900	7100	10	5275551	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Barium (Ba)	mg/kg	40	22	28	43	22	5.0	5275551	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5275551	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5275551	N/A
Acid Extractable Chromium (Cr)	mg/kg	10	15	16	12	12	2.0	5275551	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.5	2.9	3.4	3.3	2.3	1.0	5275551	N/A
Acid Extractable Copper (Cu)	mg/kg	5.0	6.8	7.3	7.1	12	2.0	5275551	N/A
Acid Extractable Iron (Fe)	mg/kg	14000	17000	18000	15000	15000	50	5275551	N/A
Acid Extractable Lead (Pb)	mg/kg	3.2	2.5	3.2	7.4	5.2	0.50	5275551	N/A
Acid Extractable Lithium (Li)	mg/kg	4.9	3.1	3.3	4.6	3.0	2.0	5275551	N/A
Acid Extractable Manganese (Mn)	mg/kg	200	130	140	180	120	2.0	5275551	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5275551	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Nickel (Ni)	mg/kg	3.9	5.4	5.4	5.3	3.9	2.0	5275551	N/A
Acid Extractable Rubidium (Rb)	mg/kg	6.7	3.5	3.7	6.8	3.2	2.0	5275551	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5275551	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5275551	N/A
Acid Extractable Strontium (Sr)	mg/kg	10	10	11	16	11	5.0	5275551	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5275551	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Uranium (U)	mg/kg	0.48	0.43	0.40	0.43	0.41	0.10	5275551	N/A
Acid Extractable Vanadium (V)	mg/kg	29	41	46	32	35	2.0	5275551	N/A
Acid Extractable Zinc (Zn)	mg/kg	27	16	18	34	50	5.0	5275551	N/A
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FOO123	FOO124	FOO126	FOO129	FOO130			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP24-BS1	CWT-TP25-BS1	CWT-TP26-BS1	CWT-TP27-BS2	CWT-TP28-BS1	RDL	QC Batch	MDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	6200	8100	8000	6100	6400	10	5275551	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Barium (Ba)	mg/kg	40	66	94	25	28	5.0	5275551	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5275551	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	2.3	<0.30	<0.30	<0.30	0.30	5275551	N/A
Acid Extractable Chromium (Cr)	mg/kg	14	17	5.5	11	12	2.0	5275551	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.4	3.0	2.0	2.2	2.2	1.0	5275551	N/A
Acid Extractable Copper (Cu)	mg/kg	9.9	20	4.8	4.9	7.9	2.0	5275551	N/A
Acid Extractable Iron (Fe)	mg/kg	13000	18000	29000	13000	12000	50	5275551	N/A
Acid Extractable Lead (Pb)	mg/kg	9.0	92	7.5	4.4	6.9	0.50	5275551	N/A
Acid Extractable Lithium (Li)	mg/kg	3.9	4.8	4.2	2.8	3.2	2.0	5275551	N/A
Acid Extractable Manganese (Mn)	mg/kg	140	290	760	110	120	2.0	5275551	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	0.18	<0.10	<0.10	<0.10	0.10	5275551	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	9.7	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.3	6.6	<2.0	3.5	3.8	2.0	5275551	N/A
Acid Extractable Rubidium (Rb)	mg/kg	5.9	5.2	13	4.6	5.3	2.0	5275551	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5275551	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5275551	N/A
Acid Extractable Strontium (Sr)	mg/kg	9.4	24	6.0	8.0	9.4	5.0	5275551	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5275551	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5275551	N/A
Acid Extractable Uranium (U)	mg/kg	0.42	0.59	0.36	0.41	0.39	0.10	5275551	N/A
Acid Extractable Vanadium (V)	mg/kg	32	32	19	31	30	2.0	5275551	N/A
Acid Extractable Zinc (Zn)	mg/kg	36	570	77	50	68	5.0	5275551	N/A
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									
N/A = Not Applicable									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FOO133		FOO134	FOO137	FOO145			
Sampling Date		2017/11/07		2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A		N/A	N/A	N/A			
	UNITS	CWT-TP29-BS2	QC Batch	CWT-TP30-BS1	CWT-TP31-BS2	CWT-TP36-BS1	RDL	QC Batch	MDL
Metals									
Acid Extractable Aluminum (Al)	mg/kg	6500	5275551	6300	13000	3700	10	5273853	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	5275551	5.4	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	5275551	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Barium (Ba)	mg/kg	28	5275551	73	170	36	5.0	5273853	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	5275551	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	5275551	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Boron (B)	mg/kg	<50	5275551	<50	<50	<50	50	5273853	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	5275551	<0.30	<0.30	<0.30	0.30	5273853	N/A
Acid Extractable Chromium (Cr)	mg/kg	12	5275551	6.8	5.2	10	2.0	5273853	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.5	5275551	1.7	2.2	2.6	1.0	5273853	N/A
Acid Extractable Copper (Cu)	mg/kg	6.4	5275551	9.0	7.4	6.3	2.0	5273853	N/A
Acid Extractable Iron (Fe)	mg/kg	14000	5275551	18000	43000	9600	50	5273853	N/A
Acid Extractable Lead (Pb)	mg/kg	5.1	5275551	14	5.3	6.1	0.50	5273853	N/A
Acid Extractable Lithium (Li)	mg/kg	3.1	5275551	3.5	6.8	3.3	2.0	5273853	N/A
Acid Extractable Manganese (Mn)	mg/kg	150	5275551	470	760	130	2.0	5273853	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	5275551	<0.10	<0.10	<0.10	0.10	5273853	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	5275551	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Nickel (Ni)	mg/kg	4.1	5275551	5.3	<2.0	6.3	2.0	5273853	N/A
Acid Extractable Rubidium (Rb)	mg/kg	4.8	5275551	6.3	18	6.4	2.0	5273853	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	5275551	<1.0	<1.0	<1.0	1.0	5273853	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	5275551	<0.50	<0.50	<0.50	0.50	5273853	N/A
Acid Extractable Strontium (Sr)	mg/kg	9.5	5275551	7.0	7.2	10	5.0	5273853	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	5275551	<0.10	0.11	<0.10	0.10	5273853	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	5275551	<2.0	<2.0	29	2.0	5273853	N/A
Acid Extractable Uranium (U)	mg/kg	0.41	5275551	0.43	0.67	0.31	0.10	5273853	N/A
Acid Extractable Vanadium (V)	mg/kg	33	5275551	18	7.5	19	2.0	5273853	N/A
Acid Extractable Zinc (Zn)	mg/kg	25	5275551	110	120	34	5.0	5273853	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		FOO147	FOO147	FOO151	FOO153	FOO157			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP37-BS1	CWT-TP37-BS1 Lab-Dup	CWT-TP39-BS1	CWT-TP40-BS1	CWT-TP42-BS1	RDL	QC Batch	MDL

Metals									
Acid Extractable Aluminum (Al)	mg/kg	3500	3400	3100	4100	4600	10	5273853	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Barium (Ba)	mg/kg	31	31	28	42	32	5.0	5273853	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	<50	50	5273853	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5273853	N/A
Acid Extractable Chromium (Cr)	mg/kg	5.7	6.0	6.6	7.5	14	2.0	5273853	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.0	1.8	1.6	2.7	2.7	1.0	5273853	N/A
Acid Extractable Copper (Cu)	mg/kg	8.5	8.5	5.2	7.4	3.7	2.0	5273853	N/A
Acid Extractable Iron (Fe)	mg/kg	7400	7600	8500	8200	16000	50	5273853	N/A
Acid Extractable Lead (Pb)	mg/kg	5.0	5.1	9.0	15	1.9	0.50	5273853	N/A
Acid Extractable Lithium (Li)	mg/kg	3.3	3.2	2.9	3.8	5.5	2.0	5273853	N/A
Acid Extractable Manganese (Mn)	mg/kg	110	120	95	120	120	2.0	5273853	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5273853	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Nickel (Ni)	mg/kg	3.0	3.0	2.8	5.4	4.9	2.0	5273853	N/A
Acid Extractable Rubidium (Rb)	mg/kg	7.7	7.2	4.6	8.1	6.3	2.0	5273853	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5273853	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5273853	N/A
Acid Extractable Strontium (Sr)	mg/kg	8.9	9.6	7.0	11	7.8	5.0	5273853	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5273853	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Uranium (U)	mg/kg	0.29	0.27	0.33	0.34	0.53	0.10	5273853	N/A
Acid Extractable Vanadium (V)	mg/kg	14	14	15	16	43	2.0	5273853	N/A
Acid Extractable Zinc (Zn)	mg/kg	26	27	23	23	17	5.0	5273853	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		FOO165	FOO166	FOO167	FOO170			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP100-BS1	CWT-TP101-BS1	CWT-TP102-BS1	CWT-TP105-BS1	RDL	QC Batch	MDL
Metals								
Acid Extractable Aluminum (Al)	mg/kg	6100	6700	4500	5300	10	5273853	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	2.1	2.0	5273853	N/A
Acid Extractable Barium (Ba)	mg/kg	27	64	26	32	5.0	5273853	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Bismuth (Bi)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Boron (B)	mg/kg	<50	<50	<50	<50	50	5273853	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	0.30	5273853	N/A
Acid Extractable Chromium (Cr)	mg/kg	15	6.1	14	18	2.0	5273853	N/A
Acid Extractable Cobalt (Co)	mg/kg	2.7	1.8	2.8	2.9	1.0	5273853	N/A
Acid Extractable Copper (Cu)	mg/kg	6.8	4.0	6.6	4.0	2.0	5273853	N/A
Acid Extractable Iron (Fe)	mg/kg	16000	23000	16000	21000	50	5273853	N/A
Acid Extractable Lead (Pb)	mg/kg	2.9	5.9	2.3	2.7	0.50	5273853	N/A
Acid Extractable Lithium (Li)	mg/kg	3.1	3.2	2.7	5.8	2.0	5273853	N/A
Acid Extractable Manganese (Mn)	mg/kg	140	450	130	150	2.0	5273853	N/A
Acid Extractable Mercury (Hg)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	5273853	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Nickel (Ni)	mg/kg	5.4	<2.0	4.7	4.9	2.0	5273853	N/A
Acid Extractable Rubidium (Rb)	mg/kg	4.0	9.2	3.0	5.6	2.0	5273853	N/A
Acid Extractable Selenium (Se)	mg/kg	<1.0	<1.0	<1.0	<1.0	1.0	5273853	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	0.50	5273853	N/A
Acid Extractable Strontium (Sr)	mg/kg	9.7	5.7	11	10	5.0	5273853	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	0.10	5273853	N/A
Acid Extractable Tin (Sn)	mg/kg	<2.0	<2.0	<2.0	<2.0	2.0	5273853	N/A
Acid Extractable Uranium (U)	mg/kg	0.43	0.30	0.38	0.73	0.10	5273853	N/A
Acid Extractable Vanadium (V)	mg/kg	37	19	38	61	2.0	5273853	N/A
Acid Extractable Zinc (Zn)	mg/kg	18	55	14	19	5.0	5273853	N/A
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								
N/A = Not Applicable								

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FOO101				FOO101			
Sampling Date		2017/11/07				2017/11/07			
COC Number		N/A				N/A			
	UNITS	CWT-TP7-BS1	RDL	QC Batch	MDL	CWT-TP7-BS1 Lab-Dup	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Acenaphthene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Acenaphthylene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Anthracene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	5270609	N/A				
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Chrysene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Fluoranthene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Fluorene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Naphthalene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Perylene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Phenanthrene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Pyrene	mg/kg	<0.010	0.010	5282623	N/A	<0.010	0.010	5282623	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	88		5282623		88		5282623	
D14-Terphenyl (FS)	%	91		5282623		93		5282623	
D8-Acenaphthylene	%	89		5282623		89		5282623	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FOO105	FOO111	FOO114	FOO117	FOO121			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP11-BS1	CWT-TP15-BS2	CWT-TP17-BS1	CWT-TP19-BS1	CWT-TP22-BS1	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.010	0.41	0.018	<0.010	<0.010	0.010	5282623	N/A
2-Methylnaphthalene	mg/kg	<0.010	0.68	0.039	<0.010	<0.010	0.010	5282623	N/A
Acenaphthene	mg/kg	<0.010	4.0	0.096	<0.010	<0.010	0.010	5282623	N/A
Acenaphthylene	mg/kg	0.019	0.043	0.048	<0.010	<0.010	0.010	5282623	N/A
Anthracene	mg/kg	0.047	5.6	0.49	<0.010	<0.010	0.010	5282623	N/A
Benzo(a)anthracene	mg/kg	0.066	9.1	1.7	<0.010	<0.010	0.010	5282623	N/A
Benzo(a)pyrene	mg/kg	0.042	6.9	1.3	<0.010	<0.010	0.010	5282623	N/A
Benzo(b)fluoranthene	mg/kg	0.096	5.7	1.8	<0.010	<0.010	0.010	5282623	N/A
Benzo(b,j)fluoranthene	mg/kg	0.15	9.3	2.9	<0.020	<0.020	0.020	5270609	N/A
Benzo(g,h,i)perylene	mg/kg	0.027	3.1	0.57	<0.010	<0.010	0.010	5282623	N/A
Benzo(j)fluoranthene	mg/kg	0.053	3.5	1.0	<0.010	<0.010	0.010	5282623	N/A
Benzo(k)fluoranthene	mg/kg	0.052	3.4	1.0	<0.010	<0.010	0.010	5282623	N/A
Chrysene	mg/kg	0.19	9.1	2.1	<0.010	<0.010	0.010	5282623	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.91	0.14	<0.010	<0.010	0.010	5282623	N/A
Fluoranthene	mg/kg	0.22	22	4.2	<0.010	<0.010	0.010	5282623	N/A
Fluorene	mg/kg	<0.010	3.4	0.18	<0.010	<0.010	0.010	5282623	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	0.026	3.1	0.55	<0.010	<0.010	0.010	5282623	N/A
Naphthalene	mg/kg	<0.010	1.6	0.067	<0.010	<0.010	0.010	5282623	N/A
Perylene	mg/kg	<0.010	1.8	0.26	<0.010	<0.010	0.010	5282623	N/A
Phenanthrene	mg/kg	0.062	20	1.1	<0.010	<0.010	0.010	5282623	N/A
Pyrene	mg/kg	0.18	16	4.9	<0.010	<0.010	0.010	5282623	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	85	84	91	86	98		5282623	
D14-Terphenyl (FS)	%	92	92	95	92	98		5282623	
D8-Acenaphthylene	%	87	93	90	86	100		5282623	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FOO125	FOO126	FOO130	FOO134	FOO136			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP25-BS2	CWT-TP26-BS1	CWT-TP28-BS1	CWT-TP30-BS1	CWT-TP31-BS1	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	mg/kg	<0.010	<0.010	<0.010	0.019	<0.010	0.010	5282623	N/A
2-Methylnaphthalene	mg/kg	0.016	<0.010	<0.010	0.044	<0.010	0.010	5282623	N/A
Acenaphthene	mg/kg	0.088	<0.010	<0.010	1.8	<0.010	0.010	5282623	N/A
Acenaphthylene	mg/kg	<0.010	<0.010	<0.010	0.080	<0.010	0.010	5282623	N/A
Anthracene	mg/kg	0.14	<0.010	<0.010	0.53	<0.010	0.010	5282623	N/A
Benzo(a)anthracene	mg/kg	0.26	<0.010	<0.010	1.5	<0.010	0.010	5282623	N/A
Benzo(a)pyrene	mg/kg	0.25	<0.010	<0.010	0.36	<0.010	0.010	5282623	N/A
Benzo(b)fluoranthene	mg/kg	0.25	<0.010	<0.010	0.48	<0.010	0.010	5282623	N/A
Benzo(b,j)fluoranthene	mg/kg	0.38	<0.020	<0.020	0.78	<0.020	0.020	5270609	N/A
Benzo(g,h,i)perylene	mg/kg	0.15	<0.010	<0.010	0.087	<0.010	0.010	5282623	N/A
Benzo(j)fluoranthene	mg/kg	0.14	<0.010	<0.010	0.30	<0.010	0.010	5282623	N/A
Benzo(k)fluoranthene	mg/kg	0.14	<0.010	<0.010	0.28	<0.010	0.010	5282623	N/A
Chrysene	mg/kg	0.32	<0.010	<0.010	1.2	<0.010	0.010	5282623	N/A
Dibenz(a,h)anthracene	mg/kg	0.037	<0.010	<0.010	0.024	<0.010	0.010	5282623	N/A
Fluoranthene	mg/kg	0.70	<0.010	<0.010	9.8	<0.010	0.010	5282623	N/A
Fluorene	mg/kg	0.072	<0.010	<0.010	1.3	<0.010	0.010	5282623	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	0.12	<0.010	<0.010	0.086	<0.010	0.010	5282623	N/A
Naphthalene	mg/kg	0.026	<0.010	<0.010	0.014	<0.010	0.010	5282623	N/A
Perylene	mg/kg	0.073	<0.010	<0.010	0.098	<0.010	0.010	5282623	N/A
Phenanthrene	mg/kg	0.57	<0.010	<0.010	4.3	<0.010	0.010	5282623	N/A
Pyrene	mg/kg	0.52	<0.010	<0.010	6.1	<0.010	0.010	5282623	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	88	84	91	92	84		5282623	
D14-Terphenyl (FS)	%	91	84	96	96	86		5282623	
D8-Acenaphthylene	%	89	84	91	96	86		5282623	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		FOO146			FOO155				FOO155			
Sampling Date		2017/11/07			2017/11/07				2017/11/07			
COC Number		N/A			N/A				N/A			
	UNITS	CWT-TP36-BS2	RDL	QC Batch	CWT-TP41-BS1	RDL	QC Batch	MDL	CWT-TP41-BS1 Lab-Dup	RDL	QC Batch	MDL

Polyaromatic Hydrocarbons												
1-Methylnaphthalene	mg/kg	0.083	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
2-Methylnaphthalene	mg/kg	0.11	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Acenaphthene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Acenaphthylene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Anthracene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Benzo(a)anthracene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Benzo(a)pyrene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	0.020	5270609	<0.020	0.020	5270609	N/A				
Benzo(g,h,i)perylene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Chrysene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Fluoranthene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Fluorene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Naphthalene	mg/kg	<0.026 (1)	0.026	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Perylene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Phenanthrene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A
Pyrene	mg/kg	<0.010	0.010	5282623	<0.010	0.010	5273741	N/A	<0.010	0.010	5273741	N/A

Surrogate Recovery (%)												
D10-Anthracene	%	94		5282623	80		5273741		90		5273741	
D14-Terphenyl (FS)	%	98		5282623	82		5273741		87		5273741	
D8-Acenaphthylene	%	95		5282623	102		5273741		103		5273741	

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		FOO166		FOO169			
Sampling Date		2017/11/07		2017/11/07			
COC Number		N/A		N/A			
	UNITS	CWT-TP101-BS1	QC Batch	CWT-TP104-BS2	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons							
1-Methylnaphthalene	mg/kg	<0.010	5282623	0.25	0.010	5285487	N/A
2-Methylnaphthalene	mg/kg	<0.010	5282623	0.51	0.010	5285487	N/A
Acenaphthene	mg/kg	<0.010	5282623	0.013	0.010	5285487	N/A
Acenaphthylene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Anthracene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Benzo(a)anthracene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Benzo(a)pyrene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Benzo(b)fluoranthene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Benzo(b/j)fluoranthene	mg/kg	<0.020	5270609	<0.020	0.020	5270609	N/A
Benzo(g,h,i)perylene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Benzo(j)fluoranthene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Benzo(k)fluoranthene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Chrysene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Dibenz(a,h)anthracene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Fluoranthene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Fluorene	mg/kg	<0.010	5282623	0.021	0.010	5285487	N/A
Indeno(1,2,3-cd)pyrene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Naphthalene	mg/kg	<0.010	5282623	0.21	0.010	5285487	N/A
Perylene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Phenanthrene	mg/kg	<0.010	5282623	0.012	0.010	5285487	N/A
Pyrene	mg/kg	<0.010	5282623	<0.010	0.010	5285487	N/A
Surrogate Recovery (%)							
D10-Anthracene	%	80	5282623	100		5285487	
D14-Terphenyl (FS)	%	81	5282623	100		5285487	
D8-Acenaphthylene	%	83	5282623	96		5285487	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FOO105	FOO127	FOO131	FOO135			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP11-BS1	CWT-TP26-BS2	CWT-TP28-BS2	CWT-TP30-BS2	RDL	QC Batch	MDL
Volatile Organics								
1,1,1-Trichloroethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
1,1,2,2-Tetrachloroethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00040
1,1,2-Trichloroethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00040
1,1-Dichloroethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
1,1-Dichloroethylene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
1,2-Dichlorobenzene	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
1,2-Dichloroethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
1,2-Dichloropropane	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
1,3-Dichlorobenzene	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
1,4-Dichlorobenzene	ug/kg	<25	<25	<25	<25	25	5276232	0.00030
Benzene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Bromodichloromethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
Bromoform	ug/kg	<25	<25	<25	<25	25	5276232	0.00030
Bromomethane	ug/kg	<50	<50	<50	<50	50	5276232	0.00040
Carbon Tetrachloride	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Chlorobenzene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Chloroethane	ug/kg	<200	<200	<200	<200	200	5276232	0.00030
Chloroform	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
cis-1,2-Dichloroethylene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
cis-1,3-Dichloropropene	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
Dibromochloromethane	ug/kg	<25	<25	<25	<25	25	5276232	0.00030
Ethylbenzene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Ethylene Dibromide	ug/kg	<25	<25	<25	<25	25	5276232	0.00040
Methyl t-butyl ether (MTBE)	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Methylene Chloride(Dichloromethane)	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
o-Xylene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
p+m-Xylene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Styrene	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
Tetrachloroethylene	ug/kg	<25	<25	<25	<25	25	5276232	0.00030
Toluene	ug/kg	<25	<25	<25	<25	25	5276232	0.00010
Total Xylenes	ug/kg	<50	<50	<50	<50	50	5276232	N/A
trans-1,2-Dichloroethylene	ug/kg	<25	<25	<25	<25	25	5276232	0.00020
trans-1,3-Dichloropropene	ug/kg	<25	<25	<25	<25	25	5276232	0.00030
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable								

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FOO105	FOO127	FOO131	FOO135			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP11-BS1	CWT-TP26-BS2	CWT-TP28-BS2	CWT-TP30-BS2	RDL	QC Batch	MDL
Trichloroethylene	ug/kg	<10	<10	<10	<10	10	5276232	0.00020
Trichlorofluoromethane (FREON 11)	ug/kg	<25	<25	<25	<25	25	5276232	0.00030
Vinyl Chloride	ug/kg	<20	<20	<20	<20	20	5276232	0.00020
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	100 (1)	101	100	99		5276232	
D10-o-Xylene	%	93	112	104	84		5276232	
D4-1,2-Dichloroethane	%	100	96	98	100		5276232	
D8-Toluene	%	96	98	97	97		5276232	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.								

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FOO146		FOO169			
Sampling Date		2017/11/07		2017/11/07			
COC Number		N/A		N/A			
	UNITS	CWT-TP36-BS2	RDL	CWT-TP104-BS2	RDL	QC Batch	MDL
Volatile Organics							
1,1,1-Trichloroethane	ug/kg	<25	25	<25	25	5276232	0.00010
1,1,2,2-Tetrachloroethane	ug/kg	<25	25	<150 (1)	150	5276232	0.00040
1,1,2-Trichloroethane	ug/kg	<25	25	<25	25	5276232	0.00040
1,1-Dichloroethane	ug/kg	<25	25	<25	25	5276232	0.00010
1,1-Dichloroethylene	ug/kg	<25	25	<25	25	5276232	0.00010
1,2-Dichlorobenzene	ug/kg	<25	25	<25	25	5276232	0.00020
1,2-Dichloroethane	ug/kg	<25	25	<25	25	5276232	0.00010
1,2-Dichloropropane	ug/kg	<25	25	<25	25	5276232	0.00020
1,3-Dichlorobenzene	ug/kg	<25	25	<25	25	5276232	0.00020
1,4-Dichlorobenzene	ug/kg	<25	25	<25	25	5276232	0.00030
Benzene	ug/kg	<25	25	<25	25	5276232	0.00010
Bromodichloromethane	ug/kg	<25	25	<25	25	5276232	0.00020
Bromoform	ug/kg	<25	25	<25	25	5276232	0.00030
Bromomethane	ug/kg	<50	50	<50	50	5276232	0.00040
Carbon Tetrachloride	ug/kg	<25	25	<25	25	5276232	0.00010
Chlorobenzene	ug/kg	<25	25	<32 (1)	32	5276232	0.00010
Chloroethane	ug/kg	<200	200	<200	200	5276232	0.00030
Chloroform	ug/kg	<25	25	<25	25	5276232	0.00010
cis-1,2-Dichloroethylene	ug/kg	<25	25	<25	25	5276232	0.00010
cis-1,3-Dichloropropene	ug/kg	<25	25	<25	25	5276232	0.00020
Dibromochloromethane	ug/kg	<25	25	<25	25	5276232	0.00030
Ethylbenzene	ug/kg	<25	25	<25	25	5276232	0.00010
Ethylene Dibromide	ug/kg	<25	25	<25	25	5276232	0.00040
Methyl t-butyl ether (MTBE)	ug/kg	120	25	<25	25	5276232	0.00010
Methylene Chloride(Dichloromethane)	ug/kg	36	25	<25	25	5276232	0.00020
o-Xylene	ug/kg	<25	25	63	25	5276232	0.00010
p+m-Xylene	ug/kg	<25	25	110	25	5276232	0.00010
Styrene	ug/kg	<25	25	<25	25	5276232	0.00020
Tetrachloroethylene	ug/kg	<25	25	<25	25	5276232	0.00030
Toluene	ug/kg	<25	25	<25	25	5276232	0.00010
Total Xylenes	ug/kg	<50	50	180	50	5276232	N/A
trans-1,2-Dichloroethylene	ug/kg	<25	25	<25	25	5276232	0.00020
trans-1,3-Dichloropropene	ug/kg	<25	25	<25	25	5276232	0.00030
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated VOC RDL(s) due to matrix interference.							

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		FOO146		FOO169			
Sampling Date		2017/11/07		2017/11/07			
COC Number		N/A		N/A			
	UNITS	CWT-TP36-BS2	RDL	CWT-TP104-BS2	RDL	QC Batch	MDL
Trichloroethylene	ug/kg	<10	10	<10	10	5276232	0.00020
Trichlorofluoromethane (FREON 11)	ug/kg	<25	25	<25	25	5276232	0.00030
Vinyl Chloride	ug/kg	<20	20	<20	20	5276232	0.00020
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	98		100 (1)		5276232	
D10-o-Xylene	%	131 (2)		128		5276232	
D4-1,2-Dichloroethane	%	102		99		5276232	
D8-Toluene	%	96		98		5276232	
<p>RDL = Reportable Detection Limit QC Batch = Quality Control Batch (1) VOC samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (2) VOC surrogate not within acceptance limits. Analysis was repeated with similar results.</p>							

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FOO100					FOO100			
Sampling Date		2017/11/07					2017/11/07			
COC Number		N/A					N/A			
	UNITS	CWT-TP6-BS1	RDL	QC Batch	MDL	CWT-TP6-BS1 Lab-Dup	RDL	QC Batch	MDL	
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	0.025	5274278	N/A					
Toluene	mg/kg	<0.025	0.025	5274278	N/A					
Ethylbenzene	mg/kg	<0.025	0.025	5274278	0.025					
Total Xylenes	mg/kg	<0.050	0.050	5274278	N/A					
C6 - C10 (less BTEX)	mg/kg	<2.5	2.5	5274278	N/A					
>C10-C16 Hydrocarbons	mg/kg	<10	10	5273789	N/A	<10	10	5273789	N/A	
>C16-C21 Hydrocarbons	mg/kg	<10	10	5273789	N/A	<10	10	5273789	N/A	
>C21-<C32 Hydrocarbons	mg/kg	24	15	5273789	N/A	33	15	5273789	N/A	
Modified TPH (Tier1)	mg/kg	24	15	5271231	N/A					
Reached Baseline at C32	mg/kg	Yes	N/A	5273789	N/A					
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	N/A	5273789	N/A					
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	109		5273789		101		5273789		
n-Dotriacontane - Extractable	%	114 (2)		5273789		111 (2)		5273789		
Isobutylbenzene - Volatile	%	110		5274278						
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		FOO101	FOO102		FOO104		FOO105			
Sampling Date		2017/11/07	2017/11/07		2017/11/07		2017/11/07			
COC Number		N/A	N/A		N/A		N/A			
	UNITS	CWT-TP7-BS1	CWT-TP9-BS1	QC Batch	CWT-TP10-BS2	QC Batch	CWT-TP11-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	5274278	<0.025	5278476	<0.025	0.025	5274278	N/A
Toluene	mg/kg	<0.025	<0.025	5274278	<0.025	5278476	<0.025	0.025	5274278	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5274278	<0.025	5278476	<0.025	0.025	5274278	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5274278	<0.050	5278476	<0.050	0.050	5274278	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5274278	<2.5	5278476	<2.5	2.5	5274278	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5273789	<10	5273788	<10	10	5273789	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5273789	<10	5273788	<10	10	5273789	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	74	5273789	<15	5273788	29	15	5273789	N/A
Modified TPH (Tier1)	mg/kg	<15	74	5271231	<15	5271231	29	15	5271231	N/A
Reached Baseline at C32	mg/kg	NA	Yes	5273789	NA	5273788	Yes	N/A	5273789	N/A
Hydrocarbon Resemblance	mg/kg	NA	COMMENT (1)	5273789	NA	5273788	COMMENT (2)	N/A	5273789	N/A
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	105	109	5273789	90	5273788	103		5273789	
n-Dotriacontane - Extractable	%	111 (3)	111 (3)	5273789	100	5273788	105 (3)		5273789	
Isobutylbenzene - Volatile	%	108 (4)	106 (4)	5274278	112 (4)	5278476	97 (4)		5274278	

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) Lube oil fraction.

(2) Unidentified compound(s) in lube oil range.

(3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. 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		FOO106	FOO107				FOO108			
Sampling Date		2017/11/07	2017/11/07				2017/11/07			
COC Number		N/A	N/A				N/A			
	UNITS	CWT-TP12-BS1	CWT-TP13-BS1	RDL	QC Batch	MDL	CWT-TP13-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	<0.025	0.025	5278476	0.010	<0.025	0.025	5276304	0.010
Toluene	mg/kg	<0.025	<0.025	0.025	5278476	0.010	<0.025	0.025	5276304	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	0.025	5278476	0.025	<0.025	0.025	5276304	0.010
Total Xylenes	mg/kg	<0.050	<0.050	0.050	5278476	N/A	<0.050	0.050	5276304	0.010
Aliphatic >C6-C8	mg/kg						2.5	1.0	5276304	0.020
Aliphatic >C8-C10	mg/kg						100	1.0	5276304	0.080
C6 - C10 (less BTEX)	mg/kg	<2.5	98	2.5	5278476	N/A				
>C10-C16 Hydrocarbons	mg/kg	<10	5100	10	5273789	N/A				
>C8-C10 Aromatics (-EX)	mg/kg						3.1	0.50	5276304	0.020
>C16-C21 Hydrocarbons	mg/kg	88	1000	10	5273789	N/A				
Aliphatic >C10-C12	mg/kg						1200	8.0	5275581	1.6
Aliphatic >C12-C16	mg/kg						3400	15	5275581	3.0
>C21-<C32 Hydrocarbons	mg/kg	170	130	15	5273789	N/A				
Aliphatic >C16-C21	mg/kg						650	15	5275581	3.0
Aliphatic >C21-<C32	mg/kg						110	15	5275581	3.0
Modified TPH (Tier1)	mg/kg	260	6300	15	5271231	N/A				
Aromatic >C10-C12	mg/kg						81 (1)	20	5275581	0.80
Reached Baseline at C32	mg/kg	Yes	Yes	N/A	5273789	N/A	Yes	N/A	5275581	N/A
Aromatic >C12-C16	mg/kg						590	15	5275581	3.0
Hydrocarbon Resemblance	mg/kg	COMMENT (2)	COMMENT (3)	N/A	5273789	N/A	COMMENT (3)	N/A	5275581	N/A
Aromatic >C16-C21	mg/kg						400	15	5275581	3.0
Aromatic >C21-<C32	mg/kg						130	15	5275581	3.0
Modified TPH (Tier 2)	mg/kg						6700	20	5271357	3.0
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%						120		5275581	
n-Dotriacontane - Extractable	%						89		5275581	
Isobutylbenzene - Extractable	%	105	110		5273789					
n-Dotriacontane - Extractable	%	129 (4)	113 (5)		5273789					
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated TEH RDL(s) due to detected levels in the method blank. (2) Possible lube oil fraction; interference from possible PAHs. (3) Weathered fuel oil fraction. (4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request. (5) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.										

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FOO106	FOO107				FOO108			
Sampling Date		2017/11/07	2017/11/07				2017/11/07			
COC Number		N/A	N/A				N/A			
	UNITS	CWT-TP12-BS1	CWT-TP13-BS1	RDL	QC Batch	MDL	CWT-TP13-BS2	RDL	QC Batch	MDL
Isobutylbenzene - Volatile	%						76 (1)		5276304	
Isobutylbenzene - Volatile	%	111 (1)	72 (1)		5278476					

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

(1) 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		FOO108				FOO109	FOO110			
Sampling Date		2017/11/07				2017/11/07	2017/11/07			
COC Number		N/A				N/A	N/A			
	UNITS	CWT-TP13-BS2 Lab-Dup	RDL	QC Batch	MDL	CWT-TP14-BS1	CWT-TP15-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg					<0.025	<0.025	0.025	5278476	N/A
Toluene	mg/kg					<0.025	<0.025	0.025	5278476	N/A
Ethylbenzene	mg/kg					<0.025	<0.025	0.025	5278476	0.025
Total Xylenes	mg/kg					<0.050	<0.050	0.050	5278476	N/A
C6 - C10 (less BTEX)	mg/kg					<2.5	<2.5	2.5	5278476	N/A
>C10-C16 Hydrocarbons	mg/kg					21	110	10	5273789	N/A
>C16-C21 Hydrocarbons	mg/kg					49	160	10	5273789	N/A
Aliphatic >C10-C12	mg/kg	1200	8.0	5275581	1.6					
Aliphatic >C12-C16	mg/kg	3500	15	5275581	3.0					
>C21-<C32 Hydrocarbons	mg/kg					130	140	15	5273789	N/A
Aliphatic >C16-C21	mg/kg	610	15	5275581	3.0					
Aliphatic >C21-<C32	mg/kg	120	15	5275581	3.0					
Modified TPH (Tier1)	mg/kg					200	410	15	5271231	N/A
Aromatic >C10-C12	mg/kg	62 (1)	20	5275581	0.80					
Reached Baseline at C32	mg/kg					Yes	Yes	N/A	5273789	N/A
Aromatic >C12-C16	mg/kg	510	15	5275581	3.0					
Hydrocarbon Resemblance	mg/kg					COMMENT (2)	COMMENT (2)	N/A	5273789	N/A
Aromatic >C16-C21	mg/kg	350	15	5275581	3.0					
Aromatic >C21-<C32	mg/kg	120	15	5275581	3.0					
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	112		5275581						
n-Dotriacontane - Extractable	%	92		5275581						
Isobutylbenzene - Extractable	%					102	104		5273789	
n-Dotriacontane - Extractable	%					110 (3)	122 (4)		5273789	
Isobutylbenzene - Volatile	%					100 (5)	97 (5)		5278476	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) Elevated TEH RDL(s) due to detected levels in the method blank. (2) One product in fuel / lube range. Lube oil fraction. (3) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request. (4) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. TEH Analysis: Silica gel clean-up performed prior to analysis as per client request. (5) 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		FOO111	FOO113	FOO115		FOO116			
Sampling Date		2017/11/07	2017/11/07	2017/11/07		2017/11/07			
COC Number		N/A	N/A	N/A		N/A			
	UNITS	CWT-TP15-BS2	CWT-TP16-BS2	CWT-TP17-BS2	QC Batch	CWT-TP18-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	<0.025	5278476	<0.025	0.025	5278476	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	5278476	<0.025	0.025	5278476	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	5278476	<0.025	0.025	5278476	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	5278476	<0.050	0.050	5278476	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	5278476	<2.5	2.5	5278476	N/A
>C10-C16 Hydrocarbons	mg/kg	170	17	<10	5273788	<10	10	5273789	N/A
>C16-C21 Hydrocarbons	mg/kg	200	23	13	5273788	<10	10	5273789	N/A
>C21-<C32 Hydrocarbons	mg/kg	240	87	66	5273788	<15	15	5273789	N/A
Modified TPH (Tier1)	mg/kg	610	130	79	5271231	<15	15	5271231	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	Yes	5273788	NA	N/A	5273789	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	COMMENT (2)	5273788	NA	N/A	5273789	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	92	93	92	5273788	105		5273789	
n-Dotriacontane - Extractable	%	92 (3)	90	91	5273788	127 (4)		5273789	
Isobutylbenzene - Volatile	%	93 (5)	107 (5)	121	5278476	105 (5)		5278476	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel / lube range. Lube oil fraction. (2) Possible lube oil fraction. Unidentified compound(s) in lube oil range. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request. (5) 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		FOO118		FOO119	FOO120	FOO121			
Sampling Date		2017/11/07		2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A		N/A	N/A	N/A			
	UNITS	CWT-TP19-BS2	QC Batch	CWT-TP20-BS1	CWT-TP21-BS1	CWT-TP22-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5278476	<0.025	<0.025	<0.025	0.025	5278476	N/A
Toluene	mg/kg	<0.025	5278476	<0.025	<0.025	<0.025	0.025	5278476	N/A
Ethylbenzene	mg/kg	<0.025	5278476	<0.025	<0.025	<0.025	0.025	5278476	0.025
Total Xylenes	mg/kg	<0.050	5278476	<0.050	<0.050	<0.050	0.050	5278476	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5278476	<2.5	<2.5	<2.5	2.5	5278476	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5273788	<10	<10	<10	10	5273789	N/A
>C16-C21 Hydrocarbons	mg/kg	14	5273788	<10	<10	<10	10	5273789	N/A
>C21-<C32 Hydrocarbons	mg/kg	71	5273788	<15	<15	<15	15	5273789	N/A
Modified TPH (Tier1)	mg/kg	85	5271231	<15	<15	<15	15	5271231	N/A
Reached Baseline at C32	mg/kg	Yes	5273788	NA	NA	NA	N/A	5273789	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5273788	NA	NA	NA	N/A	5273789	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	91	5273788	107	102	109		5273789	
n-Dotriacontane - Extractable	%	91	5273788	127 (2)	119 (2)	124 (2)		5273789	
Isobutylbenzene - Volatile	%	104	5278476	105	115	109 (3)		5278476	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Possible lube oil fraction. 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		FOO122	FOO123		FOO125			
Sampling Date		2017/11/07	2017/11/07		2017/11/07			
COC Number		N/A	N/A		N/A			
	UNITS	CWT-TP23-BS1	CWT-TP24-BS1	QC Batch	CWT-TP25-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	5276268	<0.025	0.025	5276268	N/A
Toluene	mg/kg	<0.025	<0.025	5276268	<0.025	0.025	5276268	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	5276268	<0.025	0.025	5276268	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5276268	<0.050	0.050	5276268	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5276268	<2.5	2.5	5276268	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5273789	14	10	5273788	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	21	5273789	51	10	5273788	N/A
>C21-<C32 Hydrocarbons	mg/kg	52	85	5273789	380	15	5273788	N/A
Modified TPH (Tier1)	mg/kg	52	110	5271231	440	15	5271231	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	5273789	No	N/A	5273788	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	5273789	COMMENT (1)	N/A	5273788	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	97	100	5273789	93		5273788	
n-Dotriacontane - Extractable	%	108 (2)	112 (2)	5273789	103		5273788	
Isobutylbenzene - Volatile	%	104	114	5276268	104		5276268	
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.								

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FOO127		FOO129				FOO129			
Sampling Date		2017/11/07		2017/11/07				2017/11/07			
COC Number		N/A		N/A				N/A			
	UNITS	CWT-TP26-BS2	QC Batch	CWT-TP27-BS2	RDL	QC Batch	MDL	CWT-TP27-BS2 Lab-Dup	RDL	QC Batch	MDL

Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5278476	<0.025	0.025	5276268	N/A	<0.025	0.025	5276268	N/A
Toluene	mg/kg	<0.025	5278476	<0.025	0.025	5276268	N/A	<0.025	0.025	5276268	N/A
Ethylbenzene	mg/kg	<0.025	5278476	<0.025	0.025	5276268	0.025	<0.025	0.025	5276268	0.025
Total Xylenes	mg/kg	<0.050	5278476	<0.050	0.050	5276268	N/A	<0.050	0.050	5276268	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5278476	<2.5	2.5	5276268	N/A	<2.5	2.5	5276268	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5273788	<10	10	5273788	N/A	<10	10	5273788	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5273788	18	10	5273788	N/A	18	10	5273788	N/A
>C21-<C32 Hydrocarbons	mg/kg	22	5273788	78	15	5273788	N/A	83	15	5273788	N/A
Modified TPH (Tier1)	mg/kg	22	5271231	96	15	5271231	N/A				
Reached Baseline at C32	mg/kg	Yes	5273788	Yes	N/A	5273788	N/A				
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5273788	COMMENT (2)	N/A	5273788	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	89	5273788	95		5273788		93		5273788	
n-Dotriacontane - Extractable	%	101	5273788	91		5273788		88		5273788	
Isobutylbenzene - Volatile	%	111 (3)	5278476	108		5276268		106		5276268	

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) Possible lube oil fraction. Unidentified compound(s) in lube oil range.
 (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		FOO131	FOO133	FOO135	FOO137			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP28-BS2	CWT-TP29-BS2	CWT-TP30-BS2	CWT-TP31-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons								
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5278476	N/A
Toluene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5278476	N/A
Ethylbenzene	mg/kg	<0.025	<0.025	<0.025	<0.025	0.025	5278476	0.025
Total Xylenes	mg/kg	<0.050	<0.050	<0.050	<0.050	0.050	5278476	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	<2.5	<2.5	2.5	5278476	N/A
>C10-C16 Hydrocarbons	mg/kg	28	14	33	<10	10	5273788	N/A
>C16-C21 Hydrocarbons	mg/kg	38	33	100	<10	10	5273788	N/A
>C21-<C32 Hydrocarbons	mg/kg	110	63	420	<15	15	5273788	N/A
Modified TPH (Tier1)	mg/kg	180	110	560	<15	15	5271231	N/A
Reached Baseline at C32	mg/kg	Yes	Yes	No	NA	N/A	5273788	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	COMMENT (1)	COMMENT (2)	NA	N/A	5273788	N/A
Surrogate Recovery (%)								
Isobutylbenzene - Extractable	%	92	94	93	89		5273788	
n-Dotriacontane - Extractable	%	87	90	98	101		5273788	
Isobutylbenzene - Volatile	%	102	110 (3)	97	103		5278476	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) One product in fuel / lube range. Lube oil fraction. (2) One product in fuel / lube range. Unidentified compound(s) in fuel / lube range. Lube oil fraction. (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		FOO138		FOO139		FOO140			
Sampling Date		2017/11/07		2017/11/07		2017/11/07			
COC Number		N/A		N/A		N/A			
	UNITS	CWT-TP32-BS1	QC Batch	CWT-TP32-BS2	QC Batch	CWT-TP33-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5276268	<0.025	5276268	<0.025	0.025	5276268	N/A
Toluene	mg/kg	<0.025	5276268	<0.025	5276268	<0.025	0.025	5276268	N/A
Ethylbenzene	mg/kg	<0.025	5276268	<0.025	5276268	<0.025	0.025	5276268	0.025
Total Xylenes	mg/kg	<0.050	5276268	<0.050	5276268	<0.050	0.050	5276268	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5276268	<2.5	5276268	<2.5	2.5	5276268	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5273789	<10	5273788	<10	10	5273789	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5273789	<10	5273788	<10	10	5273789	N/A
>C21-<C32 Hydrocarbons	mg/kg	20	5273789	31	5273788	100	15	5273789	N/A
Modified TPH (Tier1)	mg/kg	20	5271231	31	5271231	100	15	5271231	N/A
Reached Baseline at C32	mg/kg	Yes	5273789	Yes	5273788	Yes	N/A	5273789	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5273789	COMMENT (2)	5273788	COMMENT (1)	N/A	5273789	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	106	5273789	93	5273788	105		5273789	
n-Dotriacontane - Extractable	%	121 (3)	5273789	96	5273788	114 (3)		5273789	
Isobutylbenzene - Volatile	%	111 (4)	5276268	107 (4)	5276268	107 (4)		5276268	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction. (2) Possible 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		FOO141		FOO142		FOO144			
Sampling Date		2017/11/07		2017/11/07		2017/11/07			
COC Number		N/A		N/A		N/A			
	UNITS	CWT-TP33-BS2	QC Batch	CWT-TP34-BS1	QC Batch	CWT-TP35-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5276268	<0.025	5276268	<0.025	0.025	5276268	0.010
Toluene	mg/kg	<0.025	5276268	<0.025	5276268	<0.025	0.025	5276268	0.010
Ethylbenzene	mg/kg	<0.025	5276268	<0.025	5276268	0.14	0.025	5276268	0.025
Total Xylenes	mg/kg	<0.050	5276268	<0.050	5276268	1.5	0.050	5276268	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5276268	<2.5	5276268	210	2.5	5276268	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5273788	<10	5273789	490	10	5273788	N/A
>C16-C21 Hydrocarbons	mg/kg	20	5273788	<10	5273789	53	10	5273788	N/A
>C21-<C32 Hydrocarbons	mg/kg	120	5273788	<15	5273789	240	15	5273788	N/A
Modified TPH (Tier1)	mg/kg	140	5271231	<15	5271231	990	15	5271231	N/A
Reached Baseline at C32	mg/kg	Yes	5273788	NA	5273789	Yes	N/A	5273788	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5273788	NA	5273789	COMMENT (2)	N/A	5273788	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	92	5273788	104	5273789	83		5273788	
n-Dotriacontane - Extractable	%	94 (3)	5273788	129 (4)	5273789	89		5273788	
Isobutylbenzene - Volatile	%	104 (5)	5276268	108 (5)	5276268	103		5276268	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Lube oil fraction. (2) Fuel oil fraction. Lube oil fraction. Unidentified compound(s) in lube oil range. (3) TEH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility. (4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request. (5) 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		FOO146				FOO148	FOO150			
Sampling Date		2017/11/07				2017/11/07	2017/11/07			
COC Number		N/A				N/A	N/A			
	UNITS	CWT-TP36-BS2	RDL	QC Batch	MDL	CWT-TP37-BS2	CWT-TP38-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons										
Benzene	mg/kg	<0.025	0.025	5276304	0.010	<0.025	<0.025	0.025	5276268	0.010
Toluene	mg/kg	<0.025	0.025	5276304	0.010	<0.025	<0.025	0.025	5276268	0.010
Ethylbenzene	mg/kg	<0.025	0.025	5276304	0.010	<0.025	<0.025	0.025	5276268	0.025
Total Xylenes	mg/kg	<0.050	0.050	5276304	0.010	<0.050	<0.050	0.050	5276268	N/A
Aliphatic >C6-C8	mg/kg	<1.0	1.0	5276304	0.020					
Aliphatic >C8-C10	mg/kg	24	1.0	5276304	0.080					
C6 - C10 (less BTEX)	mg/kg					<2.5	<2.5	2.5	5276268	N/A
>C10-C16 Hydrocarbons	mg/kg					<10	15	10	5273788	N/A
>C8-C10 Aromatics (-EX)	mg/kg	<0.50	0.50	5276304	0.020					
>C16-C21 Hydrocarbons	mg/kg					<10	<10	10	5273788	N/A
Aliphatic >C10-C12	mg/kg	130	8.0	5275581	1.6					
Aliphatic >C12-C16	mg/kg	43	15	5275581	3.0					
>C21-<C32 Hydrocarbons	mg/kg					19	28	15	5273788	N/A
Aliphatic >C16-C21	mg/kg	<15	15	5275581	3.0					
Aliphatic >C21-<C32	mg/kg	<15	15	5275581	3.0					
Modified TPH (Tier1)	mg/kg					19	43	15	5271356	N/A
Aromatic >C10-C12	mg/kg	38 (1)	20	5275581	0.80					
Reached Baseline at C32	mg/kg	Yes	N/A	5275581	N/A	Yes	Yes	N/A	5273788	N/A
Aromatic >C12-C16	mg/kg	19	15	5275581	3.0					
Hydrocarbon Resemblance	mg/kg	COMMENT (2)	N/A	5275581	N/A	COMMENT (3)	COMMENT (4)	N/A	5273788	N/A
Aromatic >C16-C21	mg/kg	<15	15	5275581	3.0					
Aromatic >C21-<C32	mg/kg	<15	15	5275581	3.0					
Modified TPH (Tier 2)	mg/kg	260	20	5271357	3.0					
Surrogate Recovery (%)										
Isobutylbenzene - Extractable	%	105		5275581						
n-Dotriacontane - Extractable	%	93		5275581						
Isobutylbenzene - Extractable	%					91	92		5273788	
n-Dotriacontane - Extractable	%					98	97		5273788	
Isobutylbenzene - Volatile	%	104 (5)		5276304						
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Elevated TEH RDL(s) due to detected levels in the method blank. (2) One product in the gas/fuel oil range. (3) Possible lube oil fraction. (4) One product in fuel oil range. Possible lube oil fraction. (5) 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		FOO146				FOO148	FOO150			
Sampling Date		2017/11/07				2017/11/07	2017/11/07			
COC Number		N/A				N/A	N/A			
	UNITS	CWT-TP36-BS2	RDL	QC Batch	MDL	CWT-TP37-BS2	CWT-TP38-BS2	RDL	QC Batch	MDL
Isobutylbenzene - Volatile	%					108	115		5276268	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch										

Maxxam ID		FOO152		FOO154				FOO154			
Sampling Date		2017/11/07		2017/11/07				2017/11/07			
COC Number		N/A		N/A				N/A			
	UNITS	CWT-TP39-BS2	QC Batch	CWT-TP40-BS2	RDL	QC Batch	MDL	CWT-TP40-BS2 Lab-Dup	RDL	QC Batch	MDL

Petroleum Hydrocarbons											
Benzene	mg/kg	<0.025	5276268	<0.025	0.025	5278476	0.010	<0.025	0.025	5278476	0.010
Toluene	mg/kg	<0.025	5276268	<0.025	0.025	5278476	0.010	<0.025	0.025	5278476	0.010
Ethylbenzene	mg/kg	<0.025	5276268	<0.025	0.025	5278476	0.025	<0.025	0.025	5278476	0.025
Total Xylenes	mg/kg	<0.050	5276268	<0.050	0.050	5278476	N/A	<0.050	0.050	5278476	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	5276268	<2.5	2.5	5278476	N/A	<2.5	2.5	5278476	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	5273788	<10	10	5273788	N/A				
>C16-C21 Hydrocarbons	mg/kg	<10	5273788	<10	10	5273788	N/A				
>C21-<C32 Hydrocarbons	mg/kg	<15	5273788	<15	15	5273788	N/A				
Modified TPH (Tier1)	mg/kg	<15	5271356	<15	15	5271356	N/A				
Reached Baseline at C32	mg/kg	NA	5273788	NA	N/A	5273788	N/A				
Hydrocarbon Resemblance	mg/kg	NA	5273788	NA	N/A	5273788	N/A				
Surrogate Recovery (%)											
Isobutylbenzene - Extractable	%	93	5273788	93		5273788					
n-Dotriacontane - Extractable	%	101	5273788	101		5273788					
Isobutylbenzene - Volatile	%	107 (1)	5276268	104		5278476		102		5278476	

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable
 (1) 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		FOO156		FOO158		FOO159			
Sampling Date		2017/11/07		2017/11/07		2017/11/07			
COC Number		N/A		N/A		N/A			
	UNITS	CWT-TP41-BS2	QC Batch	CWT-TP42-BS2	QC Batch	CWT-TP43-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	5278476	<0.025	5278530	<0.025	0.025	5278530	0.010
Toluene	mg/kg	<0.025	5278476	<0.025	5278530	<0.025	0.025	5278530	0.010
Ethylbenzene	mg/kg	<0.025	5278476	<0.025	5278530	<0.025	0.025	5278530	0.025
Total Xylenes	mg/kg	<0.050	5278476	0.17	5278530	<0.050	0.050	5278530	N/A
C6 - C10 (less BTEX)	mg/kg	70	5278476	260	5278530	<2.5	2.5	5278530	N/A
>C10-C16 Hydrocarbons	mg/kg	830	5273788	27	5274088	<10	10	5273789	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	5273788	<10	5274088	22	10	5273789	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	5273788	<15	5274088	95	15	5273789	N/A
Modified TPH (Tier1)	mg/kg	900	5271356	280	5271356	120	15	5271356	N/A
Reached Baseline at C32	mg/kg	Yes	5273788	Yes	5274088	Yes	N/A	5273789	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	5273788	COMMENT (2)	5274088	COMMENT (3)	N/A	5273789	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	84	5273788	106	5274088	102		5273789	
n-Dotriacontane - Extractable	%	101	5273788	100	5274088	120 (4)		5273789	
Isobutylbenzene - Volatile	%	105	5278476	73	5278530	98		5278530	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Weathered fuel oil fraction. (2) One product in the gas/fuel oil range. (3) One product in fuel / lube range. Lube oil fraction. (4) TEH Analysis: Silica gel clean-up performed prior to analysis as per client request.									

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		FOO165	FOO167		FOO168	FOO171			
Sampling Date		2017/11/07	2017/11/07		2017/11/07	2017/11/07			
COC Number		N/A	N/A		N/A	N/A			
	UNITS	CWT-TP100-BS1	CWT-TP102-BS1	QC Batch	CWT-TP103-BS2	CWT-TP106-BS2	RDL	QC Batch	MDL
Petroleum Hydrocarbons									
Benzene	mg/kg	<0.025	<0.025	5278530	<0.025	<0.025	0.025	5278530	0.010
Toluene	mg/kg	<0.025	<0.025	5278530	<0.025	<0.025	0.025	5278530	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	5278530	<0.025	0.047	0.025	5278530	0.025
Total Xylenes	mg/kg	<0.050	<0.050	5278530	<0.050	0.40	0.050	5278530	N/A
C6 - C10 (less BTEX)	mg/kg	<2.5	<2.5	5278530	<2.5	120	2.5	5278530	N/A
>C10-C16 Hydrocarbons	mg/kg	<10	<10	5273789	<10	330	10	5274088	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	5273789	<10	21	10	5274088	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	5273789	30	48	15	5274088	N/A
Modified TPH (Tier1)	mg/kg	<15	<15	5271356	30	520	15	5271356	N/A
Reached Baseline at C32	mg/kg	NA	NA	5273789	Yes	Yes	N/A	5274088	N/A
Hydrocarbon Resemblance	mg/kg	NA	NA	5273789	COMMENT (1)	COMMENT (2)	N/A	5274088	N/A
Surrogate Recovery (%)									
Isobutylbenzene - Extractable	%	103	106	5273789	103	116		5274088	
n-Dotriacontane - Extractable	%	118 (3)	129 (3)	5273789	111	107		5274088	
Isobutylbenzene - Volatile	%	147 (4)	100	5278530	100	93 (5)		5278530	
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. Possible 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. VPH surrogate not within acceptance limits. Analysis was repeated with similar results. (5) 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		FOO172	FOO174			
Sampling Date		2017/11/07	2017/11/07			
COC Number		N/A	N/A			
	UNITS	CWT-TP109-BS2	CWT-TP111-BS1	RDL	QC Batch	MDL
Petroleum Hydrocarbons						
Benzene	mg/kg	<0.025	<0.025	0.025	5278530	0.010
Toluene	mg/kg	<0.025	<0.025	0.025	5278530	0.010
Ethylbenzene	mg/kg	<0.025	<0.025	0.025	5278530	0.025
Total Xylenes	mg/kg	<0.050	<0.050	0.050	5278530	N/A
C6 - C10 (less BTEX)	mg/kg	25	<2.5	2.5	5278530	N/A
>C10-C16 Hydrocarbons	mg/kg	68	<10	10	5274088	N/A
>C16-C21 Hydrocarbons	mg/kg	<10	<10	10	5274088	N/A
>C21-<C32 Hydrocarbons	mg/kg	<15	<15	15	5274088	N/A
Modified TPH (Tier1)	mg/kg	93	<15	15	5271356	N/A
Reached Baseline at C32	mg/kg	Yes	NA	N/A	5274088	N/A
Hydrocarbon Resemblance	mg/kg	COMMENT (1)	NA	N/A	5274088	N/A
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	106	105		5274088	
n-Dotriacontane - Extractable	%	122	116		5274088	
Isobutylbenzene - Volatile	%	92 (2)	93 (2)		5278530	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) Weathered fuel oil fraction. (2) VPH samples were extracted using a flat-bed shaker instead of the accelerated mechanical shaker due to matrix incompatibility.						

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FOO100				FOO100			
Sampling Date		2017/11/07				2017/11/07			
COC Number		N/A				N/A			
	UNITS	CWT-TP6-BS1	RDL	QC Batch	MDL	CWT-TP6-BS1 Lab-Dup	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Aroclor 1221	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Aroclor 1232	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Aroclor 1248	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Aroclor 1242	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Aroclor 1254	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Aroclor 1260	ug/g	<0.050	0.050	5275604	N/A	<0.050	0.050	5275604	N/A
Calculated Total PCB	ug/g	<0.050	0.050	5270763	N/A				
Surrogate Recovery (%)									
Decachlorobiphenyl	%	98		5275604		98		5275604	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable									

Maxxam ID		FOO102	FOO103	FOO106	FOO108	FOO110			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP9-BS1	CWT-TP10-BS1	CWT-TP12-BS1	CWT-TP13-BS2	CWT-TP15-BS1	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	0.12	<0.050	0.050	5275604	N/A
Aroclor 1260	ug/g	0.20	<0.050	<0.050	<0.050	0.14	0.050	5275604	N/A
Calculated Total PCB	ug/g	0.20	<0.050	<0.050	0.12	0.14	0.050	5270763	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	99	95	101	95	100		5275604	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FOO112	FOO114	FOO116	FOO119	FOO120			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP16-BS1	CWT-TP17-BS1	CWT-TP18-BS1	CWT-TP20-BS1	CWT-TP21-BS1	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	0.25	0.14	0.050	5275604	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	0.25	0.14	0.050	5270763	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	101	96	98	99	102		5275604	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

Maxxam ID		FOO122	FOO124	FOO126		FOO128			
Sampling Date		2017/11/07	2017/11/07	2017/11/07		2017/11/07			
COC Number		N/A	N/A	N/A		N/A			
	UNITS	CWT-TP23-BS1	CWT-TP25-BS1	CWT-TP26-BS1	QC Batch	CWT-TP27-BS1	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	5275604	<0.050	0.050	5276613	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	5275604	<0.050	0.050	5276613	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	5275604	<0.050	0.050	5276613	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	5275604	<0.050	0.050	5276613	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	5275604	<0.050	0.050	5276613	N/A
Aroclor 1254	ug/g	<0.050	0.69	<0.050	5275604	<0.050	0.050	5276613	N/A
Aroclor 1260	ug/g	0.078	0.57	<0.050	5275604	<0.050	0.050	5276613	N/A
Calculated Total PCB	ug/g	0.078	1.3	<0.050	5270763	<0.050	0.050	5275854	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	101	90	92	5275604	95		5276613	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FOO130		FOO132			FOO134			
Sampling Date		2017/11/07		2017/11/07			2017/11/07			
COC Number		N/A		N/A			N/A			
	UNITS	CWT-TP28-BS1	QC Batch	CWT-TP29-BS1	RDL	QC Batch	CWT-TP30-BS1	RDL	QC Batch	MDL

PCBs										
Aroclor 1016	ug/g	<0.050	5275604	<0.050	0.050	5276613	<0.10	0.10	5275604	N/A
Aroclor 1221	ug/g	<0.050	5275604	<0.050	0.050	5276613	<0.10	0.10	5275604	N/A
Aroclor 1232	ug/g	<0.050	5275604	<0.050	0.050	5276613	<0.10	0.10	5275604	N/A
Aroclor 1248	ug/g	<0.050	5275604	<0.050	0.050	5276613	<0.10	0.10	5275604	N/A
Aroclor 1242	ug/g	<0.050	5275604	<0.050	0.050	5276613	<0.10	0.10	5275604	N/A
Aroclor 1254	ug/g	<0.050	5275604	<0.050	0.050	5276613	<0.10	0.10	5275604	N/A
Aroclor 1260	ug/g	<0.050	5275604	0.072	0.050	5276613	<0.10	0.10	5275604	N/A
Calculated Total PCB	ug/g	<0.050	5270763	0.072	0.050	5275854	<0.10	0.10	5270763	N/A

Surrogate Recovery (%)										
Decachlorobiphenyl	%	101	5275604	92		5276613	81 (1)		5275604	

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		FOO136	FOO143	FOO147	FOO149			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A			
	UNITS	CWT-TP31-BS1	CWT-TP35-BS1	CWT-TP37-BS1	CWT-TP38-BS1	RDL	QC Batch	MDL

PCBs								
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5275604	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.050	5270763	N/A

Surrogate Recovery (%)								
Decachlorobiphenyl	%	98	103 (1)	102	103 (1)		5275604	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
N/A = Not Applicable
(1) PCB: Unidentified (possibly halogenated) compounds detected.

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FOO151				FOO151			
Sampling Date		2017/11/07				2017/11/07			
COC Number		N/A				N/A			
	UNITS	CWT-TP39-BS1	RDL	QC Batch	MDL	CWT-TP39-BS1 Lab-Dup	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Aroclor 1221	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Aroclor 1232	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Aroclor 1248	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Aroclor 1242	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Aroclor 1254	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Aroclor 1260	ug/g	<0.050	0.050	5276613	N/A	<0.050	0.050	5276613	N/A
Calculated Total PCB	ug/g	<0.050	0.050	5270763	N/A				
Surrogate Recovery (%)									
Decachlorobiphenyl	%	91 (1)		5276613		91 (1)		5276613	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) PCB: Unidentified (possibly halogenated) compounds detected.									

Maxxam ID		FOO155	FOO157	FOO165	FOO166	FOO167			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-TP41-BS1	CWT-TP42-BS1	CWT-TP100-BS1	CWT-TP101-BS1	CWT-TP102-BS1	RDL	QC Batch	MDL
PCBs									
Aroclor 1016	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5276613	N/A
Aroclor 1221	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5276613	N/A
Aroclor 1232	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5276613	N/A
Aroclor 1248	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5276613	N/A
Aroclor 1242	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5276613	N/A
Aroclor 1254	ug/g	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	5276613	N/A
Aroclor 1260	ug/g	<0.050	<0.050	<0.050	<0.050	0.20	0.050	5276613	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	<0.050	<0.050	0.20	0.050	5270763	N/A
Surrogate Recovery (%)									
Decachlorobiphenyl	%	95	91	81	91	87		5276613	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		FOO170		FOO173			
Sampling Date		2017/11/07		2017/11/07			
COC Number		N/A		N/A			
	UNITS	CWT-TP105-BS1	QC Batch	CWT-TP110-BS2	RDL	QC Batch	MDL
PCBs							
Aroclor 1016	ug/g	<0.050	5276613	<0.050	0.050	5276613	N/A
Aroclor 1221	ug/g	<0.050	5276613	<0.050	0.050	5276613	N/A
Aroclor 1232	ug/g	<0.050	5276613	<0.050	0.050	5276613	N/A
Aroclor 1248	ug/g	<0.050	5276613	<0.050	0.050	5276613	N/A
Aroclor 1242	ug/g	<0.050	5276613	<0.050	0.050	5276613	N/A
Aroclor 1254	ug/g	<0.050	5276613	0.13	0.050	5276613	N/A
Aroclor 1260	ug/g	<0.050	5276613	<0.050	0.050	5276613	N/A
Calculated Total PCB	ug/g	<0.050	5270763	0.13	0.050	5271350	N/A
Surrogate Recovery (%)							
Decachlorobiphenyl	%	91	5276613	83		5276613	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable							

ELEMENTS BY ATOMIC SPECTROSCOPY (TISSUE)

Maxxam ID		FOO160	FOO161	FOO161	FOO162	FOO163			
Sampling Date		2017/11/07	2017/11/07	2017/11/07	2017/11/07	2017/11/07			
COC Number		N/A	N/A	N/A	N/A	N/A			
	UNITS	CWT-BERRY 4	CWT-BERRY 6	CWT-BERRY 6 Lab-Dup	CWT-BERRY 7	CWT-BERRY 8	RDL	QC Batch	MDL

Metals									
Acid Extractable Aluminum (Al)	mg/kg	34	61	42	36	34	10	5282462	N/A
Acid Extractable Antimony (Sb)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Arsenic (As)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Barium (Ba)	mg/kg	33	170	130	32	20	5.0	5282462	N/A
Acid Extractable Beryllium (Be)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Boron (B)	mg/kg	7.0	7.7	7.2	7.7	8.4	5.0	5282462	N/A
Acid Extractable Cadmium (Cd)	mg/kg	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	5282462	N/A
Acid Extractable Chromium (Cr)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Cobalt (Co)	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0	1.0	5282462	N/A
Acid Extractable Copper (Cu)	mg/kg	2.9	3.6	3.1	2.8	2.8	2.0	5282462	N/A
Acid Extractable Iron (Fe)	mg/kg	<50	68	54	<50	<50	50	5282462	N/A
Acid Extractable Lead (Pb)	mg/kg	1.2	0.70	<0.50	0.53	0.92	0.50	5282462	N/A
Acid Extractable Lithium (Li)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Manganese (Mn)	mg/kg	160	150	140	140	130	2.0	5282462	N/A
Acid Extractable Molybdenum (Mo)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Nickel (Ni)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Selenium (Se)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Silver (Ag)	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	5282462	N/A
Acid Extractable Strontium (Sr)	mg/kg	<5.0	5.5	<5.0	<5.0	<5.0	5.0	5282462	N/A
Acid Extractable Thallium (Tl)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5282462	N/A
Acid Extractable Uranium (U)	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	5282462	N/A
Acid Extractable Vanadium (V)	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	5282462	N/A
Acid Extractable Zinc (Zn)	mg/kg	6.6	7.2	6.6	6.7	6.7	5.0	5282462	N/A

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

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		FOO160	FOO161				FOO161			
Sampling Date		2017/11/07	2017/11/07				2017/11/07			
COC Number		N/A	N/A				N/A			
	UNITS	CWT-BERRY 4	CWT-BERRY 6	RDL	QC Batch	MDL	CWT-BERRY 6 Lab-Dup	RDL	QC Batch	MDL
PCBs										
Aroclor 1016	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Aroclor 1221	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Aroclor 1232	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Aroclor 1248	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Aroclor 1242	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Aroclor 1254	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Aroclor 1260	ug/g	<0.050	<0.050	0.050	5274131	N/A	<0.050	0.050	5274131	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	0.050	5271351	N/A				
Surrogate Recovery (%)										
Decachlorobiphenyl	%	28 (1)	26 (1)		5274131		24 (1)		5274131	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable (1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.										

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		FOO162	FOO163			
Sampling Date		2017/11/07	2017/11/07			
COC Number		N/A	N/A			
	UNITS	CWT-BERRY 7	CWT-BERRY 8	RDL	QC Batch	MDL
PCBs						
Aroclor 1016	ug/g	<0.050	<0.050	0.050	5274131	N/A
Aroclor 1221	ug/g	<0.050	<0.050	0.050	5274131	N/A
Aroclor 1232	ug/g	<0.050	<0.050	0.050	5274131	N/A
Aroclor 1248	ug/g	<0.050	<0.050	0.050	5274131	N/A
Aroclor 1242	ug/g	<0.050	<0.050	0.050	5274131	N/A
Aroclor 1254	ug/g	<0.050	<0.050	0.050	5274131	N/A
Aroclor 1260	ug/g	<0.050	<0.050	0.050	5274131	N/A
Calculated Total PCB	ug/g	<0.050	<0.050	0.050	5271351	N/A
Surrogate Recovery (%)						
Decachlorobiphenyl	%	22 (1)	25 (1)		5274131	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.						

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		FOO164			
Sampling Date		2017/11/07			
COC Number		N/A			
	UNITS	CWT-SW2	RDL	QC Batch	MDL
Metals					
Total Aluminum (Al)	ug/L	130	5.0	5275701	N/A
Total Antimony (Sb)	ug/L	<1.0	1.0	5275701	N/A
Total Arsenic (As)	ug/L	<1.0	1.0	5275701	N/A
Total Barium (Ba)	ug/L	2.4	1.0	5275701	N/A
Total Beryllium (Be)	ug/L	<1.0	1.0	5275701	N/A
Total Bismuth (Bi)	ug/L	<2.0	2.0	5275701	N/A
Total Boron (B)	ug/L	<50	50	5275701	N/A
Total Cadmium (Cd)	ug/L	<0.010	0.010	5275701	N/A
Total Calcium (Ca)	ug/L	900	100	5275701	N/A
Total Chromium (Cr)	ug/L	<1.0	1.0	5275701	N/A
Total Cobalt (Co)	ug/L	<0.40	0.40	5275701	N/A
Total Copper (Cu)	ug/L	<2.0	2.0	5275701	N/A
Total Iron (Fe)	ug/L	120	50	5275701	N/A
Total Lead (Pb)	ug/L	<0.50	0.50	5275701	N/A
Total Magnesium (Mg)	ug/L	460	100	5275701	N/A
Total Manganese (Mn)	ug/L	2.2	2.0	5275701	N/A
Total Molybdenum (Mo)	ug/L	<2.0	2.0	5275701	N/A
Total Nickel (Ni)	ug/L	<2.0	2.0	5275701	N/A
Total Phosphorus (P)	ug/L	<100	100	5275701	N/A
Total Potassium (K)	ug/L	230	100	5275701	N/A
Total Selenium (Se)	ug/L	<1.0	1.0	5275701	N/A
Total Silver (Ag)	ug/L	<0.10	0.10	5275701	N/A
Total Sodium (Na)	ug/L	3300	100	5275701	N/A
Total Strontium (Sr)	ug/L	5.9	2.0	5275701	N/A
Total Thallium (Tl)	ug/L	<0.10	0.10	5275701	N/A
Total Tin (Sn)	ug/L	6.2	2.0	5275701	N/A
Total Titanium (Ti)	ug/L	2.2	2.0	5275701	N/A
Total Uranium (U)	ug/L	<0.10	0.10	5275701	N/A
Total Vanadium (V)	ug/L	<2.0	2.0	5275701	N/A
Total Zinc (Zn)	ug/L	<5.0	5.0	5275701	N/A
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					

SEMI-VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		FOO164				FOO164			
Sampling Date		2017/11/07				2017/11/07			
COC Number		N/A				N/A			
	UNITS	CWT-SW2	RDL	QC Batch	MDL	CWT-SW2 Lab-Dup	RDL	QC Batch	MDL
Polyaromatic Hydrocarbons									
1-Methylnaphthalene	ug/L	<0.050	0.050	5271759	N/A	<0.073	0.073	5271759	N/A
2-Methylnaphthalene	ug/L	<0.050	0.050	5271759	N/A	<0.073	0.073	5271759	N/A
Acenaphthene	ug/L	0.011	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Acenaphthylene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Anthracene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Benzo(a)anthracene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Benzo(a)pyrene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Benzo(b)fluoranthene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Benzo(b/j)fluoranthene	ug/L	<0.020	0.020	5270502	N/A				
Benzo(g,h,i)perylene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Benzo(j)fluoranthene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Benzo(k)fluoranthene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Chrysene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Dibenz(a,h)anthracene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Fluoranthene	ug/L	0.025	0.010	5271759	N/A	0.038	0.015	5271759	N/A
Fluorene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Indeno(1,2,3-cd)pyrene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Naphthalene	ug/L	<0.20	0.20	5271759	N/A	<0.30	0.30	5271759	N/A
Perylene	ug/L	<0.010	0.010	5271759	N/A	<0.015	0.015	5271759	N/A
Phenanthrene	ug/L	0.024	0.010	5271759	N/A	0.034	0.015	5271759	N/A
Pyrene	ug/L	0.016	0.010	5271759	N/A	0.027	0.015	5271759	N/A
Surrogate Recovery (%)									
D10-Anthracene	%	66		5271759		69		5271759	
D14-Terphenyl	%	71		5271759		77 (1)		5271759	
D8-Acenaphthylene	%	58		5271759		61		5271759	
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 limited sample.									

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		FOO164			
Sampling Date		2017/11/07			
COC Number		N/A			
	UNITS	CWT-SW2	RDL	QC Batch	MDL
PCBs					
Aroclor 1016	ug/L	<0.050	0.050	5271413	N/A
Aroclor 1221	ug/L	<0.050	0.050	5271413	N/A
Aroclor 1232	ug/L	<0.050	0.050	5271413	N/A
Aroclor 1248	ug/L	<0.050	0.050	5271413	N/A
Aroclor 1242	ug/L	<0.050	0.050	5271413	N/A
Aroclor 1254	ug/L	<0.050	0.050	5271413	N/A
Aroclor 1260	ug/L	<0.050	0.050	5271413	N/A
Calculated Total PCB	ug/L	<0.050	0.050	5270764	N/A
Surrogate Recovery (%)					
Decachlorobiphenyl	%	89 (1)		5271413	
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable (1) PCB sample analysed past recommended hold time as per client request.					

TEST SUMMARY

Maxxam ID: FOO100
Sample ID: CWT-TP6-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5274278	N/A	2017/11/21	Shawn Helmkey

Maxxam ID: FOO100 Dup
Sample ID: CWT-TP6-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates

Maxxam ID: FOO101
Sample ID: CWT-TP7-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5274278	N/A	2017/11/21	Shawn Helmkey

Maxxam ID: FOO101 Dup
Sample ID: CWT-TP7-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/24	2017/11/26	Lisa Gates

Maxxam ID: FOO102
Sample ID: CWT-TP9-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

TEST SUMMARY

Maxxam ID: FOO102
Sample ID: CWT-TP9-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5274278	N/A	2017/11/21	Shawn Helmkey

Maxxam ID: FOO103
Sample ID: CWT-TP10-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO104
Sample ID: CWT-TP10-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO105
Sample ID: CWT-TP11-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5276232	N/A	2017/11/23	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5274278	N/A	2017/11/21	Shawn Helmkey

Maxxam ID: FOO106
Sample ID: CWT-TP12-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates

TEST SUMMARY

Maxxam ID: FOO106
Sample ID: CWT-TP12-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO107
Sample ID: CWT-TP13-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO108
Sample ID: CWT-TP13-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (AA PIRI)	GC/FID	5275581	2017/11/21	2017/11/21	Marsha (Skinner) Harnum
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T2) Calc. for Soil	CALC	5271357	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5276304	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO108 Dup
Sample ID: CWT-TP13-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (AA PIRI)	GC/FID	5275581	2017/11/21	2017/11/21	Marsha (Skinner) Harnum

Maxxam ID: FOO109
Sample ID: CWT-TP14-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

TEST SUMMARY

Maxxam ID: FOO110
Sample ID: CWT-TP15-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO111
Sample ID: CWT-TP15-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GC/MS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO112
Sample ID: CWT-TP16-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO113
Sample ID: CWT-TP16-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

TEST SUMMARY

Maxxam ID: FOO114
Sample ID: CWT-TP17-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO115
Sample ID: CWT-TP17-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO116
Sample ID: CWT-TP18-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO117
Sample ID: CWT-TP19-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates

Maxxam ID: FOO118
Sample ID: CWT-TP19-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald

TEST SUMMARY

Maxxam ID: FOO118
Sample ID: CWT-TP19-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO119
Sample ID: CWT-TP20-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273377	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO120
Sample ID: CWT-TP21-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO120 Dup
Sample ID: CWT-TP21-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald

Maxxam ID: FOO121
Sample ID: CWT-TP22-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates

TEST SUMMARY

Maxxam ID: FOO121
Sample ID: CWT-TP22-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO122
Sample ID: CWT-TP23-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/21	Thea Holland

Maxxam ID: FOO123
Sample ID: CWT-TP24-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO124
Sample ID: CWT-TP25-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO125
Sample ID: CWT-TP25-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald

TEST SUMMARY

Maxxam ID: FOO125
Sample ID: CWT-TP25-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO126
Sample ID: CWT-TP26-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO127
Sample ID: CWT-TP26-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5276232	N/A	2017/11/23	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO128
Sample ID: CWT-TP27-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5275609	N/A	2017/11/21	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5275854	N/A	2017/11/23	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5277017	N/A	2017/11/20	Eric Dearman

Maxxam ID: FOO129
Sample ID: CWT-TP27-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald

TEST SUMMARY

Maxxam ID: FOO129
Sample ID: CWT-TP27-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/21	Thea Holland

Maxxam ID: FOO129 Dup
Sample ID: CWT-TP27-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/21	Thea Holland

Maxxam ID: FOO130
Sample ID: CWT-TP28-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO131
Sample ID: CWT-TP28-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5276232	N/A	2017/11/23	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO132
Sample ID: CWT-TP29-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5275609	N/A	2017/11/21	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5275854	N/A	2017/11/23	Automated Statchk
Asbestos (bulk) by PLM (Sub fr Bedford)		5277017	N/A	2017/11/20	Eric Dearman

TEST SUMMARY

Maxxam ID: FOO133
Sample ID: CWT-TP29-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5275551	2017/11/21	2017/11/21	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO134
Sample ID: CWT-TP30-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO135
Sample ID: CWT-TP30-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5276232	N/A	2017/11/23	Amanda Swales
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO136
Sample ID: CWT-TP31-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

TEST SUMMARY

Maxxam ID: FOO137
Sample ID: CWT-TP31-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO138
Sample ID: CWT-TP32-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO139
Sample ID: CWT-TP32-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/20	Marley Gidney
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO140
Sample ID: CWT-TP33-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO141
Sample ID: CWT-TP33-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273406	N/A	2017/11/20	Ceilidh MacDonald
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

TEST SUMMARY

Maxxam ID: FOO142
Sample ID: CWT-TP34-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO142 Dup
Sample ID: CWT-TP34-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour

Maxxam ID: FOO143
Sample ID: CWT-TP35-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO144
Sample ID: CWT-TP35-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271231	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO145
Sample ID: CWT-TP36-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine

Maxxam ID: FOO146
Sample ID: CWT-TP36-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
TEH in Soil (AA PIRI)	GC/FID	5275581	2017/11/21	2017/11/22	Marsha (Skinner) Harnum

TEST SUMMARY

Maxxam ID: FOO146
Sample ID: CWT-TP36-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
ModTPH (T2) Calc. for Soil	CALC	5271357	N/A	2017/11/22	Automated Statchk
VOCs in Soil - Field Preserved	HS/MS	5276232	N/A	2017/11/26	Amanda Swales
VPH in Soil (PIRI2) - Field Preserved	PTGC/MS	5276304	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO147
Sample ID: CWT-TP37-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

Maxxam ID: FOO147 Dup
Sample ID: CWT-TP37-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine

Maxxam ID: FOO148
Sample ID: CWT-TP37-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO149
Sample ID: CWT-TP38-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5275604	2017/11/21	2017/11/22	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/22	Automated Statchk

TEST SUMMARY

Maxxam ID: FOO150
Sample ID: CWT-TP38-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO151
Sample ID: CWT-TP39-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk

Maxxam ID: FOO151 Dup
Sample ID: CWT-TP39-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates

Maxxam ID: FOO152
Sample ID: CWT-TP39-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/22	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5276268	N/A	2017/11/22	Thea Holland

Maxxam ID: FOO153
Sample ID: CWT-TP40-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine

Maxxam ID: FOO154
Sample ID: CWT-TP40-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney

TEST SUMMARY

Maxxam ID: FOO154
Sample ID: CWT-TP40-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO154 Dup
Sample ID: CWT-TP40-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO155
Sample ID: CWT-TP41-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/21	Automated Statchk
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5273741	2017/11/20	2017/11/20	Gina Thompson
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk

Maxxam ID: FOO155 Dup
Sample ID: CWT-TP41-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH Compounds by GCMS (SIM)	GC/MS	5273741	2017/11/20	2017/11/20	Gina Thompson

Maxxam ID: FOO156
Sample ID: CWT-TP41-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273788	2017/11/20	2017/11/21	Marley Gidney
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278476	N/A	2017/11/23	Thea Holland

Maxxam ID: FOO157
Sample ID: CWT-TP42-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine

TEST SUMMARY

Maxxam ID: FOO157
Sample ID: CWT-TP42-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk

Maxxam ID: FOO158
Sample ID: CWT-TP42-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5274088	2017/11/20	2017/11/20	Brittany Matthews
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/23	Shawn Helmkey

Maxxam ID: FOO159
Sample ID: CWT-TP43-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

Maxxam ID: FOO160
Sample ID: CWT-BERRY 4
Matrix: TISSUE

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5282462	2017/11/24	2017/11/24	Mike Leblanc
PCBs in tissue by GC/ECD	GC/ECD	5274131	2017/11/20	2017/11/27	Chloe Bramble
PCB Aroclor sum (tissue)	CALC	5271351	N/A	2017/11/27	Automated Statchk

Maxxam ID: FOO161
Sample ID: CWT-BERRY 6
Matrix: TISSUE

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5282462	2017/11/24	2017/11/24	Mike Leblanc
PCBs in tissue by GC/ECD	GC/ECD	5274131	2017/11/20	2017/11/27	Chloe Bramble
PCB Aroclor sum (tissue)	CALC	5271351	N/A	2017/11/27	Automated Statchk

TEST SUMMARY

Maxxam ID: FOO161 Dup
Sample ID: CWT-BERRY 6
Matrix: TISSUE

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5282462	2017/11/24	2017/11/24	Mike Leblanc
PCBs in tissue by GC/ECD	GC/ECD	5274131	2017/11/20	2017/11/27	Chloe Bramble

Maxxam ID: FOO162
Sample ID: CWT-BERRY 7
Matrix: TISSUE

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5282462	2017/11/24	2017/11/24	Mike Leblanc
PCBs in tissue by GC/ECD	GC/ECD	5274131	2017/11/20	2017/11/27	Chloe Bramble
PCB Aroclor sum (tissue)	CALC	5271351	N/A	2017/11/27	Automated Statchk

Maxxam ID: FOO163
Sample ID: CWT-BERRY 8
Matrix: TISSUE

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals in Terrestrial Biota	FICP/MS	5282462	2017/11/24	2017/11/24	Mike Leblanc
PCBs in tissue by GC/ECD	GC/ECD	5274131	2017/11/20	2017/11/27	Chloe Bramble
PCB Aroclor sum (tissue)	CALC	5271351	N/A	2017/11/27	Automated Statchk

Maxxam ID: FOO164
Sample ID: CWT-SW2
Matrix: Water

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (water)	CALC	5270502	N/A	2017/11/21	Automated Statchk
Metals Water Total MS	CICP/MS	5275701	2017/11/21	2017/11/21	Bryon Angevine
PAH in Water by GC/MS (SIM)	GC/MS	5271759	2017/11/17	2017/11/21	Gina Thompson
PCBs in water by GC/ECD	GC/ECD	5271413	2017/11/17	2017/11/20	Lisa Gates
PCB Aroclor sum (water)	CALC	5270764	N/A	2017/11/20	Automated Statchk

Maxxam ID: FOO164 Dup
Sample ID: CWT-SW2
Matrix: Water

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
PAH in Water by GC/MS (SIM)	GC/MS	5271759	2017/11/17	2017/11/20	Gina Thompson

Maxxam ID: FOO165
Sample ID: CWT-TP100-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews

TEST SUMMARY

Maxxam ID: FOO165
Sample ID: CWT-TP100-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

Maxxam ID: FOO166
Sample ID: CWT-TP101-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/27	Automated Statchk
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5282623	2017/11/21	2017/11/26	Lisa Gates
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk

Maxxam ID: FOO167
Sample ID: CWT-TP102-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5273789	2017/11/20	2017/11/23	Brittany Matthews
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/24	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

Maxxam ID: FOO168
Sample ID: CWT-TP103-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5274088	2017/11/20	2017/11/20	Brittany Matthews
Moisture	BAL	5273521	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

TEST SUMMARY

Maxxam ID: FOO169
Sample ID: CWT-TP104-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Benzo(b/j)fluoranthene Sum (soil)	CALC	5270609	N/A	2017/11/29	Automated Statchk
Moisture	BAL	5273460	N/A	2017/11/20	David Balfour
PAH Compounds by GCMS (SIM)	GC/MS	5285487	2017/11/21	2017/11/28	Robin Smith-Armstrong
VOCs in Soil - Field Preserved	HS/MS	5276232	N/A	2017/11/23	Amanda Swales

Maxxam ID: FOO170
Sample ID: CWT-TP105-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Metals Solids Acid Extr. ICPMS	ICP/MS	5273853	2017/11/20	2017/11/20	Bryon Angevine
Moisture	BAL	5273460	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5270763	N/A	2017/11/23	Automated Statchk

Maxxam ID: FOO171
Sample ID: CWT-TP106-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5274088	2017/11/20	2017/11/20	Brittany Matthews
Moisture	BAL	5273460	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

Maxxam ID: FOO172
Sample ID: CWT-TP109-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5274088	2017/11/20	2017/11/20	Brittany Matthews
Moisture	BAL	5273460	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

Maxxam ID: FOO173
Sample ID: CWT-TP110-BS2
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Moisture	BAL	5273460	N/A	2017/11/20	David Balfour
PCBs in soil by GC/ECD	GC/ECD	5276613	2017/11/21	2017/11/23	Lisa Gates
PCB Aroclor sum (soil)	CALC	5271350	N/A	2017/11/23	Automated Statchk

Maxxam Job #: B7P8843
Report Date: 2017/12/07

Stantec Consulting Ltd
Client Project #: 121414915.300.002
Site Location: FORMER MILITARY SITE, CARTWRIGHT, NL
Sampler Initials: RP

TEST SUMMARY

Maxxam ID: F00174
Sample ID: CWT-TP111-BS1
Matrix: Soil

Collected: 2017/11/07
Shipped:
Received: 2017/11/16

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
TEH in Soil (PIRI)	GC/FID	5274088	2017/11/20	2017/11/20	Brittany Matthews
Moisture	BAL	5273460	N/A	2017/11/20	David Balfour
ModTPH (T1) Calc. for Soil	CALC	5271356	N/A	2017/11/23	Automated Statchk
VPH in Soil (PIRI) - Field Preserved	PTGC/MS	5278530	N/A	2017/11/22	Shawn Helmkey

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	9.2°C
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Water sample CWT-SW2 was received past the recommended 7 day holding time for PAH and PCB analysis.

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

PCBs in tissue by GC/ECD: Due to the nature of the samples, an alternate sample prep procedure was employed. Although accredited procedures were used (PCB-Ti) the accreditation does not extend to the matrix being prepared and analyzed.

Results relate only to the items tested.

QUALITY ASSURANCE REPORT

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5271413	Decachlorobiphenyl	2017/11/20	75 (1)	30 - 130	98	30 - 130	90	%				
5271759	D10-Anthracene	2017/11/20	66	50 - 130	97	50 - 130	98	%				
5271759	D14-Terphenyl	2017/11/20	65	50 - 130	103	50 - 130	94	%				
5271759	D8-Acenaphthylene	2017/11/20	61	50 - 130	86	50 - 130	86	%				
5273741	D10-Anthracene	2017/11/20	89	50 - 130	103	50 - 130	98	%				
5273741	D14-Terphenyl (FS)	2017/11/20	90	50 - 130	95	50 - 130	92	%				
5273741	D8-Acenaphthylene	2017/11/20	97	50 - 130	97	50 - 130	91	%				
5273788	Isobutylbenzene - Extractable	2017/11/20	93	30 - 130	92	30 - 130	87	%				
5273788	n-Dotriacontane - Extractable	2017/11/20	86	30 - 130	95	30 - 130	95	%				
5273789	Isobutylbenzene - Extractable	2017/11/23	103	30 - 130	104	30 - 130	95	%				
5273789	n-Dotriacontane - Extractable	2017/11/23	115	30 - 130	110	30 - 130	103	%				
5274088	Isobutylbenzene - Extractable	2017/11/20	105	30 - 130	104	30 - 130	91	%				
5274088	n-Dotriacontane - Extractable	2017/11/20	103	30 - 130	103	30 - 130	94	%				
5274131	Decachlorobiphenyl	2017/11/27	29 (3)	30 - 130	75	30 - 130	89	%			75	%
5274278	Isobutylbenzene - Volatile	2017/11/20	95	60 - 130	95	60 - 130	102	%				
5275581	Isobutylbenzene - Extractable	2017/11/21			105	30 - 130	116	%				
5275581	n-Dotriacontane - Extractable	2017/11/21			87	30 - 130	107	%				
5275604	Decachlorobiphenyl	2017/11/22	104	30 - 130	95	30 - 130	95	%				
5276232	4-Bromofluorobenzene	2017/11/23	101	60 - 140	100	60 - 140	100	%				
5276232	D10-o-Xylene	2017/11/23	115	60 - 130	104	60 - 130	106	%				
5276232	D4-1,2-Dichloroethane	2017/11/23	101	60 - 140	102	60 - 140	96	%				
5276232	D8-Toluene	2017/11/23	98	60 - 140	97	60 - 140	97	%				
5276268	Isobutylbenzene - Volatile	2017/11/21	102	60 - 130	97	60 - 130	95	%				
5276304	Isobutylbenzene - Volatile	2017/11/21			97	60 - 140	95	%				
5276613	Decachlorobiphenyl	2017/11/23	92	30 - 130	90	30 - 130	92	%				
5278476	Isobutylbenzene - Volatile	2017/11/23	99	60 - 130	98	60 - 130	100	%				
5278530	Isobutylbenzene - Volatile	2017/11/22	94	60 - 130	86	60 - 130	90	%				
5282623	D10-Anthracene	2017/11/26	87	50 - 130	90	50 - 130	90	%				
5282623	D14-Terphenyl (FS)	2017/11/26	91	50 - 130	90	50 - 130	90	%				
5282623	D8-Acenaphthylene	2017/11/26	90	50 - 130	95	50 - 130	92	%				
5285487	D10-Anthracene	2017/11/28	83	50 - 130	105	50 - 130	99	%				

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5285487	D14-Terphenyl (FS)	2017/11/28	89	50 - 130	106	50 - 130	96	%				
5285487	D8-Acenaphthylene	2017/11/28	83	50 - 130	99	50 - 130	93	%				
5271413	Aroclor 1016	2017/11/20					<0.050	ug/L	NC	40		
5271413	Aroclor 1221	2017/11/20					<0.050	ug/L	NC	40		
5271413	Aroclor 1232	2017/11/20					<0.050	ug/L	NC	40		
5271413	Aroclor 1242	2017/11/20					<0.050	ug/L	NC	40		
5271413	Aroclor 1248	2017/11/20					<0.050	ug/L	NC	40		
5271413	Aroclor 1254	2017/11/20	112	30 - 130	103	30 - 130	<0.050	ug/L	NC	40		
5271413	Aroclor 1260	2017/11/20					<0.050	ug/L	NC	40		
5271759	1-Methylnaphthalene	2017/11/20	62	30 - 130	85	30 - 130	<0.050	ug/L	NC	40		
5271759	2-Methylnaphthalene	2017/11/20	66	30 - 130	91	30 - 130	<0.050	ug/L	NC	40		
5271759	Acenaphthene	2017/11/20	68	30 - 130	96	30 - 130	<0.010	ug/L	27	40		
5271759	Acenaphthylene	2017/11/20	71	30 - 130	99	30 - 130	<0.010	ug/L	NC	40		
5271759	Anthracene	2017/11/20	67	30 - 130	100	30 - 130	<0.010	ug/L	NC	40		
5271759	Benzo(a)anthracene	2017/11/20	73	30 - 130	120	30 - 130	<0.010	ug/L	NC	40		
5271759	Benzo(a)pyrene	2017/11/20	55	30 - 130	93	30 - 130	<0.010	ug/L	NC	40		
5271759	Benzo(b)fluoranthene	2017/11/20	56	30 - 130	99	30 - 130	<0.010	ug/L	NC	40		
5271759	Benzo(g,h,i)perylene	2017/11/20	48 (2)	30 - 130	92	30 - 130	<0.010	ug/L	NC	40		
5271759	Benzo(j)fluoranthene	2017/11/20	58	30 - 130	96	30 - 130	<0.010	ug/L	NC	40		
5271759	Benzo(k)fluoranthene	2017/11/20	57	30 - 130	90	30 - 130	<0.010	ug/L	NC	40		
5271759	Chrysene	2017/11/20	67	30 - 130	110	30 - 130	<0.010	ug/L	NC	40		
5271759	Dibenz(a,h)anthracene	2017/11/20	46 (2)	30 - 130	80	30 - 130	<0.010	ug/L	NC	40		
5271759	Fluoranthene	2017/11/20	72	30 - 130	114	30 - 130	<0.010	ug/L	NC	40		
5271759	Fluorene	2017/11/20	68	30 - 130	93	30 - 130	<0.010	ug/L	NC	40		
5271759	Indeno(1,2,3-cd)pyrene	2017/11/20	46 (2)	30 - 130	89	30 - 130	<0.010	ug/L	NC	40		
5271759	Naphthalene	2017/11/20	64	30 - 130	88	30 - 130	<0.20	ug/L	NC	40		
5271759	Perylene	2017/11/20	56	30 - 130	95	30 - 130	<0.010	ug/L	NC	40		
5271759	Phenanthrene	2017/11/20	69	30 - 130	109	30 - 130	<0.010	ug/L	33	40		
5271759	Pyrene	2017/11/20	69	30 - 130	110	30 - 130	<0.010	ug/L	NC	40		
5273377	Moisture	2017/11/20							3.3	25		
5273406	Moisture	2017/11/20							2.4	25		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5273460	Moisture	2017/11/20							0.27	25		
5273521	Moisture	2017/11/20							21	25		
5273741	1-Methylnaphthalene	2017/11/20	88	30 - 130	90	30 - 130	<0.010	mg/kg	NC	50		
5273741	2-Methylnaphthalene	2017/11/20	95	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		
5273741	Acenaphthene	2017/11/20	94	30 - 130	99	30 - 130	<0.010	mg/kg	NC	50		
5273741	Acenaphthylene	2017/11/20	102	30 - 130	110	30 - 130	<0.010	mg/kg	NC	50		
5273741	Anthracene	2017/11/20	92	30 - 130	95	30 - 130	<0.010	mg/kg	NC	50		
5273741	Benzo(a)anthracene	2017/11/20	102	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		
5273741	Benzo(a)pyrene	2017/11/20	84	30 - 130	85	30 - 130	<0.010	mg/kg	NC	50		
5273741	Benzo(b)fluoranthene	2017/11/20	77	30 - 130	85	30 - 130	<0.010	mg/kg	NC	50		
5273741	Benzo(g,h,i)perylene	2017/11/20	89	30 - 130	89	30 - 130	<0.010	mg/kg	NC	50		
5273741	Benzo(j)fluoranthene	2017/11/20	83	30 - 130	88	30 - 130	<0.010	mg/kg	NC	50		
5273741	Benzo(k)fluoranthene	2017/11/20	82	30 - 130	85	30 - 130	<0.010	mg/kg	NC	50		
5273741	Chrysene	2017/11/20	92	30 - 130	89	30 - 130	<0.010	mg/kg	NC	50		
5273741	Dibenz(a,h)anthracene	2017/11/20	79	30 - 130	87	30 - 130	<0.010	mg/kg	NC	50		
5273741	Fluoranthene	2017/11/20	99	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50		
5273741	Fluorene	2017/11/20	95	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		
5273741	Indeno(1,2,3-cd)pyrene	2017/11/20	82	30 - 130	88	30 - 130	<0.010	mg/kg	NC	50		
5273741	Naphthalene	2017/11/20	93	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5273741	Perylene	2017/11/20	85	30 - 130	88	30 - 130	<0.010	mg/kg	NC	50		
5273741	Phenanthrene	2017/11/20	104	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5273741	Pyrene	2017/11/20	96	30 - 130	94	30 - 130	<0.010	mg/kg	NC	50		
5273788	>C10-C16 Hydrocarbons	2017/11/20	95	30 - 130	98	30 - 130	<10	mg/kg	NC	50		
5273788	>C16-C21 Hydrocarbons	2017/11/20	91	30 - 130	93	30 - 130	<10	mg/kg	3.7	50		
5273788	>C21-<C32 Hydrocarbons	2017/11/20	94	30 - 130	97	30 - 130	<15	mg/kg	5.5	50		
5273789	>C10-C16 Hydrocarbons	2017/11/23	93	30 - 130	98	30 - 130	<10	mg/kg	NC	50		
5273789	>C16-C21 Hydrocarbons	2017/11/23	86	30 - 130	87	30 - 130	<10	mg/kg	NC	50		
5273789	>C21-<C32 Hydrocarbons	2017/11/23	90	30 - 130	95	30 - 130	<15	mg/kg	31	50		
5273853	Acid Extractable Aluminum (Al)	2017/11/20					<10	mg/kg	1.8	35		
5273853	Acid Extractable Antimony (Sb)	2017/11/20	98	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5273853	Acid Extractable Arsenic (As)	2017/11/20	100	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5273853	Acid Extractable Barium (Ba)	2017/11/20	93	75 - 125	99	75 - 125	<5.0	mg/kg	2.0	35		
5273853	Acid Extractable Beryllium (Be)	2017/11/20	102	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5273853	Acid Extractable Bismuth (Bi)	2017/11/20	100	75 - 125	101	75 - 125	<2.0	mg/kg	NC	35		
5273853	Acid Extractable Boron (B)	2017/11/20	100	75 - 125	95	75 - 125	<50	mg/kg	NC	35		
5273853	Acid Extractable Cadmium (Cd)	2017/11/20	95	75 - 125	99	75 - 125	<0.30	mg/kg	NC	35		
5273853	Acid Extractable Chromium (Cr)	2017/11/20	97	75 - 125	99	75 - 125	<2.0	mg/kg	3.4	35		
5273853	Acid Extractable Cobalt (Co)	2017/11/20	97	75 - 125	99	75 - 125	<1.0	mg/kg	9.7	35		
5273853	Acid Extractable Copper (Cu)	2017/11/20	96	75 - 125	97	75 - 125	<2.0	mg/kg	0.056	35		
5273853	Acid Extractable Iron (Fe)	2017/11/20					<50	mg/kg	1.6	35		
5273853	Acid Extractable Lead (Pb)	2017/11/20	97	75 - 125	97	75 - 125	<0.50	mg/kg	1.9	35		
5273853	Acid Extractable Lithium (Li)	2017/11/20	100	75 - 125	100	75 - 125	<2.0	mg/kg	4.1	35		
5273853	Acid Extractable Manganese (Mn)	2017/11/20	NC	75 - 125	101	75 - 125	<2.0	mg/kg	4.0	35		
5273853	Acid Extractable Mercury (Hg)	2017/11/20	95	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35		
5273853	Acid Extractable Molybdenum (Mo)	2017/11/20	100	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5273853	Acid Extractable Nickel (Ni)	2017/11/20	98	75 - 125	99	75 - 125	<2.0	mg/kg	0.79	35		
5273853	Acid Extractable Rubidium (Rb)	2017/11/20	99	75 - 125	100	75 - 125	<2.0	mg/kg	6.2	35		
5273853	Acid Extractable Selenium (Se)	2017/11/20	96	75 - 125	100	75 - 125	<1.0	mg/kg	NC	35		
5273853	Acid Extractable Silver (Ag)	2017/11/20	99	75 - 125	101	75 - 125	<0.50	mg/kg	NC	35		
5273853	Acid Extractable Strontium (Sr)	2017/11/20	102	75 - 125	99	75 - 125	<5.0	mg/kg	7.8	35		
5273853	Acid Extractable Thallium (Tl)	2017/11/20	100	75 - 125	98	75 - 125	<0.10	mg/kg	NC	35		
5273853	Acid Extractable Tin (Sn)	2017/11/20	100	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5273853	Acid Extractable Uranium (U)	2017/11/20	99	75 - 125	100	75 - 125	<0.10	mg/kg	7.2	35		
5273853	Acid Extractable Vanadium (V)	2017/11/20	95	75 - 125	99	75 - 125	<2.0	mg/kg	1.1	35		
5273853	Acid Extractable Zinc (Zn)	2017/11/20	97	75 - 125	101	75 - 125	<5.0	mg/kg	3.3	35		
5274088	>C10-C16 Hydrocarbons	2017/11/20	91	30 - 130	90	30 - 130	<10	mg/kg	NC	50		
5274088	>C16-C21 Hydrocarbons	2017/11/20	86	30 - 130	86	30 - 130	<10	mg/kg	NC	50		
5274088	>C21-<C32 Hydrocarbons	2017/11/20	99	30 - 130	105	30 - 130	<15	mg/kg	NC	50		
5274131	Aroclor 1016	2017/11/27					<0.050	ug/g	NC	50	<0.050	ug/g
5274131	Aroclor 1221	2017/11/27					<0.050	ug/g	NC	50	<0.050	ug/g
5274131	Aroclor 1232	2017/11/27					<0.050	ug/g	NC	50	<0.050	ug/g
5274131	Aroclor 1242	2017/11/27					<0.050	ug/g	NC	50	<0.050	ug/g

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5274131	Aroclor 1248	2017/11/27					<0.050	ug/g	NC	50	<0.050	ug/g
5274131	Aroclor 1254	2017/11/27	42 (4)	30 - 130	81	30 - 130	<0.050	ug/g	NC	50	<0.050	ug/g
5274131	Aroclor 1260	2017/11/27					<0.050	ug/g	NC	50	<0.050	ug/g
5274278	Benzene	2017/11/21	86	60 - 130	86	60 - 140	<0.025	mg/kg	NC	50		
5274278	C6 - C10 (less BTEX)	2017/11/21					<2.5	mg/kg	NC	50		
5274278	Ethylbenzene	2017/11/21	89	60 - 130	101	60 - 140	<0.025	mg/kg	NC	50		
5274278	Toluene	2017/11/21	94	60 - 130	92	60 - 140	<0.025	mg/kg	NC	50		
5274278	Total Xylenes	2017/11/21	89	60 - 130	93	60 - 140	<0.050	mg/kg	NC	50		
5275551	Acid Extractable Aluminum (Al)	2017/11/22					<10	mg/kg	22	35		
5275551	Acid Extractable Antimony (Sb)	2017/11/22	NC	75 - 125	97	75 - 125	<2.0	mg/kg	14	35		
5275551	Acid Extractable Arsenic (As)	2017/11/22	89	75 - 125	99	75 - 125	<2.0	mg/kg	3.9	35		
5275551	Acid Extractable Barium (Ba)	2017/11/22	NC	75 - 125	98	75 - 125	<5.0	mg/kg	5.7	35		
5275551	Acid Extractable Beryllium (Be)	2017/11/22	98	75 - 125	102	75 - 125	<2.0	mg/kg	NC	35		
5275551	Acid Extractable Bismuth (Bi)	2017/11/22	NC	75 - 125	99	75 - 125	<2.0	mg/kg	22	35		
5275551	Acid Extractable Boron (B)	2017/11/22	96	75 - 125	108	75 - 125	<50	mg/kg	NC	35		
5275551	Acid Extractable Cadmium (Cd)	2017/11/22	98	75 - 125	100	75 - 125	<0.30	mg/kg	NC	35		
5275551	Acid Extractable Chromium (Cr)	2017/11/22	NC	75 - 125	98	75 - 125	<2.0	mg/kg	11	35		
5275551	Acid Extractable Cobalt (Co)	2017/11/22	91	75 - 125	100	75 - 125	<1.0	mg/kg	3.5	35		
5275551	Acid Extractable Copper (Cu)	2017/11/22	NC	75 - 125	100	75 - 125	<2.0	mg/kg	3.1	35		
5275551	Acid Extractable Iron (Fe)	2017/11/22					<50	mg/kg	2.7	35		
5275551	Acid Extractable Lead (Pb)	2017/11/22	96	75 - 125	96	75 - 125	<0.50	mg/kg	27	35		
5275551	Acid Extractable Lithium (Li)	2017/11/22	99	75 - 125	100	75 - 125	<2.0	mg/kg	NC	35		
5275551	Acid Extractable Manganese (Mn)	2017/11/22	NC	75 - 125	98	75 - 125	<2.0	mg/kg	1.8	35		
5275551	Acid Extractable Mercury (Hg)	2017/11/22	93	75 - 125	101	75 - 125	<0.10	mg/kg	NC	35		
5275551	Acid Extractable Molybdenum (Mo)	2017/11/22	NC	75 - 125	99	75 - 125	<2.0	mg/kg	13	35		
5275551	Acid Extractable Nickel (Ni)	2017/11/22	NC	75 - 125	100	75 - 125	<2.0	mg/kg	7.4	35		
5275551	Acid Extractable Rubidium (Rb)	2017/11/22	97	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5275551	Acid Extractable Selenium (Se)	2017/11/22	85	75 - 125	102	75 - 125	<1.0	mg/kg	NC	35		
5275551	Acid Extractable Silver (Ag)	2017/11/22	97	75 - 125	99	75 - 125	<0.50	mg/kg	5.5	35		
5275551	Acid Extractable Strontium (Sr)	2017/11/22	99	75 - 125	97	75 - 125	<5.0	mg/kg	4.3	35		
5275551	Acid Extractable Thallium (Tl)	2017/11/22	85	75 - 125	95	75 - 125	<0.10	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5275551	Acid Extractable Tin (Sn)	2017/11/22	NC	75 - 125	101	75 - 125	<2.0	mg/kg	3.1	35		
5275551	Acid Extractable Uranium (U)	2017/11/22	101	75 - 125	99	75 - 125	<0.10	mg/kg	29	35		
5275551	Acid Extractable Vanadium (V)	2017/11/22	NC	75 - 125	100	75 - 125	<2.0	mg/kg	6.0	35		
5275551	Acid Extractable Zinc (Zn)	2017/11/22	NC	75 - 125	105	75 - 125	<5.0	mg/kg	16	35		
5275581	Aliphatic >C10-C12	2017/11/21			87	30 - 130	<8.0	mg/kg	0.83	50		
5275581	Aliphatic >C12-C16	2017/11/21			90	30 - 130	<15	mg/kg	0.78	50		
5275581	Aliphatic >C16-C21	2017/11/21			85	30 - 130	<15	mg/kg	7.0	50		
5275581	Aliphatic >C21-<C32	2017/11/21			82	30 - 130	<15	mg/kg	1.5	50		
5275581	Aromatic >C10-C12	2017/11/21			114	30 - 130	<20 (5)	mg/kg	27 (5)	50		
5275581	Aromatic >C12-C16	2017/11/21			101	30 - 130	<15	mg/kg	13	50		
5275581	Aromatic >C16-C21	2017/11/21			93	30 - 130	<15	mg/kg	15	50		
5275581	Aromatic >C21-<C32	2017/11/21			96	30 - 130	<15	mg/kg	7.1	50		
5275604	Aroclor 1016	2017/11/22					<0.050	ug/g	NC	50		
5275604	Aroclor 1221	2017/11/22					<0.050	ug/g	NC	50		
5275604	Aroclor 1232	2017/11/22					<0.050	ug/g	NC	50		
5275604	Aroclor 1242	2017/11/22					<0.050	ug/g	NC	50		
5275604	Aroclor 1248	2017/11/22					<0.050	ug/g	NC	50		
5275604	Aroclor 1254	2017/11/22	115	30 - 130	92	30 - 130	<0.050	ug/g	NC	50		
5275604	Aroclor 1260	2017/11/22					<0.050	ug/g	NC	50		
5275609	Moisture	2017/11/21							4.3	25		
5275701	Total Aluminum (Al)	2017/11/21	98	80 - 120	99	80 - 120	<5.0	ug/L	5.8	20		
5275701	Total Antimony (Sb)	2017/11/21	100	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
5275701	Total Arsenic (As)	2017/11/21	98	80 - 120	94	80 - 120	<1.0	ug/L	NC	20		
5275701	Total Barium (Ba)	2017/11/21	97	80 - 120	95	80 - 120	<1.0	ug/L	3.8	20		
5275701	Total Beryllium (Be)	2017/11/21	105	80 - 120	103	80 - 120	<1.0	ug/L				
5275701	Total Bismuth (Bi)	2017/11/21	101	80 - 120	101	80 - 120	<2.0	ug/L				
5275701	Total Boron (B)	2017/11/21	105	80 - 120	103	80 - 120	<50	ug/L	0.63	20		
5275701	Total Cadmium (Cd)	2017/11/21	101	80 - 120	99	80 - 120	<0.010	ug/L	NC	20		
5275701	Total Calcium (Ca)	2017/11/21	NC	80 - 120	104	80 - 120	<100	ug/L	1.4	20		
5275701	Total Chromium (Cr)	2017/11/21	100	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
5275701	Total Cobalt (Co)	2017/11/21	101	80 - 120	100	80 - 120	<0.40	ug/L				

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5275701	Total Copper (Cu)	2017/11/21	98	80 - 120	98	80 - 120	<2.0	ug/L	0.18	20		
5275701	Total Iron (Fe)	2017/11/21	103	80 - 120	101	80 - 120	<50	ug/L	0.87	20		
5275701	Total Lead (Pb)	2017/11/21	97	80 - 120	96	80 - 120	<0.50	ug/L	NC	20		
5275701	Total Magnesium (Mg)	2017/11/21	97	80 - 120	99	80 - 120	<100	ug/L	NC	20		
5275701	Total Manganese (Mn)	2017/11/21	101	80 - 120	98	80 - 120	<2.0	ug/L	NC	20		
5275701	Total Molybdenum (Mo)	2017/11/21	102	80 - 120	98	80 - 120	<2.0	ug/L				
5275701	Total Nickel (Ni)	2017/11/21	99	80 - 120	98	80 - 120	<2.0	ug/L	NC	20		
5275701	Total Phosphorus (P)	2017/11/21	104	80 - 120	101	80 - 120	<100	ug/L				
5275701	Total Potassium (K)	2017/11/21	103	80 - 120	102	80 - 120	<100	ug/L	1.1	20		
5275701	Total Selenium (Se)	2017/11/21	102	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
5275701	Total Silver (Ag)	2017/11/21	100	80 - 120	97	80 - 120	<0.10	ug/L				
5275701	Total Sodium (Na)	2017/11/21	99	80 - 120	98	80 - 120	<100	ug/L	0.45	20		
5275701	Total Strontium (Sr)	2017/11/21	102	80 - 120	99	80 - 120	<2.0	ug/L	0.93	20		
5275701	Total Thallium (Tl)	2017/11/21	102	80 - 120	100	80 - 120	<0.10	ug/L				
5275701	Total Tin (Sn)	2017/11/21	100	80 - 120	100	80 - 120	<2.0	ug/L				
5275701	Total Titanium (Ti)	2017/11/21	99	80 - 120	96	80 - 120	<2.0	ug/L				
5275701	Total Uranium (U)	2017/11/21	104	80 - 120	103	80 - 120	<0.10	ug/L	3.2	20		
5275701	Total Vanadium (V)	2017/11/21	102	80 - 120	99	80 - 120	<2.0	ug/L				
5275701	Total Zinc (Zn)	2017/11/21	99	80 - 120	98	80 - 120	<5.0	ug/L	12	20		
5276232	1,1,1-Trichloroethane	2017/11/23	123	60 - 140	111	60 - 130	<25	ug/kg	NC	50		
5276232	1,1,2,2-Tetrachloroethane	2017/11/23	106	60 - 140	96	60 - 130	<25	ug/kg	NC	50		
5276232	1,1,2-Trichloroethane	2017/11/23	110	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5276232	1,1-Dichloroethane	2017/11/23	123	60 - 140	111	60 - 130	<25	ug/kg	NC	50		
5276232	1,1-Dichloroethylene	2017/11/23	122	60 - 140	113	60 - 130	<25	ug/kg	NC	50		
5276232	1,2-Dichlorobenzene	2017/11/23	105	60 - 140	94	60 - 130	<25	ug/kg	NC	50		
5276232	1,2-Dichloroethane	2017/11/23	111	60 - 140	99	60 - 130	<25	ug/kg	NC	50		
5276232	1,2-Dichloropropane	2017/11/23	107	60 - 140	97	60 - 130	<25	ug/kg	NC	50		
5276232	1,3-Dichlorobenzene	2017/11/23	108	60 - 140	96	60 - 130	<25	ug/kg	NC	50		
5276232	1,4-Dichlorobenzene	2017/11/23	108	60 - 140	96	60 - 130	<25	ug/kg	NC	50		
5276232	Benzene	2017/11/23	111	60 - 140	99	60 - 130	<25	ug/kg	NC	50		
5276232	Bromodichloromethane	2017/11/23	111	60 - 140	100	60 - 130	<25	ug/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5276232	Bromoform	2017/11/23	110	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5276232	Bromomethane	2017/11/23	112	60 - 140	100	60 - 140	<50	ug/kg	NC	50		
5276232	Carbon Tetrachloride	2017/11/23	121	60 - 140	110	60 - 130	<25	ug/kg	NC	50		
5276232	Chlorobenzene	2017/11/23	110	60 - 140	98	60 - 130	<25	ug/kg	NC	50		
5276232	Chloroethane	2017/11/23	108	60 - 140	97	60 - 140	<200	ug/kg	NC	50		
5276232	Chloroform	2017/11/23	109	60 - 140	99	60 - 130	<25	ug/kg	NC	50		
5276232	cis-1,2-Dichloroethylene	2017/11/23	121	60 - 140	110	60 - 130	<25	ug/kg	NC	50		
5276232	cis-1,3-Dichloropropene	2017/11/23	120	60 - 140	105	60 - 130	<25	ug/kg	NC	50		
5276232	Dibromochloromethane	2017/11/23	112	60 - 140	102	60 - 130	<25	ug/kg	NC	50		
5276232	Ethylbenzene	2017/11/23	115	60 - 140	103	60 - 130	<25	ug/kg	NC	50		
5276232	Ethylene Dibromide	2017/11/23	110	60 - 140	99	60 - 130	<25	ug/kg	NC	50		
5276232	Methyl t-butyl ether (MTBE)	2017/11/23	140	60 - 140	125	60 - 130	<25	ug/kg	NC	50		
5276232	Methylene Chloride(Dichloromethane)	2017/11/23	142 (6)	60 - 140	127	60 - 130	<25	ug/kg	NC	50		
5276232	o-Xylene	2017/11/23	114	60 - 140	102	60 - 130	<25	ug/kg	NC	50		
5276232	p+m-Xylene	2017/11/23	113	60 - 140	101	60 - 130	<25	ug/kg	NC	50		
5276232	Styrene	2017/11/23	115	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5276232	Tetrachloroethylene	2017/11/23	117	60 - 140	106	60 - 130	<25	ug/kg	NC	50		
5276232	Toluene	2017/11/23	117	60 - 140	104	60 - 130	<25	ug/kg	NC	50		
5276232	Total Xylenes	2017/11/23					<50	ug/kg	NC	50		
5276232	trans-1,2-Dichloroethylene	2017/11/23	121	60 - 140	111	60 - 130	<25	ug/kg	NC	50		
5276232	trans-1,3-Dichloropropene	2017/11/23	106	60 - 140	91	60 - 130	<25	ug/kg	NC	50		
5276232	Trichloroethylene	2017/11/23	115	60 - 140	103	60 - 130	<10	ug/kg	NC	50		
5276232	Trichlorofluoromethane (FREON 11)	2017/11/23	107	60 - 140	104	60 - 140	<25	ug/kg	NC	50		
5276232	Vinyl Chloride	2017/11/23	114	60 - 140	106	60 - 140	<20	ug/kg	NC	50		
5276268	Benzene	2017/11/21	81	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50		
5276268	C6 - C10 (less BTEX)	2017/11/21					<2.5	mg/kg	NC	50		
5276268	Ethylbenzene	2017/11/21	88	60 - 130	97	60 - 140	<0.025	mg/kg	NC	50		
5276268	Toluene	2017/11/21	81	60 - 130	94	60 - 140	<0.025	mg/kg	NC	50		
5276268	Total Xylenes	2017/11/21	90	60 - 130	100	60 - 140	<0.050	mg/kg	NC	50		
5276304	>C8-C10 Aromatics (-EX)	2017/11/21					<0.50	mg/kg				
5276304	Aliphatic >C6-C8	2017/11/21					<1.0	mg/kg				

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5276304	Aliphatic >C8-C10	2017/11/21					<1.0	mg/kg				
5276304	Benzene	2017/11/21			96	60 - 140	<0.025	mg/kg				
5276304	Ethylbenzene	2017/11/21			97	60 - 140	<0.025	mg/kg				
5276304	Toluene	2017/11/21			94	60 - 140	<0.025	mg/kg				
5276304	Total Xylenes	2017/11/21			100	60 - 140	<0.050	mg/kg				
5276613	Aroclor 1016	2017/11/23					<0.050	ug/g	NC	50		
5276613	Aroclor 1221	2017/11/23					<0.050	ug/g	NC	50		
5276613	Aroclor 1232	2017/11/23					<0.050	ug/g	NC	50		
5276613	Aroclor 1242	2017/11/23					<0.050	ug/g	NC	50		
5276613	Aroclor 1248	2017/11/23					<0.050	ug/g	NC	50		
5276613	Aroclor 1254	2017/11/23	90	30 - 130	97	30 - 130	<0.050	ug/g	NC	50		
5276613	Aroclor 1260	2017/11/23					<0.050	ug/g	NC	50		
5278476	Benzene	2017/11/23	84	60 - 130	95	60 - 140	<0.025	mg/kg	NC	50		
5278476	C6 - C10 (less BTEX)	2017/11/23					<2.5	mg/kg	NC	50		
5278476	Ethylbenzene	2017/11/23	92	60 - 130	96	60 - 140	<0.025	mg/kg	NC	50		
5278476	Toluene	2017/11/23	83	60 - 130	93	60 - 140	<0.025	mg/kg	NC	50		
5278476	Total Xylenes	2017/11/23	92	60 - 130	99	60 - 140	<0.050	mg/kg	NC	50		
5278530	Benzene	2017/11/22	82	60 - 130	89	60 - 140	<0.025	mg/kg	4.5	50		
5278530	C6 - C10 (less BTEX)	2017/11/22					<2.5	mg/kg	0.17	50		
5278530	Ethylbenzene	2017/11/22	87	60 - 130	89	60 - 140	<0.025	mg/kg	NC	50		
5278530	Toluene	2017/11/22	81	60 - 130	95	60 - 140	<0.025	mg/kg	10	50		
5278530	Total Xylenes	2017/11/22	86	60 - 130	87	60 - 140	<0.050	mg/kg	10	50		
5282462	Acid Extractable Aluminum (Al)	2017/11/24					<10	mg/kg	NC	35		
5282462	Acid Extractable Antimony (Sb)	2017/11/24	95	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Arsenic (As)	2017/11/24	96	75 - 125	94	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Barium (Ba)	2017/11/24	NC	75 - 125	92	75 - 125	<5.0	mg/kg	30	35		
5282462	Acid Extractable Beryllium (Be)	2017/11/24	96	75 - 125	95	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Boron (B)	2017/11/24	99	75 - 125	96	75 - 125	<5.0	mg/kg	6.6	35		
5282462	Acid Extractable Cadmium (Cd)	2017/11/24	99	75 - 125	97	75 - 125	<0.30	mg/kg	NC	35		
5282462	Acid Extractable Chromium (Cr)	2017/11/24	96	75 - 125	93	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Cobalt (Co)	2017/11/24	96	75 - 125	95	75 - 125	<1.0	mg/kg	NC	35		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5282462	Acid Extractable Copper (Cu)	2017/11/24	97	75 - 125	94	75 - 125	<2.0	mg/kg	16	35		
5282462	Acid Extractable Iron (Fe)	2017/11/24					<50	mg/kg	23	35		
5282462	Acid Extractable Lead (Pb)	2017/11/24	95	75 - 125	93	75 - 125	<0.50	mg/kg	33	35		
5282462	Acid Extractable Lithium (Li)	2017/11/24	97	75 - 125	95	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Manganese (Mn)	2017/11/24	NC	75 - 125	94	75 - 125	<2.0	mg/kg	4.2	35		
5282462	Acid Extractable Molybdenum (Mo)	2017/11/24	98	75 - 125	96	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Nickel (Ni)	2017/11/24	99	75 - 125	97	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Selenium (Se)	2017/11/24	99	75 - 125	99	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Silver (Ag)	2017/11/24	97	75 - 125	96	75 - 125	<0.50	mg/kg	NC	35		
5282462	Acid Extractable Strontium (Sr)	2017/11/24	92	75 - 125	93	75 - 125	<5.0	mg/kg	9.2	35		
5282462	Acid Extractable Thallium (Tl)	2017/11/24	95	75 - 125	96	75 - 125	<0.10	mg/kg	NC	35		
5282462	Acid Extractable Uranium (U)	2017/11/24	93	75 - 125	92	75 - 125	<0.10	mg/kg	NC	35		
5282462	Acid Extractable Vanadium (V)	2017/11/24	96	75 - 125	95	75 - 125	<2.0	mg/kg	NC	35		
5282462	Acid Extractable Zinc (Zn)	2017/11/24	97	75 - 125	99	75 - 125	<5.0	mg/kg	8.2	35		
5282623	1-Methylnaphthalene	2017/11/26	98	30 - 130	102	30 - 130	<0.010	mg/kg	NC	50		
5282623	2-Methylnaphthalene	2017/11/26	102	30 - 130	107	30 - 130	<0.010	mg/kg	NC	50		
5282623	Acenaphthene	2017/11/26	104	30 - 130	109	30 - 130	<0.010	mg/kg	NC	50		
5282623	Acenaphthylene	2017/11/26	105	30 - 130	107	30 - 130	<0.010	mg/kg	NC	50		
5282623	Anthracene	2017/11/26	105	30 - 130	109	30 - 130	<0.010	mg/kg	NC	50		
5282623	Benzo(a)anthracene	2017/11/26	101	30 - 130	96	30 - 130	<0.010	mg/kg	NC	50		
5282623	Benzo(a)pyrene	2017/11/26	96	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5282623	Benzo(b)fluoranthene	2017/11/26	91	30 - 130	98	30 - 130	<0.010	mg/kg	NC	50		
5282623	Benzo(g,h,i)perylene	2017/11/26	76	30 - 130	73	30 - 130	<0.010	mg/kg	NC	50		
5282623	Benzo(j)fluoranthene	2017/11/26	103	30 - 130	107	30 - 130	<0.010	mg/kg	NC	50		
5282623	Benzo(k)fluoranthene	2017/11/26	100	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50		
5282623	Chrysene	2017/11/26	97	30 - 130	97	30 - 130	<0.010	mg/kg	NC	50		
5282623	Dibenz(a,h)anthracene	2017/11/26	77	30 - 130	70	30 - 130	<0.010	mg/kg	NC	50		
5282623	Fluoranthene	2017/11/26	103	30 - 130	104	30 - 130	<0.010	mg/kg	NC	50		
5282623	Fluorene	2017/11/26	103	30 - 130	106	30 - 130	<0.010	mg/kg	NC	50		
5282623	Indeno(1,2,3-cd)pyrene	2017/11/26	77	30 - 130	71	30 - 130	<0.010	mg/kg	NC	50		
5282623	Naphthalene	2017/11/26	95	30 - 130	101	30 - 130	<0.010	mg/kg	NC	50		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5282623	Perylene	2017/11/26	96	30 - 130	100	30 - 130	<0.010	mg/kg	NC	50		
5282623	Phenanthrene	2017/11/26	104	30 - 130	108	30 - 130	<0.010	mg/kg	NC	50		
5282623	Pyrene	2017/11/26	103	30 - 130	105	30 - 130	<0.010	mg/kg	NC	50		
5285487	1-Methylnaphthalene	2017/11/28	NC	30 - 130	93	30 - 130	<0.010	mg/kg	145 (7)	50		
5285487	2-Methylnaphthalene	2017/11/28	NC	30 - 130	102	30 - 130	<0.010	mg/kg	140 (7)	50		
5285487	Acenaphthene	2017/11/28	NC	30 - 130	102	30 - 130	<0.010	mg/kg	116 (7)	50		
5285487	Acenaphthylene	2017/11/28	NC	30 - 130	101	30 - 130	<0.010	mg/kg	55 (7)	50		
5285487	Anthracene	2017/11/28	NC	30 - 130	109	30 - 130	<0.010	mg/kg	3.8	50		
5285487	Benzo(a)anthracene	2017/11/28	NC	30 - 130	99	30 - 130	<0.010	mg/kg	9.8	50		
5285487	Benzo(a)pyrene	2017/11/28	NC	30 - 130	98	30 - 130	<0.010	mg/kg	13	50		
5285487	Benzo(b)fluoranthene	2017/11/28	NC	30 - 130	97	30 - 130	<0.010	mg/kg	6.5	50		
5285487	Benzo(g,h,i)perylene	2017/11/28	NC	30 - 130	93	30 - 130	<0.010	mg/kg	9.4	50		
5285487	Benzo(j)fluoranthene	2017/11/28	NC	30 - 130	102	30 - 130	<0.010	mg/kg	25	50		
5285487	Benzo(k)fluoranthene	2017/11/28	NC	30 - 130	97	30 - 130	<0.010	mg/kg	25	50		
5285487	Chrysene	2017/11/28	NC	30 - 130	96	30 - 130	<0.010	mg/kg	9.8	50		
5285487	Dibenz(a,h)anthracene	2017/11/28	NC	30 - 130	91	30 - 130	<0.010	mg/kg	97 (7)	50		
5285487	Fluoranthene	2017/11/28	NC	30 - 130	104	30 - 130	<0.010	mg/kg	35	50		
5285487	Fluorene	2017/11/28	NC	30 - 130	100	30 - 130	<0.010	mg/kg	61 (7)	50		
5285487	Indeno(1,2,3-cd)pyrene	2017/11/28	NC	30 - 130	90	30 - 130	<0.010	mg/kg	4.4	50		
5285487	Naphthalene	2017/11/28	NC	30 - 130	96	30 - 130	<0.010	mg/kg	132 (7)	50		
5285487	Perylene	2017/11/28	NC	30 - 130	97	30 - 130	<0.010	mg/kg	43	50		
5285487	Phenanthrene	2017/11/28	NC	30 - 130	103	30 - 130	<0.010	mg/kg	34	50		

QUALITY ASSURANCE REPORT(CONT'D)

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD		Reagent Blank	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	Value	UNITS
5285487	Pyrene	2017/11/28	NC	30 - 130	103	30 - 130	<0.010	mg/kg	34	50		

Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.

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

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

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

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

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

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

(1) PCB sample contained sediment.

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

(3) PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

(4) Matrix Spike: results are outside acceptance limit. Analysis was repeated with similar results.

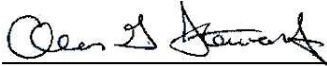
(5) Elevated TEH RDL(s) due to detected levels in the method blank.

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

(7) Duplicate: results are outside acceptance limit due to possible sample in-homogeneity. Analysis was repeated with similar results.

VALIDATION SIGNATURE PAGE

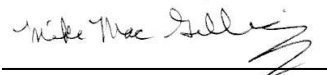
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Alan Stewart, Organics Manager, Bedford



Eric Dearman, Scientific Specialist



Mike MacGillivray, Scientific Specialist (Inorganics)



Rosemarie MacDonald, Scientific Specialist (Organics)

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



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 49 Elizabeth Avenue, St John's, NL A1A 1W9 Tel: 709-754-0203 Fax: 709-754-8012 Toll Free: 1-888-492-7227
 465 George Street, Sydney, NS B1P 1K5 Tel: 902-507-1255 Fax: 902-539-6504 Toll Free: 1-888-539-7770

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CHAIN OF CUSTODY RECORD

COC #:

Invoice Information	Report Information (if differs from invoice)	Project Information (Where applicable)	Turnaround Time (TAT) Required
Company Name: <u>Stantec</u>	Company Name: <u>Stantec</u>	Quotation #: _____	<input checked="" type="checkbox"/> Regular TAT (5 business days) Most analysed
Contact Name: <u>Accounts Payable</u>	Contact Name: <u>Jim Slade</u>	P.O. # / AFEN: <u>121414915.300.002</u>	PLEASE PROVIDE AVANCE NOTICE FOR PUSH PROJECTS
Address: _____	Address: <u>141 Kelsey Drive, St. John's, NL</u>	Project ID: <u>Former Military Site, Cartwright</u>	F RUSH please specify date (Surcharges will be applied)
Postal Code: _____	Postal Code: <u>A1B 0L2</u>	Site Location: <u>Cartwright, NL</u>	Date Required: _____
Phone: _____ Fax: _____	Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u>	Site #: _____	Rush Confirmation # _____
Email: <u>accounts.payable.invoices@stantec.com</u>	Email: <u>james.slade@stantec.com</u>	Sampled By: <u>Randy Patey</u>	

Laboratory Use Only				Analysis Requested															Regulatory Requirements											
CUSTODY SEAL Y / N		COOLER TEMPERATURES		AVERAGE TEMP	INTEGRITY YES / NO																	Regulatory Requirements								
Present	Intact																					<input type="checkbox"/> PHRI <input type="checkbox"/> CCME <input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> OTHER (Please Specify)								
							# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	RCAP 30 (CIRCLE) TOTAL / DISSOLVED	RCAP MS (CIRCLE) TOTAL / DISSOLVED	Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury	Metals & Mercury	Default Acid Extractable (Available) Digest	Metals Total Digest for Chromium	Mercury Low Level by Cold Vapour EA (Required for CCME Agricultural)	Hot Water Soluble Boron	NBCA Hydrocarbons (BTEX, G6-G32)	Hydrocarbons Soil (Extractable), MS 4 and 5a Spill Policy	MS 4 and 5a Spill Policy	NB Potable Water BTEX, VPH, Low Level 1 & 4	PHH	FWAL PAHs in water (well-Acrobic, Caraboline)	PCB	VOC	<i>Silicagel clean-up.</i> <i>TPH Fractionation.</i>	HOLD - DO NOT ANALYZE	

SAMPLE IDENTIFICATION		DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH MM)	MATRIX																COMMENTS										
1	CWT-TP6-BS1	2017/11/07		Soil												X														
2	CWT-TP7-BS1															X								X						
3	CWT-TP9-BS1															X								X						
4	CWT-TP10-BS1														X									X						
5	CWT-TP10-BS2															X								X						
6	CWT-TP11-BS1														X								X		X					
7	CWT-TP12-BS1															X							X		X					
8	CWT-TP13-BS1															X							X		X					
9	CWT-TP13-BS2																						X		X					
10	CWT-TP14-BS1														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 #



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CHAIN OF CUSTODY RECORD

COC #:

Page 2 of 8

Invoice Information		Report Information (if differs from invoice)		Project Information (Where applicable)		Turnaround Time (TAT) Required	
Company Name: <u>Stantec</u>		Company Name: <u>Stantec</u>		Quotation #: _____		<input checked="" type="checkbox"/> Regular TAT (5 business days) Most analyses	
Contact Name: <u>Accounts Payable</u>		Contact Name: <u>Jim Slade</u>		P.O. #/ AF#: <u>121414915.300.002</u>		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
Address: _____		Address: <u>141 Kelsey Drive, St. John's, NL</u>		Project ID: <u>Former Military Site, Cartwright</u>		RUSH please specify date (Surcharges will be applied)	
Postal Code: _____		Postal Code: <u>A1B 0L2</u>		Site Location: <u>Cartwright, NL</u>		Date Required: _____	
Phone: _____ Fax: _____		Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u>		Site #: _____		Rush Confirmation # _____	
Email: <u>accounts.payable.invoices@stantec.com</u>		Email: <u>james.slade@stantec.com</u>		Sampled By: <u>Randy Patew</u>			

Laboratory Use Only				Analysis Requested										Regulatory Requirements																	
CUSTODY SEAL Y / N		COOLER TEMPERATURES		AVERAGE TEMP		INTEGRITY YES / NO												<input type="checkbox"/> PIRI <input type="checkbox"/> CCME <input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> OTHER (Please Specify)													
Present	Intact							# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury	Metals & Mercury	Default Acid Extractable (Available) Digest	Merch Total Digest for Dioxin	Mercury (Low level) by Cold Vapour AA	Hot Water Soluble Boron (required for CCME Agriculture-2)	RBCA Hydrocarbons: BTEX, CG-C22)	Hydrocarbons Soil (Soluble: MS Function) (Oil Policy Low Level) BTEX, CG-C32	MS Potable Water BTEX, VPH, Low Level T.E. by	PHAS	FWAL PAHS in water (level: Aer. line: Counting)	PCB	VOC	Silica gel clean-up.		HOLD- DO NOT ANALYZE	COMMENTS

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	Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury	Metals & Mercury	Default Acid Extractable (Available) Digest	Merch Total Digest for Dioxin	Mercury (Low level) by Cold Vapour AA	Hot Water Soluble Boron (required for CCME Agriculture-2)	RBCA Hydrocarbons: BTEX, CG-C22)	Hydrocarbons Soil (Soluble: MS Function) (Oil Policy Low Level) BTEX, CG-C32	MS Potable Water BTEX, VPH, Low Level T.E. by	PHAS	FWAL PAHS in water (level: Aer. line: Counting)	PCB	VOC	Silica gel clean-up.		HOLD- DO NOT ANALYZE	COMMENTS	
1	CWT-TP15-BS1	2017/11/07		Soil									X					X	X				X	X					
2	CWT-TP15-BS2																	X				X							
3	CWT-TP16-BS1												X					X					X						
4	CWT-TP16-BS2																	X					X						
5	CWT-TP17-BS1																	X				X							
6	CWT-TP17-BS2																	X					X						
7	CWT-TP18-BS1												X					X					X		X				
8	CWT-TP19-BS1																	X				X							
9	CWT-TP19-BS2																	X					X						
10	CWT-TP20-BS1												X					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 #



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 465 George Street, Sydney, NS B1P 1K5 Tel: 902-567-1255 Fax: 902-539-6504 Toll Free: 1-888-535-7770

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CHAIN OF CUSTODY RECORD

COC #:

Page 3 of 8

Invoice Information		Report Information (if differs from invoice)		Project Information (Where applicable)		Turnaround Time (TAT) Required	
Company Name: <u>Stantec</u>		Company Name: <u>Stantec</u>		Quotation #: _____		<input checked="" type="checkbox"/> Regular TAT (5 business days) Most analyses PLEASE PROVIDE ADVANCE NOTICE FOR BUSI PROJECTS F RUSH please specify date (Surcharges will be applied)	
Contact Name: <u>Accounts Payable</u>		Contact Name: <u>Jim Slade</u>		P.O. # / AFE#: <u>121414915.300.002</u>		Date Required: _____	
Address: _____		Address: <u>141 Kelsey Drive, St. John's, NL</u>		Project ID: <u>Former Military Site, Cartwright</u>		Rush Confirmation # _____	
Postal Code: _____		Postal Code: <u>A1B 0L2</u>		Site location: <u>Cartwright, NL</u>			
Phone: _____ Fax: _____		Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u>		Site #: _____			
Email: <u>accounts.payable.invoices@stantec.com</u>		Email: <u>james.slade@stantec.com</u>		Sampled By: <u>Randy Patey</u>			

Laboratory Use Only				Analysis Requested												Regulatory Requirements																
CUSTODY SEAL Y / N		COOLER TEMPERATURES		AVERAGE TEMP		INTEGRITY YES / NO		# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	PCAP-30 (CIRCLE) TOTAL / DISOVED	PCAP-MS (CIRCLE) TOTAL / DISOVED	Total Digest (Default Method) for water & surface water	Dissolved for ground water	Mercury	Metals & Mercury	Metals (Soil)	Delon Acid Extractable (Available Digest)	Metals Total Digest for Organics (NO ₃ / NH ₄ / HCO ₃)	Mercury (Low Level by Cold Vapor LA)	Hot Water Soluble Boron (required for CCME Agricultural)	PBCA Hydrocarbons (BTEX (C6-C12))	Hydrocarbon Soil (Portable) MS Total Oil Spill Policy (Low Level BTEX (C6-C12))	MB Potable Water BTEX (PH, Low Level) E 14	PHE	FWAL PAHs in water (with Air-dine, Gun-fiber)	PCBs	VOCs	<i>Cliff's set clean-up</i> <i>Abbott's</i>	HOLD-DO NOT ANALYZE	<input type="checkbox"/> PIRI <input type="checkbox"/> CCME <input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> OTHER (Please Specify)	
Present	Intact																															

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

SAMPLE IDENTIFICATION		DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	PCAP-30 (CIRCLE) TOTAL / DISOVED	PCAP-MS (CIRCLE) TOTAL / DISOVED	Total Digest (Default Method) for water & surface water	Dissolved for ground water	Mercury	Metals & Mercury	Metals (Soil)	Delon Acid Extractable (Available Digest)	Metals Total Digest for Organics (NO ₃ / NH ₄ / HCO ₃)	Mercury (Low Level by Cold Vapor LA)	Hot Water Soluble Boron (required for CCME Agricultural)	PBCA Hydrocarbons (BTEX (C6-C12))	Hydrocarbon Soil (Portable) MS Total Oil Spill Policy (Low Level BTEX (C6-C12))	MB Potable Water BTEX (PH, Low Level) E 14	PHE	FWAL PAHs in water (with Air-dine, Gun-fiber)	PCBs	VOCs	<i>Cliff's set clean-up</i> <i>Abbott's</i>	HOLD-DO NOT ANALYZE	COMMENTS	
1	CWT-TP21-BS1	2017/11/07		Soil									X						X					X		X			
2	CWT-TP22-BS1												X						X			X		X		X			
3	CWT-TP23-BS1												X						X			X		X		X			
4	CWT-TP24-BS1												X						X			X		X		X			
5	CWT-TP25-BS1												X						X			X		X		X			
6	CWT-TP25-BS2												X						X			X		X		X			
7	CWT-TP26-BS1												X						X			X		X		X			
8	CWT-TP26-BS2												X						X			X		X		X			
9	CWT-TP27-BS1												X						X			X		X		X			
10	CWT-TP27-BS2												X						X			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 #



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CHAIN OF CUSTODY RECORD

COC #:

Page 4 of 8

Invoice information	Report information (if differs from invoice)	Project information (where applicable)	Turnaround Time (TAT) Required
Company Name: <u>Stantec</u> Contact Name: <u>Accounts Payable</u> Address: _____ Postal Code: _____ Phone: _____ Fax: _____ Email: <u>accounts.payable.invoices@stantec.com</u>	Company Name: <u>Stantec</u> Contact Name: <u>Jim Slade</u> Address: <u>141 Kelsey Drive, St. John's, NL</u> Postal Code: <u>A1B 0L2</u> Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u> Email: <u>james.slade@stantec.com</u>	Quotation #: _____ P.O. #/ AFE#: <u>121414915.300.002</u> Project ID: <u>Former Military Site, Cartwright</u> Site Location: <u>Cartwright, NL</u> Site #: _____ Sampled By: <u>Randy Patey</u>	<input checked="" type="checkbox"/> 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				Analysis Requested												Regulatory Requirements					
CUSTODY SEAL Y / N		COOLER TEMPERATURES		AVERAGE TEMP		INTEGRITY															
Present	Intact					YES / NO															
						Integrity Checklist By: _____															

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

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)		Metals (Soil)		Mercury	Metals & Mercury	Default Acid Extractable (Available) Digest	Metals Total Digest for Ocean Sediments (MDS)/HF/HClO4	Mercury Low level by Cold Vapour AA	Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, CG-C32)	Hydrocarbons Soil (Potable), NS Fuel Oil Spill Policy Low Level BTEX, CG-C32	NS Potable Water BTEX, VPH, Low level T, E, H	PAHs	PWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs	HOLD-DO NOT ANALYZE	COMMENTS		
1 CWT-TP28-B51	2017/11/07		Soil								X																				
2 CWT-TP28-B52																															
3 CWT-TP29-B51																															
4 CWT-TP29-B52											X																				
5 CWT-TP30-B51											X																				
6 CWT-TP30-B52																															
7 CWT-TP31-B51																															
8 CWT-TP31-B52											X																				
9 CWT-TP32-B51																															
10 CWT-TP32-B52																															

dilute gels clean-up Asbestos.

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #



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CHAIN OF CUSTODY RECORD

COC #:

Page 5 of 8

Invoice Information				Report Information (if differs from invoice)				Project Information (where applicable)				Turnaround Time (TAT) Required																							
Company Name: <u>Stantec</u>				Company Name: <u>Stantec</u>				Quotation #: _____				<input checked="" type="checkbox"/> Regular TAT (5 business days) Most analyses																							
Contact Name: <u>Accounts Payable</u>				Contact Name: <u>Jim Slade</u>				P.O. #/ AFER: <u>121414915.300.002</u>				PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS																							
Address: _____ Postal Code: _____				Address: <u>141 Kelsey Drive, St. John's, NL</u> Postal Code: <u>A1B 0L2</u>				Project ID: <u>Former Military Site, Cartwright</u>				RUSH please specify date (Surcharges will be applied)																							
Phone: _____ Fax: _____				Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u>				Site Location: <u>Cartwright, NL</u>				Date Required: _____																							
Email: <u>accounts.payable.invoices@stantec.com</u>				Email: <u>james.slade@stantec.com</u>				Site #: _____				Rush Confirmation # _____																							
Laboratory Use Only				Analysis Requested												Regulatory Requirements																			
CUSTODY SEAL Y / N		COOLER TEMPERATURES		AVERAGE TEMP		INTEGRITY YES / NO																													
Present	Intact							# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	RCAP-3D (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury	Metals & Mercury	Default Acid Extractable (Available Digest)	Metals (Water)	Metals (Soil)	Mercury Total Digest for Ocean Sediments (HNO ₃ /H ₂ O ₂)	Mercury Low level by Cold Vapour AA	Hot Water Soluble Boron (required for CCKE Agriculture)	RBGA Hydrocarbons (BTEX, CG-C32)	Hydrocarbons Soil (Prelim), MS Fuel Oil Spill Policy Low Level BTEX, CG-C32	NB Potable Water BTEX, VPH, Low level E H	PAHs	FWAL PAHs in water (with Acridine, Quinoline)	PCBs	VOCs	SILICA gel clean-up TPH fractions		HOLD- DO NOT ANALYZE	<input type="checkbox"/> PIRI <input type="checkbox"/> CCME <input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> OTHER (Please Specify)		
SAMPLE IDENTIFICATION				DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX													COMMENTS																
1	CWT-TP33-BS1			2017/11/07		Soil																													
2	CWT-TP33-BS2																																		
3	CWT-TP34-BS1																																		
4	CWT-TP35-BS1																																		
5	CWT-TP35-BS2																																		
6	CWT-TP36-BS1															X																			
7	CWT-TP36-BS2																								X			X							
8	CWT-TP37-BS1															X												X							
9	CWT-TP37-BS2																																		
10	CWT-TP38-BS1																											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 #																	



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CHAIN OF CUSTODY RECORD

COC #:

Page 6 of 8

Invoice Information	Report Information (if differs from invoice)	Project Information (where applicable)	Turnaround Time (TAT) Required
Company Name: <u>Stantec</u>	Company Name: <u>Stantec</u>	Quotation #: _____	<input checked="" type="checkbox"/> Regular TAT (5 business days) Most analyses
Contact Name: <u>Accounts Payable</u>	Contact Name: <u>Jim Slade</u>	P.O. # / AFE#: <u>121414915.300.002</u>	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: _____ Postal Code: _____	Address: <u>141 Kelsey Drive, St. John's, NL</u> Postal Code: <u>A1B 0L2</u>	Project ID: <u>Former Military Site, Cartwright</u>	F RUSH please specify date (Surcharges will be applied)
Phone: _____ Fax: _____	Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u>	Site Location: <u>Cartwright, NL</u>	Date Required: _____
Email: <u>accounts.payable.invoices@stantec.com</u>	Email: <u>james.slade@stantec.com</u>	Sampled By: <u>Randy Patey</u>	Rush Confirmation # _____

Laboratory Use Only				Analysis Requested												Regulatory Requirements				
CUSTODY SEAL V / N		COOLER TEMPERATURES		AVERAGE TEMP	INTEGRITY															
Present	Intact				YES / NO															
Integrity Checklist By: _____																				
SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM																				

SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	RCAP-3D (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Metals (Water)		Metals (Soil)		Mercury	Mercury & Mercury Default Acid Extractable (Available Digest)	Metals Total Digest - for Ocean sediments (MND3/HF/HClO4)	Mercury Low Level by Cold Vapour AA	Hot Water Soluble Boron (required for CCAR Agricultural)	RBCA Hydrocarbons (BTEX, C6-C12)	Hydrocarbons Sol (Potable), NS Fuel Oil Spill Policy Low Level (BTEX, C6-C12)	NB Potable Water (BTEX, VPH, Low Level) E.H.	PAHs	PWAL PAHs in water (with Acridine Quinoline)	PCBs	VOCs	HOLD- DO NOT ANALYZE	COMMENTS	
									Total Digest (Default Method) for well water & surface water	Dissolved for ground water																	
1 CWT-TP 38-BS2	2017/11/01		Soil																								
2 CWT-TP 39-BS1										X																	
3 CWT-TP 39-BS2																											
4 CWT-TP 40-BS1										X																	
5 CWT-TP 40-BS2																											
6 CWT-TP 41-BS1																					X	X					
7 CWT-TP 41-BS2																											
8 CWT-TP 42-BS1										X																	
9 CWT-TP 42-BS2																											
10 CWT-TP 43-BS1																											

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #

Silica gel clean up

CHAIN OF CUSTODY RECORD

COC #: _____ Page 7 of 8

Invoice Information

Company Name: Stantec
 Contact Name: Accounts Payable
 Address: _____
 Postal Code: _____
 Phone: _____ Fax: _____
 Email: accounts.payable.invoices@stantec.com

Report Information (if differs from invoice)

Company Name: Stantec
 Contact Name: Jim Slade
 Address: 141 Kelsey Drive, St. John's, NL
 Postal Code: A1B 0L2
 Phone: 709-576-1458 Fax: 709-576-2126
 Email: james.slade@stantec.com

Project Information (where applicable)

Quotation #: _____
 P.O. #/AFER: 121414915.300.002
 Project ID: Former Military Site, Cartwright
 Site Location: Cartwright, NL
 Site #: _____
 Sampled By: Randy Patey

Turnaround Time (TAT) Required

Regular TAT (5 business days) Most analyses
 PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
RUSH please specify date (Surcharges will be applied)
 Date Required: _____
 Rush Confirmation # _____

Laboratory Use Only

CUSTODY SEAL Y / N		COOLER TEMPERATURES	AVERAGE TEMP	INTEGRITY YES / NO
Present	Intact			

Integrity Checklist By: _____

Analysis Requested

Metals (Water)	Metals (Soil)	Metals & Mercury Default Acid Extractable (Available) Digest	Mercury	Mercury Total Digest (Default Method) for well water & surface water	Mercury Low level by Cold Vapour AA	Hot Water Soluble Boron (required for CCME Agricultural)	RBCA Hydrocarbons (BTEX, C6-C12)	Hydrocarbons Soil (Potable), MS Fuel Oil Spill Policy Low Level BTEX, C6-C12	MS Potable Water BTEX, VPH, Low Level T E H	PAHs	PWAL PAHs in water (with Acridine, Quindine)	PCBs	VOCs	SILICA gel.

Regulatory Requirements

PIRI CCME
 Tier 1
 Tier 2
 OTHER (Please Specify) _____

SAMPLES MUST BE KEPT COOL (< 10 °C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

SAMPLE IDENTIFICATION	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	MATRIX
1 CWT-BERRY 4	2017/1/07		Veget.
2 CWT-BERRY 6			
3 CWT-BERRY 7			
4 CWT-BERRY 8			
5 CWT-SW2			
6 CWT-TP100-BS1			Water.
7 CWT-TP101-BS1			Soil
8 CWT-TP102-BS1			
9 CWT-TP103-BS2			
10 CWT-TP104-BS2			

RELINQUISHED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (Signature/Print)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	MAXXAM JOB #

CHAIN OF CUSTODY RECORD

COC #: _____

Page 8 of 8

Invoice Information Company Name: <u>Stantec</u> Contact Name: <u>Accounts Payable</u> Address: _____ Postal Code: _____ Phone: _____ Fax: _____ Email: <u>accounts.payable.invoices@stantec.com</u>		Report Information (if differs from invoice) Company Name: <u>Stantec</u> Contact Name: <u>Jim Slade</u> Address: <u>141 Kelsey Drive, St. John's, NL</u> Postal Code: <u>A1B 0L2</u> Phone: <u>709-576-1458</u> Fax: <u>709-576-2126</u> Email: <u>james.slade@stantec.com</u>		Project Information (where applicable) Quotation #: _____ P.O. #/ AFE#: <u>121414915.300.002</u> Project ID: <u>Former Military Site, Cartwright</u> Site Location: <u>Cartwright, NL</u> Site #: _____ Sampled By: <u>Randy Patey</u>		Turnaround Time (TAT) Required <input type="checkbox"/> Regular TAT (5 business days) Most analyses PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS <input checked="" type="checkbox"/> RUSH please specify date (Surcharges will be applied) Date Required: _____ Rush Confirmation # _____	
---	--	--	--	---	--	--	--

Laboratory Use Only				Analysis Requested															Regulatory Requirements															
CUSTODY SEAL Y / N	COOLER TEMPERATURES			AVERAGE TEMP	INTEGRITY YES / NO	INTEGRITY CHECKLIST BY:	# OF CONTAINERS SUBMITTED	FIELD FILTERED & PRESERVED	Lab Filtration Required	RCAP-30 (CIRCLE) TOTAL / DISSOLVED	RCAP-MS (CIRCLE) TOTAL / DISSOLVED	Metals (Water)			Metals (Soil)			Mercury	Mercury & 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)	BBCA Hydrocarbons (BTEX, C6-C12)	Hydrocarbons Soil (Potable), MS Fuel Oil Spill Policy Low Level BTEX, C6-C12	NB Potable Water BTEX, VPH, Low Level T.E.H	PAHS	FWAL PAHS in water (with Acridine, Quinoline)	PCBS	VOCs	SILICA gel.	HOLD-DO NOT ANALYZE	<input type="checkbox"/> PIRI <input type="checkbox"/> CCME <input type="checkbox"/> Tier 1 <input type="checkbox"/> Tier 2 <input type="checkbox"/> OTHER (Please Specify)		
	Present	Intact																																

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	Total Digest (Default Method) for well water & surface water	Dissolved for ground water	Mercury	Mercury & 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)	BBCA Hydrocarbons (BTEX, C6-C12)	Hydrocarbons Soil (Potable), MS Fuel Oil Spill Policy Low Level BTEX, C6-C12	NB Potable Water BTEX, VPH, Low Level T.E.H	PAHS	FWAL PAHS in water (with Acridine, Quinoline)	PCBS	VOCs	SILICA gel.	HOLD-DO NOT ANALYZE	COMMENTS	
1	CWT-TP105-BS1			2017/11/07		Soil																							
2	CWT-TP106-BS2														X														
3	CWT-TP107-BS1																		X										
4	CWT-TP108-BS1																		X										
5	CWT-TP109-BS2																		X			X							
6	CWT-TP110-BS2																		X										
7	CWT-TP111-BS1																		X										
8																			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 #

APPENDIX H

NCSCS Evaluation Form

**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>i.e.</i> , 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>i.e.</i> , 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 explosive hazards and measurement of lower explosive limits.

**CCME National Classification System for Contaminated Sites (2008) version 1.3
Pre-Screening Checklist**

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: <i>(or other description of location)</i>	Former US Military Radar Site, Cartwright, Newfoundland and Labrador (NL)	
Site Common Name: <i>(if applicable)</i>	Cartwright Radar Site	
Code identifier: <i>(e.g., FCSI 8-digit identifier)</i>	Not applicable	
Site Owner or Custodian: <i>(Organization and Contact Person)</i>	Government of Newfoundland and Labrador	
Legal description or metes and bounds:	See Drawing No. 121414915-300-EE-02 attached	
Approximate Site area:	Approximately 25 Hectares	
Parcel Identifier(s) [PID]: <i>(or Parcel Identification Numbers [PIN] if untitled Crown land)</i>		
Centre of site: <i>(provide latitude/longitude or UTM coordinates)</i>	Latitude: _53___ degrees _43___ min _29___ secs; Longitude: _56___ degrees _57___ min _54___ 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:	<p>The main area of the Cartwright Radar site is located approximately 4 km to the northeast of the community of Cartwright (refer to Drawing No. 121414915-300-EE-01, attached). The entire site covers a land area of approximately 25 hectares and was operated by the US Military as a General Surveillance Radar Station from 1953 to 1968. As a Ground-Control Intercept and warning station (part of the Pinetree Line), it was used to guide interceptor aircraft towards unidentified intruders picked up by the radar's scopes. The site formerly contained four troposcatter communication antennas, 4 radomes, barracks, power plant, garage, dispensary, heating plant, operations room, fire department and recreational facilities, all located together as an inter-connected complex on the hillside. Near dockside were fuel storage facilities that were connected to the upper POL (petroleum, oils and lubricants) tank by an aboveground pipeline. Solid waste was historically disposed in an unlined landfill to the east of the site that was covered/graded in 1988. Solid waste was also reported as buried/covered in a ravine located between the main site and the main POL tank. In 1968, the US transferred control of the site to the Canadian Government and it was deactivated/closed shortly afterwards. The site was decommissioned in 1987 with the demolishing of the remaining structures/ buildings and the concrete foundations for many structures remain. A limited soil remediation program for PCBs was carried out in 1988 at the former landfill. Current infrastructure on the site are a Bell microwave station and Canadian Coast Guard Navtex and MF Rx communication towers (not the responsibility of the provincial government). See Drawing Nos. 121414915.300-EE-02 to 121414915.300-EE-05 attached.</p>	

**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, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) Surface water: petroleum hydrocarbons, metals Sediment: petroleum hydrocarbons, PAHs, metals
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Please fill in the "letter" that best describes the level of information available for the site being assessed:

Site Letter Grade

If letter grade is F, do not continue, you must have a minimum of a Phase I Environmental Site Assessment or equivalent.

Scoring Completed By:	Paula Brennan
Date Scoring Completed:	19-Dec-17

(I) Contaminant Characteristics

Site: Cartwright Radar 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 2017, petroleum hydrocarbons, polycyclic aromatic hydrocarbon (PAH), volatile organic compounds (VOCs) and/or metal parameters have exceeded applicable provincial and/or CCME guidelines in soil, sediment and surface water. Groundwater was not sampled as part of the assessment (Stantec 2017).	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 Medium Low Do Not Know	High	The relative degree of chemical hazard for cadmium and nickel is high (Stantec 2017).	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. <i>See Attached Reference Material for Contaminant Hazard Rankings.</i>	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.
"Known" -score	8			
"Potential" - score	---			

(I) Contaminant Characteristics

Site: Cartwright Radar 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 "Known" -score "Potential" - score	High (>100x) 6 ---	The ratio of a measured aluminum concentration in surface water (i.e., 3,200 ug/L) is greater than 100x the applicable guideline of 5 mg/kg (CCME Water Quality Guidelines for the Protection of Freshwater Aquatic Life).	Ranking of contaminant "exceedance" is determined by comparing contaminant concentrations with the <i>most conservative media-specific and land-use appropriate CCME</i> 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 immobile or regardless of amount) may be considered unacceptable by some jurisdictions. 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.
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 "Known" -score "Potential" - score	2 to 10 ha or 1000 to 5000 m ³ 6 ---	Contaminated soil 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 between 1,000 and 5,000 cubic metres (Stantec 2017).	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.

(I) Contaminant Characteristics

Site: Cartwright Radar 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	Yes	According to Examples of Persistent Substances as provided in attached Reference Materials, persistent chemicals were detected on site above applicable guidelines (Stantec, 2017).	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.	<i>Examples of Persistent Substances are provided in attached Reference Materials</i>
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 (Stantec, 2017).	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	five or more	Identified contaminants in sediment, soil and surface water are volatile petroleum hydrocarbons, light extractable petroleum hydrocarbons, heavy extractable petroleum hydrocarbons, inorganic substances (metals), VOCs and PAHs (Stantec, 2017).	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.	<i>Refer to the Reference Material sheet for a list of example substances that fall under the various chemical classes.</i>
"Known" - Score	7			
"Potential" - Score	---			

Contaminant Characteristic Total

Raw Total Score- "Known"	33	
Raw Total Score- "Potential"	1	
Raw Combined Total Score (Known + Potential)	34	
Adjusted Total Score (Raw Combined / 40 * 33)	28.1	maximum 33

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Cartwright Radar 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.																			
<p>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.</p> <p>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.</p> <p>ii) Same as (i) except the information is not known but <u>strongly suspected</u> based on indirect observations.</p> <p>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>i.e.</i>, 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).</p>	<p>12</p> <p>9</p> <p>0</p>	<p>Go to potential.</p>	<p>Review chemical data and evaluate groundwater quality.</p> <p>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</p> <p>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.</p> <p>Physical evidence includes significant sheens, liquid phase contamination, or contaminant saturated soils.</p> <p>Seeps and springs are considered part of the groundwater pathway.</p> <p>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.</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>Selected References</p> <p><u>Potable Environments</u></p> <p>Guidelines for Canadian Drinking Water Quality: http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php</p> <p><u>Non-Potable Environments</u></p> <p>CCME. 1999. Canadian Water Quality Guidelines for Protection of Aquatic Life. http://cegg-rcqe.ccme.ca/</p> <p>Compilation and Review of Canadian Remediation Guidelines, Standards and Regulations. Science Applications International Corporation (SAIC Canada), report to Environment Canada, January 4, 2002.</p>															
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.																			
<p>a. Relative mobility of contaminant</p> <p>High</p> <p>Moderate</p> <p>Low</p> <p>Insignificant</p> <p>Do Not Know</p>	<p>Low</p> <p>1</p>	<p>The relative mobilities of the contaminants (petroleum hydrocarbons, inorganic substances (metals), VOCs and PAHs) are low (Stantec, 2017).</p>	<table border="0"> <tr> <td>Organics Koc (L/kg)</td> <td>Metals with higher mobility at acidic conditions</td> <td>Metals with higher mobility at alkaline conditions</td> </tr> <tr> <td>Koc < 500 (<i>i.e.</i>, log Koc < 2.7)</td> <td>pH < 5</td> <td>pH > 8.5</td> </tr> <tr> <td>Koc = 500 to 5000 (<i>i.e.</i>, log Koc = 2.7 to 3.7)</td> <td>pH = 5 to 6</td> <td>pH = 7.5 to 8.5</td> </tr> <tr> <td>Koc = 5,000 to 100,000 (<i>i.e.</i>, log Koc = 3.7 to 5)</td> <td>pH > 6</td> <td>pH < 7.5</td> </tr> <tr> <td>Koc > 100,000 (<i>i.e.</i>, log Koc > 5)</td> <td></td> <td></td> </tr> </table> <p>For PHC fractions; score F1 as Moderate, F2 as Low, and F3 and F4 as Insignificant.</p>	Organics Koc (L/kg)	Metals with higher mobility at acidic conditions	Metals with higher mobility at alkaline conditions	Koc < 500 (<i>i.e.</i> , log Koc < 2.7)	pH < 5	pH > 8.5	Koc = 500 to 5000 (<i>i.e.</i> , log Koc = 2.7 to 3.7)	pH = 5 to 6	pH = 7.5 to 8.5	Koc = 5,000 to 100,000 (<i>i.e.</i> , log Koc = 3.7 to 5)	pH > 6	pH < 7.5	Koc > 100,000 (<i>i.e.</i> , log Koc > 5)			<p>Reference: US EPA Soil Screening Guidance (Part 5 - Table 39)</p> <p>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.</p>
Organics Koc (L/kg)	Metals with higher mobility at acidic conditions	Metals with higher mobility at alkaline conditions																	
Koc < 500 (<i>i.e.</i> , log Koc < 2.7)	pH < 5	pH > 8.5																	
Koc = 500 to 5000 (<i>i.e.</i> , log Koc = 2.7 to 3.7)	pH = 5 to 6	pH = 7.5 to 8.5																	
Koc = 5,000 to 100,000 (<i>i.e.</i> , log Koc = 3.7 to 5)	pH > 6	pH < 7.5																	
Koc > 100,000 (<i>i.e.</i> , log Koc > 5)																			
<p>b. Presence of engineered sub-surface containment?</p> <p>No containment</p> <p>Partial containment</p> <p>Full containment</p> <p>Do Not Know</p>	<p>No containment</p> <p>3</p>	<p>No engineered sub-surface containment is present (Stantec, 2017).</p>	<p>Review the existing engineered systems or natural attenuation processes for the site and determine if full or partial containment is achieved.</p> <p>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.</p>	<p>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.</p> <p>Selected Resources:</p> <p>United States Environmental Protection Agency (USEPA) 1998. Technical Protocol for Evaluating Natural Attenuation of Chlorinated Solvents in Groundwater. EPA/600/R-98/128.</p>															

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Cartwright Radar 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		The confining layer over the groundwater exposure pathway is considered to be 3 m or less (Stantec, 2017).	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).	
	Score			
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		The hydraulic conductivity of the confining layer is considered to be 10-5 to 10-8 cm/s (sand).	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.	
	Score			
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		The precipitation infiltration rate is estimated to be high. The weather station at Cartwright Airport is used as a reference. Cartwright's annual precipitation is approximately 1073.5 mm (Environment Canada, 2017). Surface soil relative permeability is 0.6 for sand. The precipitation infiltration rate is 1073.5 / 1000 x 0.6 = 0.64.	<u>Precipitation</u> 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). <u>Permeability</u> 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
	Score			
f. Hydraulic conductivity of aquifer >10 ⁻² cm/s 10 ⁻² to 10 ⁻⁴ cm/s <10 ⁻⁴ cm/s Do Not Know		Bedrock in the area of the site is igneous rock (granite, quartz monzonite, granodiorite, syenite and minor quartz diorite) in the Grenville Province of the Paleoproterozoic 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, 2017).	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).	
	Score			
Potential groundwater pathway total	7.5	Note: If a "known" score is provided, the "potential" score is disallowed.		
Allowed Potential score	7.5			
Groundwater pathway total	7.5			

CCME National Classification System (2008) version 1.3

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Cartwright Radar 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				
<p>Known concentrations of surface water:</p> <p>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).</p> <p>ii) Same as (i) except the information is not known but <u>strongly suspected</u> based on indirect observations.</p> <p>iii) Meets CWQG or absence of surface water exposure pathway (e.g., Distance to nearest surface water is > 5 km.)</p>	<p>12</p> <p>8</p> <p>0</p> <p>12</p> <p>Score 12</p>	<p>Identified contaminants in surface water exceeding CCME surface water quality guidelines are petroleum hydrocarbons and inorganic substances (metals) (Stantec, 2017).</p>	<p>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, aquatic life, 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.</p> <p>Examples of indirect evidence may include observed staining of sediment and/or river banks, but surface water has not been tested.</p>	<p>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.</p> <p>Selected References: CCME. 1999. Canadian Water Quality Guidelines for the Protection of Aquatic Life http://cegg-rcqe.ccme.ca/ CCME. 1999. Canadian Water Quality Guidelines for the Protection of Agricultural Water Uses (Irrigation and Livestock Water) http://cegg-rcqe.ccme.ca/ 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</p>
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				
<p>a. Presence of containment No containment Partial containment Full containment Do Not Know</p>	<p>Do Not Know</p> <p>Score 3</p>	<p>Skip B if A is complete.</p>	<p>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.</p>	
<p>b. Distance to Surface Water 0 to <100 m 100 - 300 m >300 m Do Not Know</p>	<p>Do Not Know</p> <p>Score 2</p>	<p>Skip B if A is complete.</p>	<p>Review available mapping and survey data to determine distance to nearest surface water bodies.</p>	
<p>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 flat Contaminants above ground level and slope is flat Contaminants at or below ground level and slope is flat Do Not Know</p>	<p>Do Not Know</p> <p>Score 1</p>	<p>Skip B if A is complete.</p>	<p>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.).</p>	
<p>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</p>	<p>Do Not Know</p> <p>Score 0.4</p>	<p>Skip B if A is complete.</p>	<p>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).</p> <p>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").</p>	<p>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</p>

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Cartwright Radar 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 0.5	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.	
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. Strongly suspected that soils exceed guidelines. COPCs in surface soils does not exceed the CCME soil quality guideline or is not present (i.e., bedrock).	12 9 0 12 12	Identified contaminants in surface soils exceeding CCME soil quality guidelines are petroleum hydrocarbons, inorganic substances (metals), VOCs and PAHs (Stantec, 2017).	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://cegg-rcqe.ccm.ca/
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 4	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.
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 3	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).	
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. Strongly suspected (based on observations and/or modelling) 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.	12 9 0 Go to Potential ---	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 necessarily mean that vapours are not an issue at the site. In this case, section B " Potential for COPCs in vapour" should be completed.	
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: Cartwright Radar 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	Moderate	According to the attached Reference Materials, petroleum hydrocarbons (F2) are considered to have moderate volatility.	Reference: US EPA Soil Screening Guidance (Part 5 - Table 36) <i>Provided in Attached Reference Materials</i> For PHC fractions; score F1 as High, F2 as Moderate, and F3 and F4 as Not Volatile. Substance is considered Not Volatile (<i>i.e.</i> , 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://cegg-rcqe.ccme.ca
	Score 2.5			
b. What is the soil grain size? Fine Coarse Do Not Know	Coarse	The soil grain size is considered to be coarse (Stantec, 2017).	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).	
	Score 4			
c. Is the depth to the source less than 10m? Yes No Do Not Know	Yes	The depth to source is expected to be less than 1 m (Stantec, 2017).	Review groundwater depths below grade for the site.	
	Score 2			
d. Are there any preferential pathways? Yes No Do Not Know	Yes	The bedrock on the site is considered to be fractured (Stantec, 2017).	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.
	Score 2			
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.
	Score ---			
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>i.e.</i> , within 5 km of the site there are no aquatic receiving environments, and therefore no sediments).	0			
Score	---			
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)				

(II) Migration Potential (Evaluation of contaminant migration pathways)

Site: Cartwright Radar 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.	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			
c. For rivers, are the contaminated sediments in an area prone to sediment scouring? Yes No Do Not Know	No 0			
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 4	There are two landfills at the site. The buried debris and materials could act as conduits for contaminant migration.	Consult existing engineering reports. Subsurface utilities can act as conduits for contaminant migration.	
Known Potential	4 ---			

Migration Potential Total	
Raw Total Score- "Known"	28
Raw Total Score- "Potential"	22
Raw Combined Total Score (Known + Potential)	50
Adjusted Total Score (Raw Combined / 64 * 33)	25.8

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.

maximum 33

CCME National Classification System (2008) version 1.3

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Cartwright Radar 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*)	22	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 Health 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
Same as above, but "Strongly Suspected" based on observations or indirect evidence.	10			
No quantified or suspected exposures/impacts in humans.	0			
Score	---			
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	Commercial 1	The current and proposed land use is commercial (Stantec, 2017).	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	Access, not covered 2	There is limited barriers to prevent site access and the contaminants are not covered (Stantec, 2017).	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	Yes 3	Direct contact with contaminated surface water, groundwater, sediments or soils is possible (Stantec, 2017).	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: Cartwright Radar Site

Definition	Score	Rationale for Score (document any assumptions, reports, or site-specific information; provide references)	Method Of Evaluation	Notes
<p>ii) inhalation (i.e., inhalation of dust, vapour)</p> <p>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)?</p> <p>Yes No Do Not Know</p> <p>Score</p> <p>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.</p> <p>Fine Coarse Surface soil is not contaminated or absent (bedrock) Do Not Know Texture</p> <p>Score</p> <p>inhalation total</p>	<p>No</p> <p>0</p> <p>Coarse</p> <p>1</p> <p>1</p>	<p>There are no buildings located within 30 m of soils with petroleum hydrocarbon (F2) contamination (Stantec, 2017).</p> <p>Contaminated surface soil is considered to be coarse textured (sand and gravel) (Stantec, 2017).</p>	<p>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), <i>Potential for COPCs in Vapour</i> for a definition of volatility.</p> <p>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.</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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</p>
B. Potential for human exposure				
<p>iii) Ingestion (i.e., ingestion of food items, water and soils [for children]), including traditional foods.</p> <p>Drinking Water: Choose a score based on the proximity to a drinking water supply, to indicate the potential for contamination (present or future).</p> <p>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</p> <p>Score</p> <p>Is an alternative water supply readily available?</p> <p>Yes No Not Applicable Do Not Know</p> <p>Score</p> <p>Is human ingestion of contaminated soils possible?</p> <p>Yes No Do Not Know</p> <p>Score</p> <p>Are food items consumed by people, such as plants, domestic animals or wildlife harvested from the contaminated land and its surroundings?</p> <p>Yes No Do Not Know</p> <p>Score</p> <p>Ingestion total</p>	<p>No drinking water present</p> <p>0</p> <p>Not Applicable</p> <p>0</p> <p>Yes</p> <p>3</p> <p>Yes</p> <p>1</p> <p>4</p>	<p>No drinking water source is anticipated to be present on the site (Stantec, 2017).</p> <p>Not applicable to the site.</p> <p>Human ingestion of contaminated soils is possible (Stantec, 2017).</p> <p>It is possible that plants and wildlife are harvested from the contaminated land and surroundings (Stantec, 2017).</p>	<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>Answer Not Applicable if "No drinking water present" or "No potential for aquifer contamination" was selected in previous question.</p> <p>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.</p> <p>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.</p>	<p>Selected References: Guidelines for Canadian Drinking Water Quality: http://hc-sc.gc.ca/ewh-semt/water-eau/drink-potab/guide/index-eng.php</p> <p>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.</p> <p>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.</p>
Human Health Total "Potential" Score	11	Note if a "Known" Human Health score is provided, the "Potential" score is disallowed.		
Allowed "Potential" Score	11			

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Cartwright Radar 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	There is no strong reliance of local people on natural resources for survival; however, natural resources may be harvested (Stantec, 2017).		
Yes				
No				
Do Not Know				
Human Exposure Modifying Factors - "Known"	6			
Human Exposure Modifying Factors - "Potential"	---			
Raw Human "Known" total	6			
Raw Human "Potential" total	11			
Raw Combined Total Human Score	17			
Adjusted Total Human Score (max 22)	17			
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.ccm.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 <i>A Framework for Ecological Risk Assessment: General Guidance</i> (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			
No quantified or suspected exposures/impacts in terrestrial or aquatic organisms	0			
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		The current and proposed land use is commercial (Stantec, 2017).	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).	
i) Land use				
Agricultural (or Wild lands)			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).	
Residential / Parkland				
Commercial	Commercial			
Industrial	1			
Do Not Know				
Score				
ii) Uptake potential		It is possible that plants and/or soil invertebrates are exposed to contaminated soils at the site (Stantec, 2017).	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.	
Direct Contact - Are plants and/or soil invertebrates likely exposed to contaminated soils at the site?	Yes			
Yes				
No				
Do Not Know				
Score	1			

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Cartwright Radar 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 Score	Yes 1	Terrestrial animals may ingest contaminated water at the site (Stantec, 2017).	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.	
Are terrestrial animals likely to be ingesting contaminated soils at the site? Yes No Do Not Know Score	Yes 1	Terrestrial animals may ingest contaminated soils at the site (Stantec, 2017).	Refer to an Ecological Risk Assessment report. Most animals will co-ingest some soil while eating plant matter or soil invertebrates.	
Can the contamination identified bioaccumulate? Yes No Do Not Know Score	No 0	Petroleum hydrocarbons, PAHs and metals are not expected to bioaccumulate (Stantec, 2017).	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
Distance to sensitive terrestrial ecological area 0 to 300 m 300 m to 1 km 1 to 5 km > 5 km Do Not Know Score	> 5 km 0.5	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_GOVENANCE_20161231.pdf) (Stantec, 2017).	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.
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 Score	Typical 1	The aquatic environment is considered to be typical (Stantec, 2017).	"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.	

(III) Exposure (Demonstrates the presence of an exposure pathway and receptors)

Site: Cartwright Radar 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, 2017).	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.	Environmental receptors include: local, regional or provincial species of interest or significance, sensitive wetlands and fens and other aquatic environments. 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
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	0 to 300 m 3	The Atlantic Ocean is present to the north and east of the site (Stantec, 2017).	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	
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	Petroleum hydrocarbons, PAHs and metals are not expected to bioaccumulate (Stantec, 2017).	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.	
Raw Aquatic "Potential" total	4.5	Note if a "Known" Ecological Effects score is provided, the "Potential" score is disallowed.		
Allowed Aquatic "Potential" total	4.5			
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 2017. Species at risk, including the short eared owl and caribou, could potentially be in the Cartwright area (Stantec, 2017).	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: Cartwright Radar 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).		There's been no known reported evidence of potential impact of aesthetics to receiving water bodies (Stantec, 2017).		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		Documentation may consist of environmental investigation reports, press articles, petitions or other records.	
Yes	0			
No	---			
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, 2017).	Examples of olfactory change can include the smell of a COPC or an increase in the rate of decay in an aquatic habitat.	
Yes	0			
No	---			
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 lakes or water bodies (Stantec, 2017).	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	0			
No	---			
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, 2017).	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	10			
Raw Combined Total Ecological Score	12			
Adjusted Total Ecological Score (Max 18)	12			

5. Other Potential Contaminant Receptors

a) Exposure of permafrost (leading to erosion and structural concerns)		Sporadic permafrost (i.e., less than 30% of the ground surface) may be present at the site (Stantec, 2017). No roads or buildings are suspected to be dependant upon the permafrost for structural integrity.		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	0			
No	---			
Do Not Know	---			
Is there a physical pathway which can transport soils released by damaged permafrost to a nearby aquatic environment?	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.	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	1			
Do Not Know	---			
Other Potential Receptors Total - Known	0			
Other Potential Receptors Total - Potential	1			

Exposure Total		
Raw Human Health + Ecological Total + Other Receptors - "Known"	8	
Raw Human Health + Ecological Total + Other Receptors - "Potential"	22	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)	30	HH or Eco Total score has not yet been capped at 22 and 18, respectively.
Adjusted Total Score (Adjusted Total Exposure / 46 * 34)	22.2	maximum 34

CCME National Classification System (2008) version 1.3

Score Summary

Site: Cartwright Radar 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	6	---
4. Contaminant Quantity	6	---
5. Modifying Factors	7	---

Raw Total Score	33	1
Raw Combined Total Score (Known + Potential)	34	

Adjusted Total Score (Raw Combined Total/40*33) **28.1** (max 33)

II. Migration Potential

	Known	Potential
1. Groundwater Movement	---	7.5
2. Surface Water Movement	12	---
3. Soil	12	---
4. Vapour	---	10.5
5. Sediment Movement	---	4
6. Modifying Factors	4	---

Raw Total Score	28	22
Raw Combined Total Score (Known + Potential)	50	

Adjusted Total Score (Raw Combined Total/64*33) **25.8** (max 33)

III. Exposure

	Known	Potential
1. Human Receptors		
A. Known Impact	---	
B. Potential		
a. Land Use		1
b. Accessibility		2
c. Exposure Route		
i. Direct Contact		3
ii. Inhalation		1
iii. Ingestion		4
2. Human Receptors Modifying Factors	6	---
Raw Total Human Score	6	11

Raw Combined Total Human Score (Known + Potential)	17
Adjusted Total Human Score	17 (maximum 22)

3. Ecological Receptors		
A. Known Impact	---	
B. Potential		
a. Terrestrial		4.5
b. Aquatic		4.5
4. Ecological Receptors Modifying Factors	2	1
Raw Total Ecological Score	2	10

Raw Combined Total Ecological Score (Known + Potential)	12
Adjusted Total Ecological Score	12 (maximum 18)

5. Other Receptors	0	1
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Total Other Receptors Score (Known + Potential)	1
---	---

Total Exposure Score (Human + Ecological + Other) **30**

Adjusted Total Score (Total Exposure/46*34) **22.2** (maximum 34)

Site Score	
Site Letter Grade	D
Certainty Percentage	69%
% Responses that are "Do Not Know"	7%
Total NCSCS Score for site	76.0
Site Classification Category	1

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.