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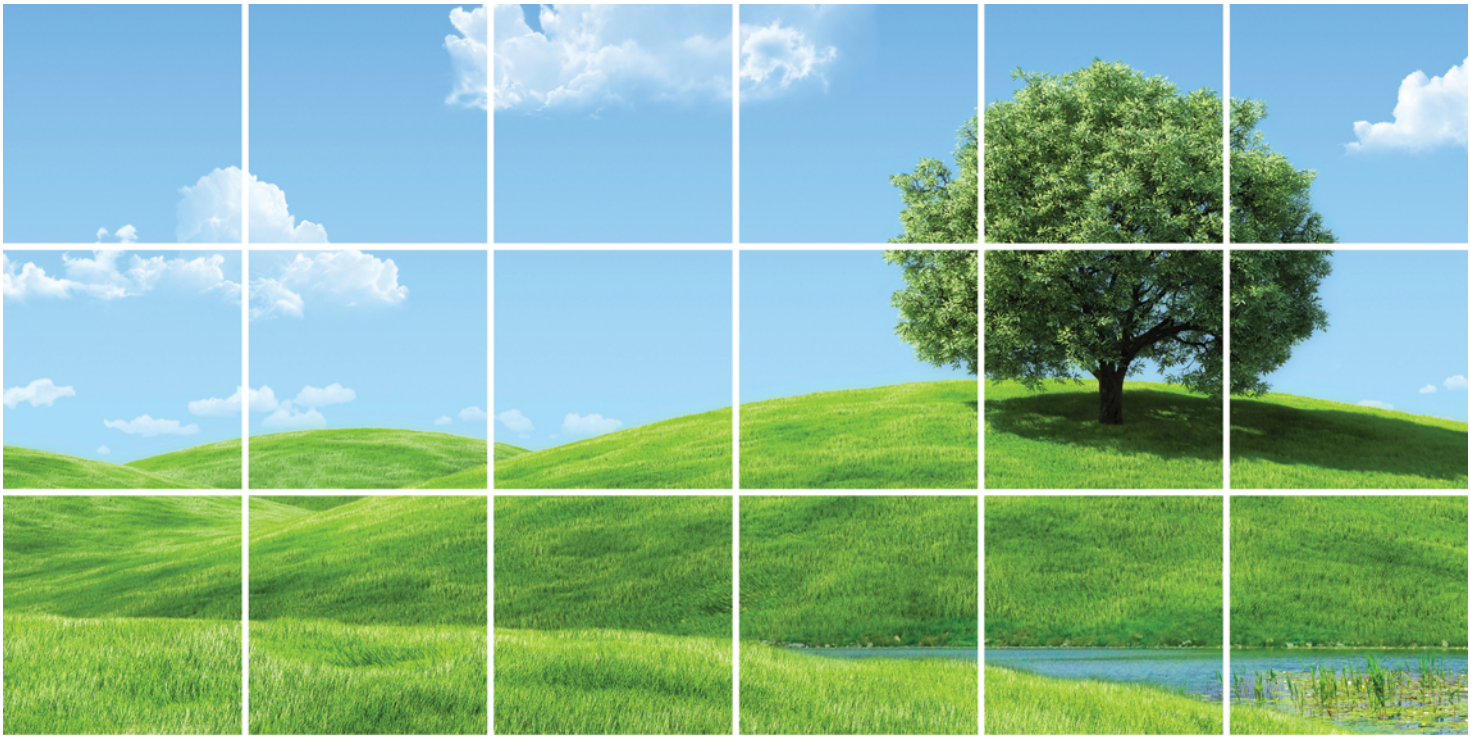

Pre-Existing Environmental Contamination Assessment And Mitigation Plan

Iqaluit International Airport Improvement Project
Iqaluit, Nunavut

Prepared for: Arctic Infrastructure Partners & The Government of Nunavut

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LIST OF ACRONYMS

µg/g	micrograms per gram
µg/L	micrograms per litre
ADS	ADS Group-Conseil Inc.
AIP	Arctic Infrastructure Partners
AST	Aboveground Storage Tank
BTEX	Benzene, toluene, ethylbenzene, and xylenes
CCME	Canadian Council of Ministers of the Environment
COC	Contaminant of Concern
CMP	Pre-Existing Environmental Contamination Management Plan
CRA	Conestoga-Rovers & Associates
DIAND	Department of Indian Affairs and Northern Development
DSHMA	Designated Substance and Hazardous Material Survey
EAA	Environmental Assessment Agreement
EBS	Environmental Baseline Study
EDD	Electronic Data Delivery
EPD	Environment Protection Department (Government of Nunavut)
ESA	Environmental Site Assessment
FTA	Fire Training Area
GN	Government of Nunavut
GNWT	Government of Northwest Territories
LTU	Land Treatment Unit
m	Metre
m^2	Square Metre
m^3	Cubic Metre
mbgs	Metres Below Ground Surface
MOE	Ministry of Environment (Ontario)
MOG	Mineral oil and grease
NAP	National Airports Policy
NDSD	Nunavut Department of Sustainable Development
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PECAMP	Pre-Existing Environmental Contamination Assessment and Mitigation Plan

PHC	Petroleum Hydrocarbon
QA/QC	Quality Assurance/Quality Control
RBC	Risk-based Concentration
SCC	Standards Council of Canada
SOP	Standard Operating Procedures
SQG	Soil Quality Guideline
TC	Transport Canada
TCLP	Toxicity Characteristic Leaching Procedure
TPH	Total Petroleum Hydrocarbons
UFFI	Urea Formaldehyde Foam Insulation
USAF	United States Air Force
VOC	Volatile Organic Compound
WERI	Winnipeg Environmental Remediations Incorporated

1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) has prepared this Pre-Existing Environmental Contamination Assessment and Mitigation Plan (PECAMP) for Arctic Infrastructure Partners (AIP) and the Government of Nunavut (GN). The PECAMP has been prepared in accordance with the following documents:

- Environmental Assessment Agreement (EAA) for the Iqaluit International Airport Improvement Project, Government of Nunavut and Bouygues Building Canada Inc. and Sintra Inc., dated July 8, 2013
- Iqaluit International Airport Improvement Project, Schedule 8, Environmental Obligations, revised draft dated August 19, 2013 (Schedule 8)
- CRA's Proposal for Pre-Existing Environmental Contamination Assessment and Mitigation Plan, dated July 2013 (Proposal)

The scope of work for the PECAMP was developed and implemented to satisfy Appendix A to the EAA. The scope of work consisted of the following activities:

- Task A – Review of Historical Documents and Construction Drawings
- Task B – Initial Site Inspection and Field Investigation Activities
- Task C – Preparation of the Draft PECAMP

The PECAMP provides an assessment of the environmental impacts present in soil and/or groundwater within the proposed areas of the airport improvement activities scheduled to commence in 2014. The airport improvement activities include construction of a new Air Terminal Building, a new Combined Services Building and substantial improvements to the runways, taxiways and aprons (including construction of a new taxiway and expansion/alterations to all of the aprons) and construction of groundside infrastructure including access roads and parking lots, utilities, etc.

This PECAMP will identify the areas within the proposed works where soil and/or groundwater impacts exist at concentrations greater than the applicable environmental standards and require management during the implementation of the Project. The PECAMP will also identify remedial options to manage each of the areas of environmental contamination and provide a recommendation for the preferred remedial option for each area. The PECAMP provides the basis for the Pre-Existing Environmental Contamination Management Plan (CMP), which CRA is concurrently preparing for AIP under separate cover.

1.1 PROJECT BACKGROUND

CRA understands that AIP is a consortium comprised of the following entities: Bouygues Building Canada, InfraRed Capital Partners, Winnipeg Airports Authority and ColasCanada, through its subsidiary, Sintra Inc. (the Consortium). The Consortium retained CRA to prepare the PECAMP and to fulfill the requirements of the EAA for the Project.

1.2 REPORT ORGANIZATION

This report is organized into the following sections:

- Section 1.0 defines the purpose of the PECAMP and reviews the project organization
- Section 2.0 provides an overview of the Site setting, a detailed review of the extent of historical contamination, and the applicable guidelines
- Section 3.0 discusses the scope of the PECAMP
- Section 4.0 discusses the field activities completed and a summary of the results
- Section 5.0 identifies the areas requiring remedial action
- Section 6.0 discusses the remedial options for each area of environmental contamination
- Section 7.0 provides an overview of the CMP
- Section 8.0 provides the references for this report

2.0 SITE BACKGROUND

2.1 SITE SETTING AND HISTORY

The Site is located at 1126 Mivvik Street in Iqaluit, Nunavut (Site), and occupies approximately 538 hectares of land. A Site location map is presented on Figure 1.

The Site is located at the head of Frobisher Bay on southern Baffin Island between the Sylvia Grinnell River and Koojesse Inlet. The Site was developed by the United States in the 1940s to facilitate transportation from the United States to Europe by way of Canada, Greenland and Iceland. The Government of Canada purchased the airport's infrastructure in 1944, and retained ownership and operation of the Site. Transport Canada (TC) took over the Site operations in 1957.

TC issued the National Airports Policy (NAP) in 1994, and its major initiative was to transfer the regional/local airports to provincial and territorial governments. In July 1995, the ownership of the Site was transferred to the Government of Northwest Territories (GNWT) and operated by the Arctic Airports Division of the Department of Transportation. The Site was then transferred to the GN in April 1999, and operated by the Nunavut Airports Division of the Nunavut Department of Community Government, Housing and Transportation. As a condition of the Arctic A Airport Transfer Agreement (July 1995), environmental contamination was to be remediated prior to the transfer of the Site to the GN. A series of Environmental Site Assessments (ESAs) were completed in the 1990s to investigate Site impacts. Environmental investigations and remedial activities were completed from the 1990s to present. The following section summarizes the Pre-Existing Environmental Contamination and remedial activities identified in the proposed Project work areas.

Historical soil investigations indicate that the soil units underlying the Site are comprised of sand and gravel with some rocks above a continuous permafrost layer. Permafrost has been historically encountered from 0.8 to 2 metres below ground surface (mbgs). The permafrost layer acts as a confining layer to spring thawing conditions, and groundwater is encountered in isolated locations. Groundwater flow direction varies depending on surrounding topography, but generally flows to the south towards Frobisher Bay.

2.2 EXTENT OF HISTORICAL CONTAMINATION

Various environmental investigation and remediation projects have been completed at the Site since the 1990s. The Consortium provided CRA with electronic copies of historical environmental documents (67 documents) that have been prepared for the Site. CRA reviewed each of these documents to identify the location of areas of Pre-Existing Environmental Contamination and to determine if there were any areas of potential environmental contamination not identified in the historic documents. A list of the documents provided to and reviewed by CRA is included as Appendix A. Figure 2 provides a Site plan designating the areas of known or potential environmental contamination located within the Project area based on the document review.

As noted above, soil and groundwater investigations were completed at the Site in the 1990s in response to the NAP. The NAP stipulated that TC must complete environmental investigations and required remedial actions prior to the Site transfer from TC to the GNWT. TC retained M.M. Dillion Limited (Dillion) to complete an Environmental Baseline Study (EBS) of the Site in 1995, which would fulfill the NAP requirements.

The purpose of the EBS was to assess the environmental conditions on Site and to propose remedial actions to address and/or mitigate the soil and groundwater impacts identified. Dillion identified various areas containing environmental impacts, which are described in the following sections. Soil and groundwater investigations completed as part of the EBS were conducted in July 1993 (ADS Group-Conseil Inc. [ADS]), in July 1994 and February 1995 (Biogénie), and in June 1995 (Dillion).

For the purpose of this report, CRA has summarized the areas of potential and known environmental contamination identified in the EBS that are located within the Project area. These areas include: the former asphalt plant and associated drum caches (Drum Cache 1 and Drum Cache 2), the Fire Training Area (FTA) (also referred to as the Fire Fighting Training Area in historical reports), the United States Air Force (USAF) Tank Farm area, the airside refuelling area (previously operated by Shell Canada Products [Shell]), and the Abandoned Hydrant and Distribution System.

Following the EBS, a series of remedial investigations and remedial actions were completed between 1995 and 1999. In 1999, Dillion completed an EBS Reaudit of the Site to review the Site conditions and assess if the remedial actions were sufficiently completed in accordance with the recommendations in the EBS. The following sections provide an overview of the EBS and environmental investigations and remedial actions completed in each of the areas of potential or known environmental contamination.

Former Asphalt Plant and Abandoned Drum Caches

An asphalt plant was previously situated north of Apron 1. The former asphalt plant was used to produce bituminous asphalt for the airport runway and taxiway construction. Two abandoned drum caches associated with the former asphalt plant were located north of (Drum Cache 1) and south of (Drum Cache 2) the former asphalt plant.

Drum Cache 1 historically contained more than 700, 205-litre drums, which had been in place since the former asphalt plant was abandoned. The majority of the drums contained asphalt/tar products, while other drums were marked with military identifiers and contained lubricating oils and diesel fuels. One drum contained an unidentified white powder. Several drums were punctured or were damaged from exposure to the elements. An aboveground storage tank (AST) containing an oil/water mixture was left in Drum Cache 1 (Dillion, 1995). CRA anticipates that the AST mentioned in the historic report is the tank that was observed by CRA in this area during the 2013 Site inspection.

An area adjacent to Drum Cache 1 contained 13, 205-litre drums that contained a foam compound and Essolube HD30. Several of the drums were in poor condition and were leaking to the ground surface in 1995. Piles of scrap metal and gravel were placed adjacent to these drums (Dillion, 1995), which was still in place at the time of CRA's 2013 Site inspection.

Drum Cache 2 was reportedly located south of the former asphalt plant and to the north of the FTA during the EBS (Dillion, 1995). There were two distinct areas of drums in this area:

- One area contained approximately 2,500, 205-litre drums stored horizontally. The drums were unmarked; however, the drums likely contained asphalt products. The drums were in poor condition, and product was leaking from the drums to the ground surface. There was no secondary containment in place for the drums.
- The second area contained approximately 700, 205-litre drums staged on pallets, with the drums stacked three high. The drums were in good condition; however, some of the drums had ruptured and were leaking to the ground surface. There was no secondary containment in place for the drums.

Soil and groundwater investigations completed in 1994 and 1995 identified the presence of hydrocarbon odour during groundwater sampling activities and surficial staining on the ground surface in the vicinity of the former asphalt plant and Drum Caches 1 and 2 (Biogénie, 1994). One soil sample collected in 1994 in the vicinity of the former asphalt plant contained 5,700 micrograms per gram (µg/g) of Total Petroleum Hydrocarbons (TPH), which was greater than the 1994 GNWT standard[1] (2,500 µg/g) (Biogénie, 1994). Groundwater samples collected in the area had a notable hydrocarbon sheen. Mineral oil and grease (MOG) was detected at 13,000 micrograms per litre (µg/L) in the groundwater sample collected from a monitoring well installed in Drum Cache 2. In the absence of 1994 GNWT or 1991 Interim Canadian Council of Ministers of the Environment (CCME)[2] standards for MOG, Biogénie compare the MOG results to the GNWT water quality objective[3] for effluent discharge from a municipal sewer system (5,000 µg/L) for comparison purposes. Analytical results indicate that one or more concentration of copper, lead, zinc, cadmium, chromium and nickel were detected above the 1994 GNWT and 1991 Interim CCME standards in all groundwater samples collected in the vicinity of the former asphalt plant and drum caches.

Biogénie estimated that there were two areas of impacted soil: one area was 15 m by 15 m to a depth of 0.1 mbgs, and impacted with bitumen; and the second area was 5 m by 5 m to a depth of 1.6 mbgs, and impacted with diesel fuel (Biogénie, 1994). In 1995, Biogénie refined their estimated area of impacted soil, and estimated that an area of 20 m by 20 m to a depth of 1.6 mbgs was impacted with TPH (Biogénie, 1995). This impacted area was located south of the former asphalt plant (CRA infers that this may be Drum Cache 2).

During the EBS Reaudit, Dillion confirmed that there had been no environmental investigation nor remedial activities completed in the vicinity of the former asphalt plant or of the Drum Caches 1 and 2 between 1995 and 1999 (Dillion, 1999).

In 2007, Winnipeg Environmental Remediations Incorporated (WERI) completed removal of drums and miscellaneous debris in the Abandoned Sea-Can Area (CRA infers that this may be Drum Cache 2). WERI removed 92 metal drums containing waste oil, 6 drums of flammable liquids (likely fuel), 16 empty drums, and miscellaneous items

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1 Northwest Territories Renewable Resources, GNWT, 1994. Environmental Guidelines for Site Remediation, draft copy, (1994 GNWT standards).

2 Interim Canadian Environmental Quality Criteria for Contaminated Sites, Report CCME EPC-CS34, The National Contaminated Sites Remediation Program, CCME, September 1991. (1991 CCME standards).

3 Guidelines for the Discharge of Treated Municipal Wastewater in the Northwest Territories, GNWT Water Board, 1992.

(i.e., vehicular batteries, fire extinguishers, scrap metal, etc.) from the Abandoned Sea-Can Area (WERI, 2008). WERI also excavated approximately 270 cubic metres (m^3) of petroleum impacted soil from the Sea-Can area. The excavation was approximately 15 m by 15 m to an average depth of 1.2 mbgs. The impacted soil was transported to a Land Treatment Unit (LTU) located on Site (WERI did not specify which LTU the soil was placed in). WERI completed confirmatory soil sampling of the excavation and all concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX), petroleum hydrocarbons (PHC) F1-F4, TPH and lead were less than the applicable 1999/2001 CCME[4] and 2003 GNWT standards[5]. WERI also removed approximately 300 cylinders of tar grit additive and 15 wire storage cages for the Abandoned Bitumen Drum Cache Area (WERI, 2008).

In 2008, approximately 1,400 drums were stockpiled in a 65 m by 25 m area with a 0.5 m berm in the Abandoned Bitumen Drum Cache (WERI, 2008). The majority of the drums contained asphalt-related materials while some drums contained a foam compound. The integrity of the drums varied. 874 drums were full of asphalt product. Approximately 525 empty or partially empty drums were removed from the Site. The contents of the partially full drums was transferred to a reservoir and amounted to 14,100 litres of product. The drum contents were ultimately shipped off Site for disposal.

WERI excavated approximately 1,150 square metres (m^2) of impacted soil to a maximum depth of 0.75 mbgs. The soil was impacted with asphalt product. The excavated soil was transported off Site for disposal. Based on WERI's field observations and results, residual PHC soil impacts are present in the soil further north of WERI's excavation area. As directed by TC, soil impacts were left in place. WERI completed confirmatory soil sampling and analyzed the soil samples for BTEX, PHC F1-F4, TPH and select metals. All soil results were less than the 2002 Nunavut Department of Sustainable Development (NDSD) standards[6], 1999 CCME standards, and 2001 CCME PHC standards[7], except for one base soil sample collected from the southern limit of the excavation ("IF-6"), which contained 1,400 µg/g PHC F2, 1,800 µg/g PHC F3 and 4,600 µg/g TPH. The applicable 2002 NDSD and 1999 CCME standards for PHC F2, PHC F3 and TPH were 760 µg/g, 1,700 µg/g and 2,500 µg/g, respectively.

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4 Canadian Environmental Quality Guidelines Summary Tables, CCME, 1999, with updates (1999 CCME standards)

5 Environmental Guideline for Contaminated Site Remediation (for industrial site), GNWT, 2003

6 Environmental Guideline for Site Remediation, NDSD, 2002 (2002 NDSD guidelines)

7 Canada-Wide Standards for Petroleum Hydrocarbons in Soil (for Tier 1 Industrial Land Use for coarse textured soils), CCME, 2001 with updates, (2001 CCME PHC standards)

Upon review of all information provided to CRA regarding the former asphalt plant and the abandoned drum caches, CRA understands that no further remediation activities have been undertaken in this area. CRA understands that residual contamination remains in place in Drum Cache 1, and that soil and groundwater contamination is likely present in the areas of the former asphalt plant and Drum Cache 2. Additionally, as observed during CRA's 2013 Site inspection, there are approximately 300 drums, miscellaneous debris (i.e., scrap metal, etc.) and an AST remaining in the vicinity of Drum Cache 1.

Fire Training Area/ Fire Fighting Training Area (FTA)

The FTA was used prior to 1990/1991. A mock-up area and bulk storage tanks remained adjacent to the FTA until at least 1995 and were subsequently removed. During the EBS, the mock-up area was a bermed area. Surficial staining was observed both inside and outside of the bermed area in 1995. Approximately 250, 205-litre drums containing waste fuel were temporarily stored in the FTA until at least 1995. The drums were reportedly in poor condition and were likely leaking to the ground surface. Abandoned ASTs (2,270 litres and 9,100 litres) were observed in the FTA in 1995. Residual product remained in the 9,100- litre AST and surficial staining was observed in the vicinity of the tank in 1995 (Dillion, 1995). Both ASTs were removed from the FTA between 1995 and 1999, as they were not on Site during the EBS Reaudit (Dillion, 1999). No additional information was provided to CRA regarding the decommissioning of the mock-up area or the removal of the bulk storage tanks and ASTs.

Soil and groundwater investigations completed in 1994 and 1995 identified the presence of PHC odour and surficial staining on the ground surface in the vicinity of the FTA (Biogénie, 1994). Three soil samples collected from the FTA in 1994 contained 4,000 µg/g, 5,500 µg/g and 9,200 µg/g of TPH, which was greater than the 1994 GNWT standard (2,500 µg/g). Two soil samples collected from the FTA in 1994 contained 81 µg/g and 72 µg/g of xylenes, which was greater than the 1994 GNWT standard and 1991 Interim CCME standards of 50 µg/g (Biogénie, 1994). Naphthalene was detected at 20,000 µg/L and 120,000 µg/L in two groundwater samples collected from monitoring wells installed in the FTA. There were no 1994 GNWT and 1991 Interim CCME standards for naphthalene. MOG was detected at 12,000 µg/L and 9,500 µg/L in two groundwater samples collected from monitoring wells installed in the FTA. In the absence of 1994 GNWT and 1991 Interim CCME standards for MOG, Biogénie used the GNWT water quality objective for effluent discharge from a municipal sewer system (5,000 µg/L) for comparison purposes. One or more concentrations of copper, lead, zinc, cadmium, chromium and nickel detected in groundwater samples collected from monitoring wells installed in the FTA were greater than the 1994 GNWT and 1991

Interim CCME standards. Biogénie estimated that an area of approximately 15,680 m^2 to a maximum depth of 0.2 mbgs contained impacted soil in the FTA (Biogénie, 1995).

During the EBS, three stockpiles of impacted soil were present in the FTA. Two of the soil stockpiles were owned by First Air and Canadian North. The stockpiles from First Air and Canadian North were contaminated with fuel oil from releases of heating oil tanks. The third stockpile was temporarily stored in the FTA by Shell. All soil stockpiles were bermed and covered with tarpaulin sheeting (Dillion, 1995). During the EBS Reaudit, the impacted soil in the First Air and Canadian North soil stockpiles were still in place in 1999 while the third soil stockpile was removed circa 1995. CRA infers that the impacted soil in the Shell stockpile was transferred to a LTU in the Shell Tank Farm, located off Site and south of the Site.

TC constructed two LTUs on the southeast side of the FTA in 1999. LTU1 was constructed 40 m by 113 m to a depth of 1 m, while LTU2 was constructed 32 m by 70 m to a depth of 1 m. Each LTU was bermed and lined with a geosynthetic liner. Impacted soil excavated during remedial activities conducted in the FTA and USAF Tank Farm was placed in the LTUs. The First Air and Canadian North soil stockpiles were placed in the LTUs for remediation purposes.

In 2000, TC completed sampling activities at LTU1 and LTU2 as a part of the monitoring program for the LTUs. One composite sample was collected from the soil undergoing treatment within each LTU and was analyzed for BTEX, total purgeable hydrodcarbons, total extractable hydrocarbons, metals, phenols, polychlorinated biphenyls (PCBs), pesticides and salinity. Analytical results indicate elevated concentrations of total purgeable hydrocarbon and total extractable hydrocarbon compounds, though no criteria were available for comparison (TC, 2001).

A third LTU was constructed by TC sometime after 1999. No information was provided to CRA regarding the construction of the third LTU or the origin of the soil that was placed in the third LTU.

In 2011, Biogénie was retained by TC to decommission the third LTU. Analytical results from soil samples collected within the LTU identified concentrations of various parameters in soil above applicable standards and the soil was subsequently excavated and transported to LTU1 and LTU2. Analytical results from the soil samples collected from beneath the geosynthetic liner identified concentrations of PHC F2 and naphthalene above applicable standards. PHC F2 was detected at concentrations of 640 µg/g and 300 µg/g in two soil samples collected, which were greater than the 2008

CCME standard[8] (20 µg/g). Naphthalene was detected in one soil sample collected at a concentration of 0.26 µg/g, which was greater than the CCME Human Health standards[9] (0.013 µg/g) (Biogénie, 2012). One groundwater sample was collected from a monitoring well located adjacent to the third LTU. The groundwater sample was analyzed for BTEX, PHCs, polycyclic aromatic hydrocarbons (PAHs) and metals. Analytical results indicate that the groundwater sample contained concentrations of aluminum, copper, iron and lead greater than the CCME Groundwater Management standards[10]. Biogénie concluded in their 2011 report that further site assessment work would be required to delineate the extent of residual contamination in groundwater. The decommissioned LTU was not backfilled and the geosynthetic liner was disposed of at the City of Iqaluit Waste Management Facility/Landfill in Iqaluit, Nunavut (City landfill).

Upon review of information provided to CRA, it can be concluded that full delineation activities were not completed and that contamination remains in place in the vicinity of the third LTU. No information regarding the quality of soil surrounding LTU1 and LTU2 was provided to CRA.

PCB Storage Area near FTA

There was a PCB Storage area located immediately west of the FTA. Seven PCB containers were stored in this area; three belonging to TC and the other four reportedly to the Department of Indian Affairs and Northern Development (DIAND) (Dillion, 1995). Some of the containers were in poor condition allowing for potential infiltration of water. The containers and equipment were stored in secondary containment, the Airport Fire Department completed monthly inspections, and semi-annual reports were sent to Environment Canada. Environment Canada completed an inspection of the storage area and identified deficiencies in 1992, which were corrected by September 1992. It was recommended in the EBS that the PCB containers be shipped off-Site for disposal (Dillion, 1995).

As observed during the EBS Reaudit, the three TC PCB containers and two DIAND PCB containers had been shipped off Site between 1995 and 1999. No additional information was provided to CRA regarding the PCB storage container disposal. During the EBS Reaudit, only two of the DIAND PCB containers remained on Site. CRA did not observe

8 CCME Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil, 2008
9 CCME Human Health Guidelines based on carcinogenic effects of PAHs (no date provided)
10 CCME Groundwater Management Criteria for Metals in Freshwater, Industrial Land Use (no date provided)

any PCB containers at the Site in 2013 in the FTA. No information regarding the disposal of the DIAND PCB containers has been provided to CRA.

Former United States Air Force (USAF) Tank Farm

The former USAF Tank Farm operated a bulk fuel farm south of Apron 1. The USAF Tank Farm consisted of four 1,000,000-litre bulk storage tanks of fuel products, ten refueling/hydrant pits, associated fueling infrastructure, a former power house (T-296) and former pump house (T-294). The tanks were installed in 1959 and were located within gravel berms. This USAF Tank Farm was a former refueling area for the USAF. The western tank was observed to be leaking during the EBS in 1995 (Dillion, 1995).

In 1993, ADS completed a supplemental soil and groundwater investigation on the Shell infrastructure and buildings at the Site. Géologos had completed the preliminary soil and groundwater investigation in 1992. The Géologos report was not provided to CRA. Shell operated the fuel distribution system, which connected the USAF Tank Farm. Analytical results from soil samples collected (sample depth was not specified in the ADS report) indicate that concentrations of all parameters were less than the 1991 Interim CCME standards, except for two soil samples ("Res-USAF-F-9" and "Res-USAF-F-11"), which contained 22.9 µg/g benzene and 8.48 µg/gbenzene, respectively. The applicable 1991 Interim CCME standard was 5 µg/g. Groundwater samples collected from two monitoring wells ("Res-USAF-F-5" and "Res-USAF-F-9") contained elevated concentrations of TPH (650 µg/L and 13,340 µg/L, respectively). The groundwater sample collected from RES-USAF-F-9 also contained elevated concentrations of toluene (1,061 µg/L) and xylenes (2,155 µg/L). ADS did not compare the groundwater results to any standards (ADS, 1993).

In 1994, ADS estimated volumes of impacted soil in the areas where impact was identified in the 1993 ADS report. ADS estimated that approximately 332 m^3 and 327 m^3 of impacted soil existed in two areas west of the USAF Tank Farm. The excavation areas were estimated to be approximately 400 m^2 to a depth of 0.9 mbgs, and 320 m^2 to a depth of 1.02 mbgs (ADS, 1994).

Soil and groundwater investigations completed in 1994 and 1995 identified the presence of hydrocarbon odour and surficial staining on the ground surface in the vicinity of the USAF Tank Farm (Biogénie, 1994). A soil sample collected in 1994 in the vicinity of the USAF Tank Farm contained 2,700 µg/g of TPH, which was greater than the 1994 GNWT

standard[11] (2,500 µg/g) (Biogénie, 1994). One or more concentrations of copper, lead, zinc, cadmium, chromium and nickel detected in groundwater samples collected from monitoring wells installed in the USAF Tank Farm were greater than the 1994 GNWT and 1991 Interim CCME standards. Based on the investigation, Biogénie estimated that an area of impacted soil to be 10 m by 10 m to a depth of 1.4 mbgs.

During the EBS Reaudit in 1999, Dillion observed that all of the building and infrastructure of the USAF had been decommissioned and removed. No documentation of the USAF Tank Farm removal was provided to CRA, but CRA understands that the USAF Tank Farm was decommissioned and infrastructure was removed in 2000; however, the underground piping and hydrant system remained in place. Empty 205-litre drums and other derelict equipment were observed in the USAF Tank Farm during the EBS Reaudit in 1999 (Dillion, 1999). During the EBS Reaudit, the impacted soil in the USAF was still in place (Dillion, 1999).

In 2000, TC conducted remedial activities at the former USAF tank farm. It is reported that the contaminated soil in the vicinity of the USAF tank farm was excavated and transported to LTU1. Ten soil and four groundwater samples were collected during the remedial activities from the USAF tank farm area. The soil samples were analyzed for BTEX, total purgeable hydrocarbons, total extractable hydrocarbons, metals, phenols, PCBs, pesticides and salinity. The groundwater samples were analyzed for BTEX, total purgeable hydrocarbons and lead. The concentrations of all parameters in the groundwater and soil samples were below the 1999 Health Canada Standards[12].

Airside Refueling Area

In 1993, ADS completed soil and groundwater investigations on all of the Shell infrastructure and buildings at the Site. Shell operated the airside re-fueling area on Site. The soil and groundwater investigation completed in 1993 indicated that there was 0.07 m of free product in a monitoring well ("AV-F-5"), which was adjacent to the re-fueling area. Soil results from an adjacent monitoring well "AV-F-1" were less than the applicable 1991 Interim CCME standards, with the exception of xylene concentrations detected in the groundwater sample (207 µg/L)(ADS, 1993). In July 1993, impacted soil adjacent to the airside refueling area was excavated and impacted groundwater was extracted (ADS, 1993). Information related to the excavation activities and the groundwater extraction was not provided to CRA.

[11] Northwest Territories Renewable Resources, 1994. Environmental Guidelines for Site Remediation, draft copy.

[12] Canadian Drinking Water Quality Guidelines, 6th edition, Health Canada, 1996

TPH staining was observed on the surficial soil near the airside refueling area in 1994 (Biogénie, 1994). There was also PHC odour detected and a PHC sheen observed on the groundwater collected from monitoring wells in the vicinity of the airside refueling area. TPH concentrations detected in the soil samples collected during the monitoring well installation activities in 1994 were less than the laboratory detection limit (100 µg/g) (Biogénie, 1995). No remedial action was proposed in the EBS.

Apron I – Abandoned Hydrant and Distribution System

The Abandoned Hydrant and Distribution System is located beneath Apron I. The system was installed by the USAF to fuel aircrafts, and the system consisted of ten concrete refueling boxes and associated underground piping that were previously connected to the four 1,000,000-litre bulk storage tanks located in the USAF Tank Farm.

An investigation of the soil and groundwater in the vicinity of the system was completed in 1994. A total of six boreholes were advanced and five monitoring wells were installed at the time of the investigation. TPH were detected at concentrations greater than the applicable standard in one soil sample collected. The concentration of TPH was 4,800 µg/g, compared to the 1994 GNWT standard (2,500 µg/g) (Dillon, 2005). Copper, lead and zinc were detected at concentrations greater than the 1991 Interim CCME standards in two groundwater samples. Cadmium and nickel were detected at concentrations greater than 1991 Interim CCME standards in one groundwater sample. The following table summarizes the metals exceedances:

Parameter	*1991 Interim CCME Standard*	*PU-31*	*PO-6*
Cadmium	1.8/0.12	**8.2**	<1
Copper	4	**50**	**1,000**
Nickel	150	<20	**230**
Lead	7	**230**	**13**
Zinc	30	**110**	**1,500**

Notes:
Bold – Concentration exceeds 1991 Interim CCME standard.

In 2004, Dillon was retained by TC to conduct a soil and groundwater investigation in the vicinity of the system. The underground piping component of the system was not investigated in 2004 because engineering drawings of the system were not available at the time of investigation. Twenty-two boreholes were advanced and six monitoring wells were installed to investigate the hydrant boxes; however, groundwater was only encountered in two of the monitoring wells. Toluene was detected at a concentration

greater than the 1999 CCME standards in one soil sample collected from a depth ranging between 1.5 – 2.3 mbgs. The concentration of toluene detected in the soil sample was 35.6 µg/g, which was greater than the applicable 1999 CCME standard (14 µg/g). Tin was also detected in three soil samples at concentrations of 390 µg/g, 367 µg/g, and 374 µg/g, which were greater than the 2002 CCME standard[13] (300 µg/g). The samples were collected at depths ranging from 0.9 to 2.3 mbgs. Toluene and cadmium were detected in a groundwater sample at concentrations of 267 µg/L and 0.2 µg/L, respectively, which were greater than the 2002 CCME standards (215 µg/L and 0.12 µg/L, respectively). PHCs were also present at elevated levels in the groundwater samples; however, there were no applicable standards available at the time of the historical investigation. The 2004 investigation concluded that due to the limited information provided with respect to the underground piping system layout, further impacts may exist in the vicinity of the system (Dillon, 2005).

In 2007, WERI was retained by TC to conduct remediation activities at Apron I in the vicinity of the Abandoned Hydrant and Distribution System. The initial scope of work was to excavate PHC-impacted soil from five identified areas of environmental concern and to remove the 10 concrete hydrant boxes. Upon commencement of excavation activities, TC halted excavation as the volume of impacted soil appeared to be greater than estimated. The scope of work was subsequently revised to include the removal of the hydrant boxes and delineation of PHC-impacted soils (WERI, 2007). The results of this investigation could not be clearly determined as CRA was only provided a partial report.

Upon review of information provided to CRA, full delineation activities were not completed in the area of the Abandoned Hydrant and Distribution System. It is likely that contamination remains in place in the vicinity of the system. Remedial activities were conducted in 2007; however, due to the partial report provided to CRA, the results of the delineation activities could not be clearly determined.

2.3 DESIGNATED SUBSTANCE AND HAZARDOUS MATERIAL SURVEYS

Various designated substances and hazardous material surveys (DSHMS) have been completed at the Site since the 1990s. Designated substances and hazardous materials surveyed at the Site include: asbestos, lead, mercury, silica, ozone depleting substances,

[13] Canadian Environmental Quality Guidelines Summary Tables, CCME, 1999, with updated 2002 (2002 CCME standards)

PCBs, Urea Formaldehyde Foam Insulation (UFFI), mould, benzene, acrylonitrile, arsenic, coke oven emissions, ethylene oxide, isocyanates and vinyl chloride.
For this Report, CRA reviewed the DSHMS that was completed by Genivar Inc. (Genivar) in 2013. The Site buildings that are within the scope of work of the Project include: Building T-25 (a storage shed), Building T-116 ("Field Electrical Centre") and Building T-120 (a storage facility). Genivar completed a DSHMS of these buildings in January 2013 (Genivar, 1996). The following sections provide an overview of each of the buildings and the results of the 2013 DSHMS. For ease of review, CRA has used the same naming convention as Genivar for the areas investigated within each building.

Building T-25 (Storage Shed)

Building T-25 is a storage shed for two road salt dispensing trucks and large quantities of road salt. The storage shed also contains miscellaneous items (i.e., large truck tires, snowmobile, lumber, metal sheeting, debris, etc.). The building consists of three large partitions (defined as Sections A [north section], B [middle section], C [south section] and one small partition [within Section A]). The following table identifies the items that contain designated substances or hazardous materials:

Designated Substance /Hazardous Materials	*Sample Locations in Building T-25*	*Description of Material*
Asbestos	Section C	Floor tiles (gray/black), Floor base for floor tiles (black), approximately 12m^2
Lead	Section A	Wall (green)
Lead	Outside of building	Garage door frame (white)
Lead	Section C	Walls (brown, red, white, green, gray), Ceiling (white), Steel beam (red), Concrete floor (red, orange)
Mercury	Section A	14 Fluorescent bulbs
Mercury	Section C	Thermostat

Building T-116 (Field Electrical Centre)

Building T-116 is referred to as the Field Electrical Centre and contains various airfield electrical equipment and an emergency generator. The building has several rooms (Sections A through F) and consists of a file storage room, a furnace room, and a room with an oil storage tank. Sections A, B and C are the sections on the north corner and center of the building. The following table identifies the items that contain designated substance or hazardous materials:

Designated Substance /Hazardous Materials	*Sample Locations in Building T-116*	*Description of Material*
Lead	Throughout building	Concrete floor (gray)
Mercury	Section A	2 Fluorescent bulbs
Mercury	Section C	Thermostat
PCBs	Sections B and C	Ballast for fluorescent lights
PCBs	Section A	Ballast for fluorescent lights

Building T-120 (Electrical Centre)

Building T-120 is a storage facility and it is divided into three main sections. The two largest sections (Sections A and C) hold miscellaneous items (i.e., boat, snowmobile, chairs, wood, gas cylinders, etc.). The smaller section (Section B) of the building is abandoned and holds miscellaneous items (i.e., plywood, lights, floor tiles, etc.). There is an old furnace still present in the building (Section D), which may have been decommissioned. The following table identifies the items that contain designated substances or hazardous materials:

Designated Substance /Hazardous Materials	*Sample Locations in Building T-120*	*Description of Material*
Asbestos	Section B	Floor tiles (brown/green), approximately 45 m^2
Asbestos	Section D	Wall/Ceiling panels of furnace room (gray), approximately 60 m^2
Lead	Section A and C	Beams (red, white)
Lead	Section A	Walls (beige), Door Frame (red)
Lead	Section C	Ceiling (grey), Concrete floor (yellow, grey, red)
Mercury	Section B	2 Fluorescent bulbs, Numerous broke bulbs
Mercury	Section C	10 Fluorescent bulbs
PCBs	Sections B and C	Ballast for fluorescent lights

2.4 APPLICABLE GUIDELINES

The scope of work carried out for the PECAMP complied with all applicable guidelines, policies, standards and practices including the Environmental Reference Documents listed in Schedule 8.

Based on the Site setting, CRA used the following soil and groundwater quality guidelines to assess the soil and groundwater data collected from the Site in July 2013.

Applicable Soil Standards for the Site:

1. CCME Tier 1 Industrial Guidelines: As presented in "*Canadian Environmental Quality Guidelines Summary Tables, Soil Quality Guidelines for the Protection of Environmental and Human Health, Industrial Land Use*", dated 1999, updated 2011 (CCME, 2011). CCME has recently updated their Soil Quality Guidelines (SQGs) for certain PAHs, as presented in "*Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health- Polycyclic Aromatic Hydrocarbons 2010*" (CCME, 2010).
2. Environment Protection Department (EPD) of the Department of Environment of the GN Tier 1 Criteria for PHC impacts in Surface Soil: As presented in the "*Environmental Guideline for Contaminated Site Remediation*", Department of Environment, Government of Nunavut, dated April 1999, updated January 2002 and March 2009. The EPD developed this guidance document with reference to the CCME document "*Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil*", dated 2001, updated in 2008. The PHC standards are consistent between the two guidance documents. The surface soil depth relates to any soil sample collected less than 1.5 mbgs.

Based on CRA's field observations, the coarse-textured soil standards would apply.

Applicable groundwater standards for the Site:

1. CCME Water Quality Guidelines: As presented in "*Canadian Environmental Quality Guidelines Summary Tables, Water Quality Guidelines for the Protection of Aquatic Life, Freshwater*", dated 1999, updated 2012 (CCME, 2012). CCME does not have any guidelines for groundwater, so CRA has used the CCME Water Quality Guidelines for Freshwater for comparison purposes. The short and long term guidelines were used.

2. Ontario's Ministry of Environment (MOE) Table 3 Standards: As presented in "Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition", dated April 15, 2011, (MOE, 2011). MOE Table 3 Standards for industrial/commercial/community property use for coarse-textured soil were applied.

There are no CCME Water Quality Guidelines applicable for groundwater at this Site. CRA compared the groundwater analytical results to CCME Water Quality Guidelines for the protection of freshwater aquatic life; however, application of these guidelines is conservative for groundwater conditions. There are fewer ecological receptors present in groundwater than in freshwater surface water bodies and a significant dilution factor is taken into account when comparing a groundwater concentration directly to a water quality standard derived for surface water bodies. For comparison purposes, CRA used MOE's Table 3 Standards, as noted above.

3.0 SCOPE OF PECAMP

3.1 SCOPE OF THE PECAMP SITE INVESTIGATION

The scope of the PECAMP is outlined in the EAA and Schedule 8. One of the objectives for the PECAMP was to define the approximate nature and extent of Pre-Existing Environmental Contamination that may be encountered during the Project.

Based on the information provided in Schedule 8, CRA understands that there are different areas of Pre-Existing Environmental Contamination that may be encountered during the airport improvement activities. As stated in Schedule 8, Section 1.3(a) (1), (2), (3), the following Pre-Existing Environmental Contamination is defined as:

1. Pre-Existing Environmental Contamination contained in buildings T116, T25, and T120 as disclosed in the Designated Environmental Report, to the extent such Pre-Existing Environmental Contamination is not different than as disclosed in such report ("Disclosed Pre-Existing Environmental Contamination")
2. Pre-Existing Environmental Contamination disclosed in an Environmental Report, located in an Identified Contaminated Zone and disturbed by Project Co's[14] performance of the Construction or the Services ("Disturbed Pre-Existing Environmental Contamination")
3. To the extent that Project Co is required to handle, manage, store, transport or dispose of Pre-Existing Environmental Contamination pursuant to this Agreement, any Pre-Existing Environmental Contamination that is Released by Project Co or a Project Co Person where such Release was caused or permitted in non-compliance with Environmental Laws or this Agreement ("Mishandled Pre-Existing Environmental Contamination")

The PECAMP investigation was focused on identifying environmental contamination within the areas of the Project. In accordance with AIP and GN direction, CRA completed field investigation activities only in the areas of the Project where soil excavation activities will occur. CRA did not investigate areas outside of the proposed excavation areas, per AIP's direction.

Based on the nature and extent of environmental contamination encountered during the test pitting activities, CRA has developed and evaluated remedial options for each area of environmental contamination that will be disturbed during the Project. As previously noted, the PECAMP will provide the basis for the CMP. The CMP will provide a

[14] Project Co is defined as the Successful Proponent Team in the Environmental Assessment Agreement

conceptual design of the preferred remedial option for each area of environmental contamination to be encountered during the Project.

Prior to CRA conducting the field activities, AIP provided CRA with a detailed Site plan showing the approximated depth of the proposed excavation areas. CRA selected test pit locations and the associated test pit depth to correspond with AIP's proposed excavation plan. Figure 3 provides the location of CRA's test pits and the depth and location of the excavations for the Project. Information pertaining to the scope of the Project was provided to CRA by AIP.

3.2 SITE INVESTIGATION ACTIVITIES

The PECAMP investigation included the following tasks:

- Site inspection of the airport and surrounding properties
- Excavation of test pits in areas of the Project activities
- Collection of soil samples for field screening observations
- Collection of soil samples for chemical analyses of Site specific contaminants of concern (COCs)
- Collection of groundwater samples for chemical analyses of Site specific COCs, where groundwater was encountered in the test pit excavations
- Collection of a sample of black viscous product (hereafter referred to as tar product) from drums located in the vicinity of test pits TP01 and TP32 (drum cache) for waste characterization purposes
- Collection of soil samples from the existing LTUs located in the former FTA
- Surveying of test pit, LTU, and buried asbestos locations
- Analytical testing of soil, groundwater and tar product samples
- Quality assurance and quality control (QA/QC) measures for sample analyses

4.0 INVESTIGATION METHODS

4.1 GENERAL

CRA completed the field investigations in accordance with CCME and EPD protocols, CRA's standard operating procedures (SOPs), and standard industry practice.

Prior to completing the investigation activities, CRA prepared a Site-specific Health and Safety Plan (HASP). The purpose of the HASP was to provide specific guidelines and established procedures for the protection of personnel performing the Site investigations.

Prior to commencing any subsurface investigation work, CRA obtained the appropriate utility clearances for all proposed test pit locations. Nunavut Power and the City of Iqaluit assisted with locating the underground utilities within the vicinity of the proposed test pit locations. CRA obtained utility clearances from GN for all locations located inside the fenced area of the Site.

The following sections describe the sampling and investigation methods that CRA followed during the field activities.

4.2 SITE OBERVATIONS

CRA completed a Site inspection prior to completing the test pit investigations. A photographic log of CRA's inspection is attached as Appendix B. CRA observed the following:

- There are two existing LTUs located in the vicinity of the former FTA. CRA observed that there is a depression/excavation where the partially decommissioned LTU was located. The geosynthetic lining the existing LTUs visible at the time of the Site inspection appeared to be in good condition. There are soil stockpiles located adjacent to the LTUs, which CRA suspects may be soil excavated as part of the LTU construction activities.
- CRA observed a sign that indicates buried asbestos waste in the vicinity of the LTUs. A GN representative indicated that the buried asbestos is packaged in bags. CRA did not find any documentation of the buried asbestos waste in the historical reports provided to CRA, as such CRA could not determine the type and quantity of asbestos waste buried.

- CRA observed several drums (estimated to be in the order of 300, 205-litre drums) in the vicinity of test pits TP01 and TP32 (drum cache). Most of the drums are stacked length-wise and three drums high, while some drums are lying haphazardly around the stacked drums. The majority of the drums contain varying quantities of tar product ranging from residual to full. Some of the drums have been punctured and tar product is leaking on to the ground surface. CRA observed the tar product on the ground surface adjacent to several drums. CRA also observed a punctured tank (approximately 50,000 litres) in the drum cache. CRA is unaware of the volume or nature of the contents in the tank. The historic reports review indicated that an AST containing an oil/water mixture was left in Drum Cache 1 circa 1995. CRA anticipates that the AST mentioned in the historic report is the tank that was observed by CRA during the Site inspection. At the time of the Site inspection CRA was informed that the tar product was used at the former asphalt plant located adjacent to the drum cache. CRA collected a sample of the tar product for characterization purposes. The drums, tank, tar product on the ground surface and surficial soil within the drum cache will have to be removed prior to commencing construction activities in this area.

4.3 TEST PIT EXCAVATIONS

As requested by AIP, CRA retained Kudlik Construction Ltd. (Kudlik) of Iqaluit, Nunavut to complete the test pit excavations and field surveying activities. Kudlik completed the excavations using rubber-tired excavators (John Deere K9-18 and John Deere 710).

AIP and CRA reviewed each test pit location in the field prior to completing the test pit excavation. A GN representative approved the proposed test pit locations within the secured (fenced) area of the airport. CRA completed 31 test pits (TP01 through TP32; TP08 and TP11 were not completed) on July 23 and 24, 2013. As agreed upon with AIP, test pits TP08 and TP11 were removed from the scope of work. Test pit TP08 was proposed to be located in the area of the new Air Terminal Building and AIP concluded that the location of test pit TP07 would sufficiently investigate this area. Test pit TP11 was proposed to be located in the vicinity of the Combined Services Building. AIP confirmed that no subsurface work would be completed in this area, and as such AIP concluded that a test pit excavation was not warranted in this area.

Test pit excavations were advanced to the depth of the proposed Project depths or until permafrost was encountered, whichever was shallower. The test pits were excavated from 0.6 mbgs to a maximum depth of 3.5 mbgs. Table 1 summarizes the depth of each

test pit excavation and the proposed Project excavation depth interval. The stratigraphy encountered in all test pits consisted of sand and gravel.

Kudlik surveyed the test pit locations using a global positioning system. The coordinates for the test pits are provided in Table 2.

4.4 SOIL SAMPLING

Based on CRA's field observations, all soil encountered was sand or gravel, and as such is classified as coarse-grained soil.

CRA collected a sample of the tar product (sample id: ASP), which had leaked from a punctured drum onto the ground surface. The ASP sample was analyzed for toxicity characteristic leaching procedure (TCLP) for waste characterization. CRA also collected a soil sample (TP32) from immediately below the tar product to determine the vertical extent of the soil impacts.

CRA implemented the following protocol during sample collection:

- CRA collected all soil samples from the excavator bucket in accordance with CRA's SOP and using the required sampling techniques in accordance with CCME guidelines. CRA ensured that nitrile sampling gloves were changed between each test pit excavation to avoid cross contamination of soil samples.
- CRA filled laboratory-supplied containers specific to the analytical parameters.
- CRA stored the samples in shipping coolers chilled with bagged ice, and submitted the samples to First Air for cargo transport to Maxxam Analytics (Maxxam) in Ottawa, Ontario. First Air temporarily stored the coolers in a refrigerated area until the coolers were shipped.
- CRA sealed coolers with custody seals and under chain-of-custody protocol.

All samples were accompanied by a completed chain-of-custody form. The sample identification numbers and required analyses were listed on the chain-of-custody form. When transferring the possession of samples, the individuals relinquishing and receiving the samples signed and recorded the date and time on the form.

4.5 FIELD SCREENING MEASUREMENTS AND OBSERVATIONS

CRA screened selected soil samples collected from the test pits based on visual and olfactory signs of impact. CRA collected at least one grab soil sample per test pit for laboratory analyses of the Site COCs. The soil sample was collected, in order of preference, as follows:

1) Containing evidence of visual and/or olfactory impact
2) Just above the groundwater table
3) At the terminus of the test pit (in the event that groundwater was not encountered)

If CRA observed evidence of impact at a sample location, CRA collected a second soil sample at the base of the test pit, and where evidence of impact was no longer observed.

CRA observed dark staining on the soil encountered at test pit TP24 at 0.6 mbgs. CRA collected a soil sample from this interval and a second soil sample at 1.6 mbgs for analyses of the Site COCs. CRA did not observe visual evidence of impact at any other test pit location.

CRA observed a PHC odour during the excavation of test pit TP21. CRA did not observe any visual evidence of impacts at test pit TP21. PHCs were not detected at concentrations greater than the applicable soil standards in the soil sample collected from test pit TP21.

4.6 GROUNDWATER SAMPLING

Groundwater was encountered in two test pit excavations; test pits TP06 and TP12 at 1.10 mbgs and 0.6 mbgs, respectively.

CRA did not observe a sheen or any evidence of product on the groundwater (i.e., light or dense non-aqueous phase liquid) encountered at test pits TP06 and TP12.

CRA adhered to the following protocol during the collection of grab groundwater samples:

- CRA collected groundwater samples from the excavator bucket and filled the laboratory-supplied containers specific to the analytical parameters.
- CRA stored the samples in shipping coolers chilled with bagged ice, and submitted the samples to the First Air for cargo transport to Ottawa, Ontario. First Air held the coolers in a refrigerated unit until shipment.
- CRA sealed coolers with custody seals and under chain-of-custody protocol.

CRA acknowledges that the collection of grab groundwater samples from an excavator bucket is not the most representative groundwater collection methodology for determining dissolved concentrations of COCs; however, based on the Project schedule and the general lack of groundwater present above the permafrost layer, the installation and sampling of monitoring wells was not practical for this scope of work. As such, the analytical results from the grab groundwater samples are being used as a general indication of the quality of groundwater that will be encountered during the excavation works associated with the Project. CRA believes that based on the Site conditions and scope of the Project, that the groundwater data collected during the PECAMP reasonably provides an indication of the quality of groundwater that AIP will encounter during the Project works.

4.7 QUALITY ASSURANCE/QUALITY CONTROL

CRA collected one field duplicate for approximately every 10 soil samples collected.

Samples were assigned a unique sample identification number, placed in a laboratory-supplied sampling container, and placed in shipping coolers containing bagged ice immediately following sample packaging.

All soil samples collected were analyzed by Maxxam, an analytical laboratory accredited by the SCC (Standards Council of Canada). Maxxam's standard procedure for the frequency of analysis of quality control samples is for every 20 samples submitted for analysis there is a method blank, Control Verification Standard or Laboratory Control Sample, and a duplicate analyzed. Where applicable, matrix spikes were also analyzed with a batch of samples.

A CRA chemist performed an internal QA/QC check of the analytical results provided by the laboratory.

Upon receipt of the analytical results from the laboratory, the data was extracted from an electronic data delivery (EDD) file into a CRA-managed database created for this project. The database was updated with the data qualifications identified by the CRA chemist.

CRA field personnel documented all sampling activities in a field logbook, including sample identification, sample location including depth, and number of containers per sample.

4.8 ANALYTICAL TESTING

CRA submitted soil, tar product, and groundwater samples under chain of custody protocols to Maxxam in Ottawa, Ontario for chemical analyses of the Site COCs. Maxxam sent all soil and tar product samples and select groundwater samples to the Maxxam lab in Mississauga, Ontario. Select groundwater samples were sent to the Maxxam lab in Edmonton, Alberta.

Copies of all the analytical laboratory reports are provided in Appendix C.

4.9 SOIL QUALITY

CRA analyzed all soil samples for the following COCs: volatile organic compounds (VOCs) (including BTEX), PAHs, metals, PHC F1-F4, PCBs and general chemistry parameters.

CRA collected 36 soil samples (including two field duplicates) for laboratory analyses on July 23 and 24, 2013. The soil analytical data compared to the CCME Soil Quality Guidelines for the Protection of Environmental and Human Health (CCME Tier 1 Guidelines) and the EPD Tier 1 Criteria for PHCs in surface soils are provided in Table 3. Based on CRA's field observations, the coarse-textured soil standards apply. The sample locations are shown on Figure 4.

All soil samples contained concentrations of analytes less than the CCME Tier 1 Guidelines, with the following exceptions:

- The soil sample collected from test pit TP15 at 0.8 mbgs contained 100 µg/g of arsenic, which is greater than the CCME Tier 1 Guideline (12 µg/g). There are no historical reports documenting previous work or site activities completed in the vicinity of test pit TP15. The nature and extent of the arsenic is unknown.
- The soil sample from test pit TP32 at 0.15 mbgs was collected immediately beneath an area of tar product that leaked from a punctured drum located within the drum cache. The soil sample contained 0.31 µg/g of ethylbenzene, which is greater than the CCME Tier 1 Guideline of 0.082 µg/g.
- Soil samples collected from LTU1, LTU2 and test pit TP24 contained concentrations of PHC F2 at 1,000 µg/g, 2800/3000[15] µg/g, and 1,300 µg/g, respectively, which are greater than the DEP Tier 1 Criteria (260 µg/g). The soil sample collected from LTU2 also contained 1,800/2,300 µg/g PHC F3, which is greater than the DEP Tier 1 Criteria of 1,700 µg/g. The PHC concentrations detected in the soil samples collected from the LTUs or adjacent to the LTUs indicate that there are residual PHC impacts in the soil and that full bioremediation of the soil in the LTUs has not been achieved.

The locations of the above-noted soil standard exceedances are provided on Figure 4.

The results of the TCLP analysis of the drum contents sample (ASP) are presented in Table 4.

4.10 GROUNDWATER QUALITY

CRA collected grab groundwater samples from test pits TP06 and TP12 for laboratory analysis on July 23, 2013. The sample locations are shown on Figure 4. CRA analyzed the groundwater samples for the following potential COCs: VOCs (including BTEX), PAHs, metals, PHC F1-F4, PCBs, and general chemistry parameters. The groundwater analytical data compared to the CCME Water Quality Guidelines and the MOE Table 3 Standards are provided in Table 5.

[15] Field duplicate samples.

All detected concentrations in the groundwater samples were less than the MOE Table 3 Standards with the following exceptions:

- PAHs were detected in the grab groundwater sample collected from test pit TP06 at concentrations greater than the MOE Table 3 Standards. The concentrations of benzo(a)pyrene, benzo(b)fluoranthene/benzo(j)fluoranthene, benzo(g,h,i)perylene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-cd)pyrene were slightly greater than the MOE Table 3 Standards. These analytes adsorb to soil particles and given the sample collection methodology (not filtered, collected from an excavator bucket), the groundwater samples analyzed will have had a high sediment content; thus the PAH concentrations detected are not necessarily an accurate reflection of PAH concentrations dissolved in the groundwater.

The location of the above-noted groundwater standard exceedances are provided on Figure 4.

5.0 AREAS REQUIRING REMEDIAL ACTION

Based on the historic reports review and the field investigation activities conducted at the Site, CRA identified six areas where environmental contamination is located within the Project area and will be encountered during the implementation of the proposed Project works. CRA identified the areas of environmental contamination based on comparing the soil and groundwater analytical results to the applicable standards (CCME guidelines, DEP criteria or MOE standards, as discussed in Sections 4.9 and 4.10). The extent of the contamination has not been fully delineated but is reasonably approximated herein based on the data available and CRA's inspection of the Site conditions. Pre-construction verification and delineation sampling is recommended to be carried out to ensure delineation is achieved and the extent of the remedial work within the limits of the Project is verified prior to commencing the Project. The six areas requiring remediation are described as follows:

- **Drum cache** – Approximately 300, 205-litre drums and a 50,000 litre tank are currently staged in this area. Based on the historic reports reviewed and the condition of the drums, the drum cache has been located in this area since at least 1995. The drums contain varying quantities of a tar product (from residual to full). The tar product has leaked from some of the drums on to the surficial soil. The soil sample collected immediately underlying an area of tar product (TP32 - 0.15 mbgs) contains concentrations of ethylbenzene one order of magnitude greater than the CCME guideline. CRA anticipates that the ethylbenzene impacts do not extend beyond the sample depth into the soil, as the tar product is quite viscous. The drums, tank, tar product, and surficial soil located within this area must be managed prior to or during the Project works.
- **LTUs and underlying soil** - Soil samples collected from the LTUs and in the area surrounding the LTUs (test pit TP24) contain concentrations of PHC F2 and F3 Fractions greater than the DEP criteria. Based on CRA's review of the February 2012 LTU Decommissioning report, PHC-impacted soil remains underlying the former LTU. The PHC-impacted soil located within this area must be managed prior to or during the Project works.
- **Buried asbestos waste** - CRA observed a sign located adjacent to the LTUs that demarcates the location of buried asbestos waste. CRA did not find any additional information in the historical reports on the type or volume of asbestos waste buried. The asbestos waste located within this area must be managed prior to or during the Project works.
- **Arsenic-impacted soil adjacent to runway** - The soil sample collected from 0.8 mbgs at test pit TP15 located adjacent to the runway contained concentrations of arsenic

greater than the CCME guideline. The arsenic-impacted soil located within this area must be managed prior to or during the Project works.

- **PAH-impacted groundwater**– The grab groundwater sample collected from test pit TP06 contained concentrations of PAH parameters greater than the MOE groundwater standards (see Section 4.10). Groundwater was encountered during the excavation of test pit TP06 at approximately 1.1 mbgs. The PAH-impacted groundwater encountered in this area must be managed during the Project works.
- **Building Materials – asbestos, lead, mercury, PCBs –** Two existing buildings (T-116 and T-120) will be demolished and one existing building (T-25) will be rehabilitated for an alternate use as part of the Project works. A DSHMS was prepared for the buildings by Genivar in February 2013 and identified the presence of asbestos, lead, mercury, and PCBs in the buildings. These designated substances must be managed prior to or during the Project works.

As part of this PECAMP, CRA has identified environmentally acceptable and practical, remedial options for each of the above-noted areas requiring management. A description of the remedial options contemplated and recommendation of the preferred remedial option is discussed in the following sections. CRA is developing the conceptual design of the preferred option for each area and will be provided in the CMP prepared for the Site.

6.0 REMEDIAL OPTIONS

CRA understands that the objective of the Project is to manage the Pre-Existing Environmental Contamination encountered during the Project works and not to achieve Site clean-up. In accordance with Appendix A of the EAA and Schedule 8 1.3(e), CRA has used the following objectives and guidelines to develop the remedial options for each area requiring management:

1. The work and activities that are expected to be needed in order to manage Pre-Existing Environmental Contamination shall be planned and conducted in compliance with applicable Laws and the Project Agreement, in the most efficient manner, in terms of cost and time
2. In all cases, all work, activities, handling, management, processing, transporting, disposal and other work or activities to address Environmental Contamination shall be done in compliance with applicable Laws and the terms of the Project Agreement
3. Materials and wastes will only be removed from the Site and disposed of off-Site where there is a lawful requirement to do so and where there is no other reasonable lawful option, such as on-site treatment, Temporary Storage and/or Disposal, or through the use of risk assessment
4. Risk assessment will be used where feasible and reasonable
5. If risk assessment is not available, on-site treatment, Temporary Storage and/or Disposal will be used where feasible, reasonable and in compliance with applicable Laws, in order to avoid the cost and delay associated with transporting and disposing of materials or wastes off site, which will only be done where there are no other lawful options available

Adhering to the above objectives and guidelines, CRA has identified the following remedial options for managing the areas of environmental contamination:

- Develop Site-specific environmental quality standards (following a regulatory approved approach) to show that the concentrations present do not pose a risk to human health or the environment based on the applicable exposure pathways for the Site and as such the material can be managed on Site as part of the Project works (i.e., risk assessment approach). Options for managing the material on Site as part of the Project works include using impacted soil as common fill in areas to be paved with asphalt or direct discharging impacted groundwater encountered during excavation activities to the ground surface or infiltration pit in a designated area on Site.

- Construction of an on-Site waste containment cell to store waste material that is not required by law to be shipped off Site for disposal.
- Secure and transport all waste material that cannot lawfully be managed on Site to approved off-Site disposal facilities. Appropriate disposal facilities for each waste stream will be identified in the CMP if this is selected as the preferred remedial option.

CRA acknowledges that there is a City-owned landfill located in close proximity to the Site where waste material generated during previous investigation/remedial activities conducted at the Site have been disposed of. Based on CRA's review of the operating records for the landfill and discussion with landfill and City personnel, CRA understands that the landfill is unlined and current waste disposal activities occur on existing ground surface within a bermed area. Site investigation and historical reports identified that the shallow stratigraphic units in the area consist primarily of coarse-grained material (sand and gravel) which is expected to provide a limited barrier to the migration of contamination/leachate. Leachate mitigation procedures are limited and include daily to weekly capping of the waste using wood material as cover. The frequency of cover placement is dependent on the availability of cover material. The quality of the cover material and its ability to limit leachate generation was not available to CRA. CRA also understands that the landfill is near capacity and closure, and the final cover system for the landfill is currently under review. Surface water monitoring is a part of landfill operation; however, the frequency of surface water sample collection and analysis was not available to CRA. Based on a review of the operating condition of the landfill and the uncertainty of final cover materials, CRA does not recommend sending impacted material to the landfill for disposal purposes.

The following sub-sections provide a description of the remedial options contemplated for managing each of the areas of environmental contamination and the recommended preferred remedial option. A matrix summarizing this evaluation is provided in Table 6.

6.1 DRUM CACHE

Approximately 300, 205-litre drums and a 50,000-litre tank are currently staged within an area located adjacent to the former asphalt plant (see Figure 2). The drums contain varying quantities of a tar product (from residual to full). Tar product has leaked from some of the drums onto the ground surface. The analytical results from a soil sample collected immediately beneath an area of tar product indicate that low level ethylbenzene impacts are present in the surficial soil. CRA has made the conservative

assumption that the surficial soil (top 6 inches of soil) within the area of the drum cache will have low level volatile impacts.

There are three waste streams that need to be managed within this area (Items 1 through 3 in Table 6): 300, 205-litre drums and a 50,000-litre tank containing varying amounts of tar product, tar product released to the ground surface, and surficial soil impacted with volatiles (ethylbenzene). The remedial options contemplated for the drums and tank and for the tar product released to the ground surface include placement in a constructed on-Site waste containment cell or off-Site shipment in a secured container for disposal at an approved disposal facility. The remedial option contemplated for the ethylbenzene-impacted soil is excavation for placement in the waste containment cell. The impacted soil could be shipped off Site as well; however, based on the low level of impact present in the soil, CRA did not identify this as a practical, cost-effective approach and did not evaluate this option further.

On-Site Waste Containment Cell

Based on the quantity of drums present and the size of the tank, they would require approximately 200 m^3 of air space in the waste containment cell. The waste containment cell would be constructed approximately 0.5 metres (m) below grade (exact design will be determined as part of the CMP) and lined with an appropriate geomembrane liner (specifications included as part of the CMP) to prevent contaminants leaching from the waste stored in the containment cell into the underlying soils. The cell would be covered with a geomembrane liner to prevent the infiltration of rain water and to remove the direct contact exposure pathway. The drums would be removed from their current location and placed as is in the waste containment cell. Based on the size of the tank it would need to be crushed prior to placement in the waste containment cell. The tar product would remain in the drums/tank during this process. The tar product present on the ground surface would be excavated and transported directly to the waste containment cell.

The top 6 inches of soil within the drum cache area would be excavated and transported directly to the waste containment cell and co-disposed of with the drums and tank to fill the void spaces between the drums. It is recommended that pre-construction verification and delineation sampling be conducted within this area to confirm the horizontal and vertical extent of impacted soil within the limits of the Project works in this area. This sampling will negate the need for collecting confirmatory soil samples during the Project works, which would delay the construction schedule. The scope of work for the pre-construction verification and delineation sampling will be included in the CMP.

The location of the on-Site waste containment cell will be determined with the GN and AIP if this is selected as the preferred remedial option.

Off-Site Shipment in Secure Containers for Disposal

The 205-litre drums, 50,000-litre tank and tar product would be placed in secure containers and shipped off Site to an approved disposal facility. As noted above, the drums and tank would require approximately 200 $m^3$of storage space. If this is selected as the preferred remedial option, CRA will identify approved disposal facilities that each of the waste streams would be accepted at in the CMP.

Recommendation for Preferred Remedial Option

Based on the waste streams associated with the drum cache area, and CRA's understanding of GN's objectives and guidelines for this project, CRA recommends that all three waste streams be removed from the drum cache area and placed in the constructed on-Site waste containment cell. There is no lawful reason why these waste streams cannot be managed on Site in a properly designed waste containment cell.

6.2 LTUS AND UNDERLYING SOIL

Two LTUs containing PHC-impacted soil and one partially decommissioned LTU are located within the former FTA. Soil sampling conducted by another consultant in 2012 identified PHC impacts in the surficial soil underlying the partially decommissioned LTU. For the purpose of the PECAMP, CRA has assumed that the surficial soil underlying LTU1 and LTU2 is also impacted with PHCs. CRA did not collect a sample from the soil underlying the LTUs during the July 2013 test pitting activities to avoid compromising the integrity of the geosynthetic liner that is currently in place. A soil sample collected from test pit TP24, located in close proximity to LTU1 and LTU2 contained PHC concentrations greater than the applicable standards. There is approximately 6,300 $m^3$of PHC-impacted soil located in this area that need to be managed (Item 4 in Table 6).

The remedial options contemplated for the PHC-impacted soil include use of the soil as common fill in areas where additional material is required beneath the sub-grade for new asphalt surfaces or placement in a constructed on-Site waste containment cell. The impacted soil could be shipped off Site as well; however, based on the low level of

impact present in the soil, CRA did not identify this as a practical, cost-effective approach and did not carry this option through the evaluation process any further.

Place as Fill Under New Asphalt Areas

The first step in this remedial option is to develop Site-specific risk-based concentrations (RBCs) for PHC concentrations in soil based on the applicable exposure pathways for the Site. In accordance with the EPD's Guideline for Contaminated Site Remediation, CRA would obtain the EPD's concurrence on the RBCs developed prior to implementing them on Site. Based on discussions with the Director of the EPD, this review process would take approximately one to two weeks. CRA could submit a technical memorandum summarizing the development of the RBCs to the EPD immediately upon receipt of approval of this remedial option by AIP and the GN. Upon obtaining EPD's concurrence on the RBCs for PHCs, and thus validating the acceptable use of the PHC-impacted soil on Site as part of the Project works, CRA would recommend AIP to use as much of the PHC-impacted soil as possible for common fill under new asphalt areas. Placing the PHC-impacted soil under an asphalt cover will remove the direct exposure pathway for all human receptors.

The soil currently staged in the existing LTUs would be excavated and stockpiled on plastic sheeting and geotextile pending its use as common fill at designated locations on Site. There is approximately 1,440 m^3, 4,125 m^3, and 640 m^3 of PHC-impacted soil located within and underlying LTU1, LTU2, and the partially decommissioned LTU (only underlying), respectively. The geosynthetic liner at the base of the LTUs would be removed and placed directly in the on-Site waste containment cell. The top 6 inches of soil underlying the existing LTUs and underlying the partially decommissioned LTU would be excavated and stockpiled on plastic sheeting pending its use as common fill at designated locations on Site.

The soil sample collected at 0.6 mbgs from test pit TP24 had PHCs detected at concentrations greater than the applicable standards. The soil sample collected at 1.6 mbgs from test pit TP24 did not contain concentrations of PHCs greater than the applicable standards. For the purpose of this PECAMP CRA has assumed that an excavation approximately 10 m by 10 m and 1 m deep would be required to remove the PHC-impacted soil from this area. The soil would be excavated and stockpiled on plastic sheeting/geotextile pad pending its use as common fill at designated locations on Site. If there are areas where PHC-impacted soil is currently located that will be covered with an asphalt surface, this PHC-impacted soil can remain in place and be covered as part of the Project works.

It is recommended that pre-construction verification and delineation sampling be conducted within this area to confirm the horizontal and vertical extent of PHC-impacted soil within the limits of the Project works in this area.

At this time CRA is not aware of the total volume of common fill that is needed on Site beneath the sub-grade for the new asphalt areas. If this is selected as the preferred remedial option, CRA will work with AIP to identify the quantity of fill that is needed and the locations on Site where it is feasible to use the PHC-impacted soil. Any surplus PHC-impacted soil would be placed in the on-Site waste containment cell.

On-Site Waste Containment Cell

As noted above, the PHC-impacted soil would require approximately 6,300 $m^3$of air space in the waste containment cell. The PHC-impacted soil would be excavated from the existing LTUs and from the test pit TP24 excavation (as noted above) and placed directly into the waste containment cell. The geosynthetic liner from the existing LTUs would be placed directly into the waste containment cell. The top 6 inches of soil underlying the existing LTUs and the partially decommissioned LTU would be excavated and placed directly into the waste containment cell.

As noted above, pre-construction verification and delineation sampling should be conducted prior to commencing the Project works to confirm the horizontal and vertical extent of PHC-impacted soil within the limits of the Project works in this area.

The location of the on-Site waste containment cell will be determined with the GN and AIP if this is selected as the preferred remedial option.

Recommendation for Preferred Remedial Option

Based on the nature and extent of the PHC-impacted soil, and CRA's understanding of GN's objectives and guidelines for this project, CRA recommends that RBCs be developed for PHC concentrations in soil. Upon obtaining EPD's concurrence on the RBCs as much of the PHC-impacted soil as possible should be used for common fill under new asphalt areas in the Project works. All surplus PHC-impacted soil should be placed in the waste containment cell.

6.3 BURIED ASBESTOS WASTE

A sign designating the location of buried asbestos waste within the former FTA was identified by CRA during the July 2013 Site inspection (see Appendix B). CRA is not aware of the source, type or quantity of asbestos waste buried (Item 5 in Table 6). The location of the sign was surveyed by Kudlik during the field activities, and is shown on Figure 4.

The remedial options contemplated for the buried asbestos waste include placement in a constructed on-Site waste containment cell or off-Site shipment in a secured container for disposal at an approved disposal facility.

Given the lack of the information regarding the extent of asbestos waste, it is recommended that test pitting activities be conducted in this area prior to commencing the Project work to determine the limits of the asbestos waste and to ensure that all asbestos waste is removed as part of this remedial effort.

On-Site Waste Containment Cell

CRA was not provided any reports or information regarding the source of the asbestos waste, the type of asbestos (friable or non-friable), or the quantity of asbestos waste buried. For the purpose of this PECAMP, CRA has assumed that the asbestos is buried in an area 20 m by 20 m and no more than 1 mbgs. Based on this assumption, the asbestos waste would require approximately 400 $m^3$of air space in the waste containment cell. The asbestos waste would be excavated from its current location as carefully as possible to avoid generating debris for direct placement into the waste containment cell. If this is selected as the preferred remedial option, a detailed management plan adhering to all applicable laws and regulations pertaining to the handling of asbestos waste will be developed as part of the CMP. The contractor conducting the work would have to be licensed to handle asbestos waste.

The location of the on-Site waste containment cell will be determined with the GN and AIP if this is selected as the preferred remedial option.

Off-Site Shipment in Secure Containers for Disposal

The asbestos waste would be placed in secure containers and shipped off Site to an approved disposal facility. As noted above, the quantity of asbestos waste buried and requiring management is currently unknown. If this is selected as the preferred

remedial option, CRA will identify an approved disposal facility that the asbestos waste would be accepted at in the CMP.

Recommendation for Preferred Remedial Option

Based on CRA's understanding of GN's objectives and guidelines for this project, CRA recommends that the buried asbestos waste be excavated and placed in the constructed on-Site waste containment cell. There is no lawful reason why the asbestos waste cannot be managed on Site in a properly designed waste containment cell.

6.4 ARSENIC-IMPACTED SOIL ADJACENT TO RUNWAY

The soil sample collected from 0.8 mbgs at test pit TP15 located adjacent to the runway contained concentrations of arsenic greater than the CCME guideline. For the purpose of this PECAMP, CRA has assumed that an excavation approximately 10 m by 10 m and 1 mbgs would be required to remove the arsenic-impacted soil from this area. Under this assumption, there is approximately 100 m^3 of arsenic-impacted soil located in this area that needs to be managed (Item 6 in Table 6).

The remedial options contemplated for the arsenic-impacted soil include use of the soil as common fill in areas where additional material is required beneath the sub-grade for new asphalt surfaces or placement in a constructed on-Site waste containment cell. The impacted soil could be shipped off Site as well; however, based on the low level of impact present in the soil, CRA did not identify this as a practical, cost-effective approach and did not carry this option through the evaluation process any further.

Place as Fill Under New Asphalt Areas

The first step in this remedial option is to develop RBCs for arsenic concentrations in soil based on the applicable exposure pathways for the Site. In accordance with the EPD's Guideline for Contaminated Site Remediation, CRA would obtain the EPD's concurrence on the RBCs developed prior to implementing them on Site. Based on discussions with the Director of the EPD, this review process would take approximately one to two weeks. Upon obtaining EPD's concurrence on the RBCs for arsenic, and thus validating the acceptable use of the arsenic-impacted soil on Site as part of the Project works, CRA would recommend AIP use as much of the arsenic-impacted soil as possible for common fill under new asphalt areas. Placing the arsenic-impacted soil under an asphalt cover will remove the direct exposure pathway for all human receptors.

The arsenic-impacted soil would be excavated and stockpiled on plastic sheeting pending its use as common fill at designated locations on Site. It is recommended that pre-construction verification and delineation soil sampling be conducted to confirm the horizontal and vertical extent of arsenic-impacted soil within the limits of the Project works in this area.

At this time CRA is not aware of the total volume of common fill that is needed on Site beneath the sub-grade for the new asphalt areas. If this is selected as the preferred remedial option, CRA will work with AIP to identify the quantity of fill that is needed and the locations on Site where it is feasible to use the arsenic-impacted soil. Any surplus arsenic-impacted soil would be placed in the on-Site waste containment cell.

On-Site Waste Containment Cell

As noted above, the arsenic-impacted soil would require approximately 100 m^3 of air space in the waste containment cell. The arsenic-impacted soil would be excavated from the test pit TP15 excavation and placed directly into the waste containment cell.

The location of the on-Site waste containment cell will be determined with the GN and AIP if this is selected as the preferred remedial option.

Recommendation for Preferred Remedial Option

Based on the nature and extent of the arsenic-impacted soil, and CRA's understanding of GN's objectives and guidelines for this project, CRA recommends that RBCs be developed for arsenic concentrations in soil. Upon obtaining EPD's concurrence on the RBCs as much of the arsenic-impacted soil as possible should be used for common fill under new asphalt areas in the Project works. All surplus arsenic-impacted soil should be placed in the waste containment cell.

6.5 PAH-IMPACTED GROUNDWATER

The grab groundwater sample collected from test pit TP06 contained concentrations of PAH parameters greater than the MOE groundwater standards. Groundwater was encountered during the excavation of test pit TP06 at approximately 1.1 mbgs. Based on information provided to CRA, excavations will be advanced to approximately 1.2 mbgs in this area during the Project works, as such, it is possible that PAH-impacted groundwater will be encountered and must be managed.

The remedial options contemplated for the PAH-impacted groundwater include developing RBCs for PAHs to validate the acceptability of direct discharging the groundwater to the ground surface or treatment of the PAH-impacted groundwater prior to ground discharge.

Direct Ground Discharge

The first step in this remedial option is to develop RBCs for PAH concentrations in groundwater based on the applicable exposure pathways for the Site. CRA's risk assessment group would follow regulatory approved guidance documents to develop the RBCs for PAHs and would obtain the EPD's concurrence on the RBCs developed prior to implementing them on Site. Based on discussions with the Director of the EPD, this review process would take approximately one to two weeks. Upon obtaining EPD's concurrence on the RBCs for PAHs, and thus legitimizing the direct ground discharge of the groundwater, CRA would recommend an appropriate location on Site that all groundwater collected while working in the vicinity of test pit TP06 is direct discharged to.

Treatment Followed by Ground Discharge

If it is not possible to develop RBCs to validate direct ground discharge of the PAH-impacted groundwater, the groundwater collected while working in the vicinity of test pit TP06 would be containerized and run through an on-Site treatment unit prior to ground discharge. Details specifying the treatment methodology will be included in the CMP if this is selected as the preferred remedial option.

Recommendation for Preferred Remedial Option

Based on the nature and extent of the PAH-impacted groundwater, CRA recommends that Site-specific standards be developed for PAH concentrations in groundwater. Upon obtaining EPD's concurrence on the Site-specific standards, the collected groundwater should be direct ground discharged in an appropriate area on Site.

6.6 BUILDING MATERIALS – ASBESTOS, LEAD, MERCURY, PCBS

CRA understands that as part of the Project works two existing buildings (T-116 and T-120) will be demolished and one existing building (T-25) will be rehabilitated for an alternate use. A DSHMS was prepared for the buildings by Genivar in February 2013

and identified the presence of asbestos, lead, mercury, and PCBs in the buildings (Item 8 in Table 6). The DSHMS identified the quantity of each designated substance located in the buildings.

Samples collected from paint on various surfaces in the buildings indicated the presence of lead. In accordance with standard industry practices, it is proposed that the quantity of lead is negligible and that the surfaces containing lead paint that are to be demolished can go to a disposal facility as clean construction debris.

CRA has been advised by AIP that all designated substances removed from the buildings are to be shipped off Site for disposal at licensed disposal facilities.

Off-Site Shipment in Secure Containers for Disposal

The designated substances will be removed from the buildings and placed in secure containers for off-Site shipment to disposal facilities licensed to manage the designated substances. CRA will identify approved disposal facilities each designated substance would be accepted at in the CMP as well as the protocol for handling each type of designated waste during the abatement activities.

7.0 CONTAMINATION MANAGEMENT PLAN

Based on the information provided in this PECAMP, CRA is developing a CMP, which provides a conceptual design of the preferred remedial options for each area, as discussed in Section 6. As outlined in Schedule 8, the CMP shall include "scope and methodology, estimated timing and costs, for addressing Pre-Existing Environmental Contamination, which plan will include particulars with respect to the design and construction techniques and methods for the work and activities that will be required to manage Pre-Existing Environmental Contamination disclosed in the Designated Environmental Report or the Environmental Reports or which is anticipated to be encountered in the course of the Project Work through the use of appropriate design and construction techniques and methods."

The CMP will identify the scope of work to be followed by the contractor and will include the following as applicable:

- Detailed description of activities to be completed in sequential order for each area (construction of waste containment cell, excavation, dewatering, relocation of drums/tanks, placement of clean covers, mobilization of temporary treatment unit, removal of designated substances, etc.)
- Drawings identifying the limits of excavation, dimensions and location of waste containment cells, and all other pertinent details
- Additional delineation work required (i.e., test pitting activities to confirm the limits of buried asbestos waste, pre-construction verification and delineation sampling)
- Pre-construction verification and delineation sampling plans to confirm horizontal and lateral extent of contamination within the limit of the Project works, including the number of samples to be collected, sample media, sample intervals, and specific parameters to be analyzed

CRA will develop the scope of work for each area such that it complies with all applicable laws and regulations.

8.0 REFERENCES

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All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Lindsay Shepherd, P.Eng.

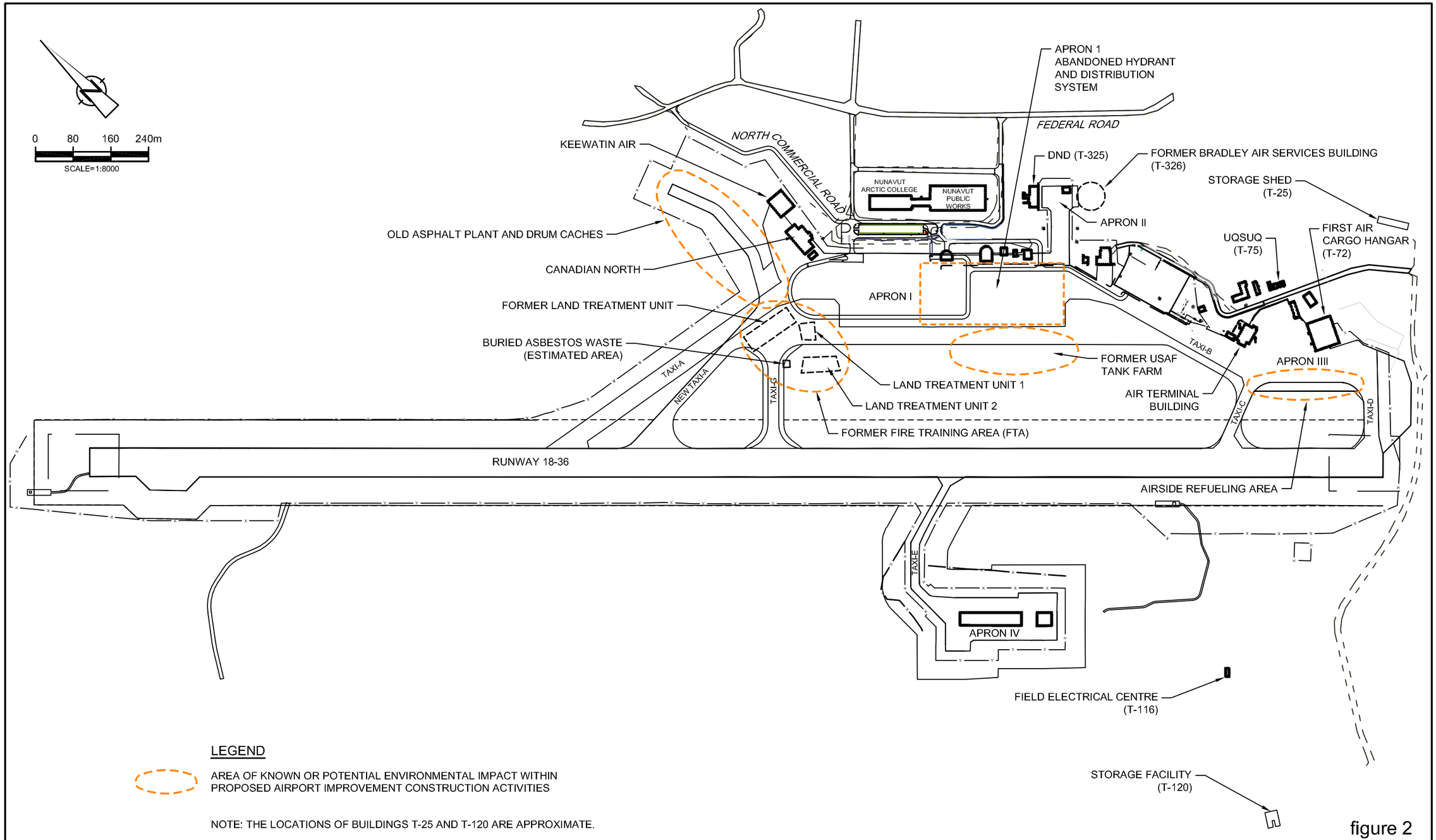
Gregory D. Ferraro, P.Eng.

Source: © 2013 - TerraServer®; Basemap: ESRI Basemap and data, accessed 2013; Coordinate System: NAD 1983 UTM Zone 19N

figure 1

SITE LOCATION MAP
PRE-EXISTING ENVIRONMENTAL
CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
Iqaluit, Nunavut

082415-00(003)GIS-OT001 August 09, 2013



LEGEND

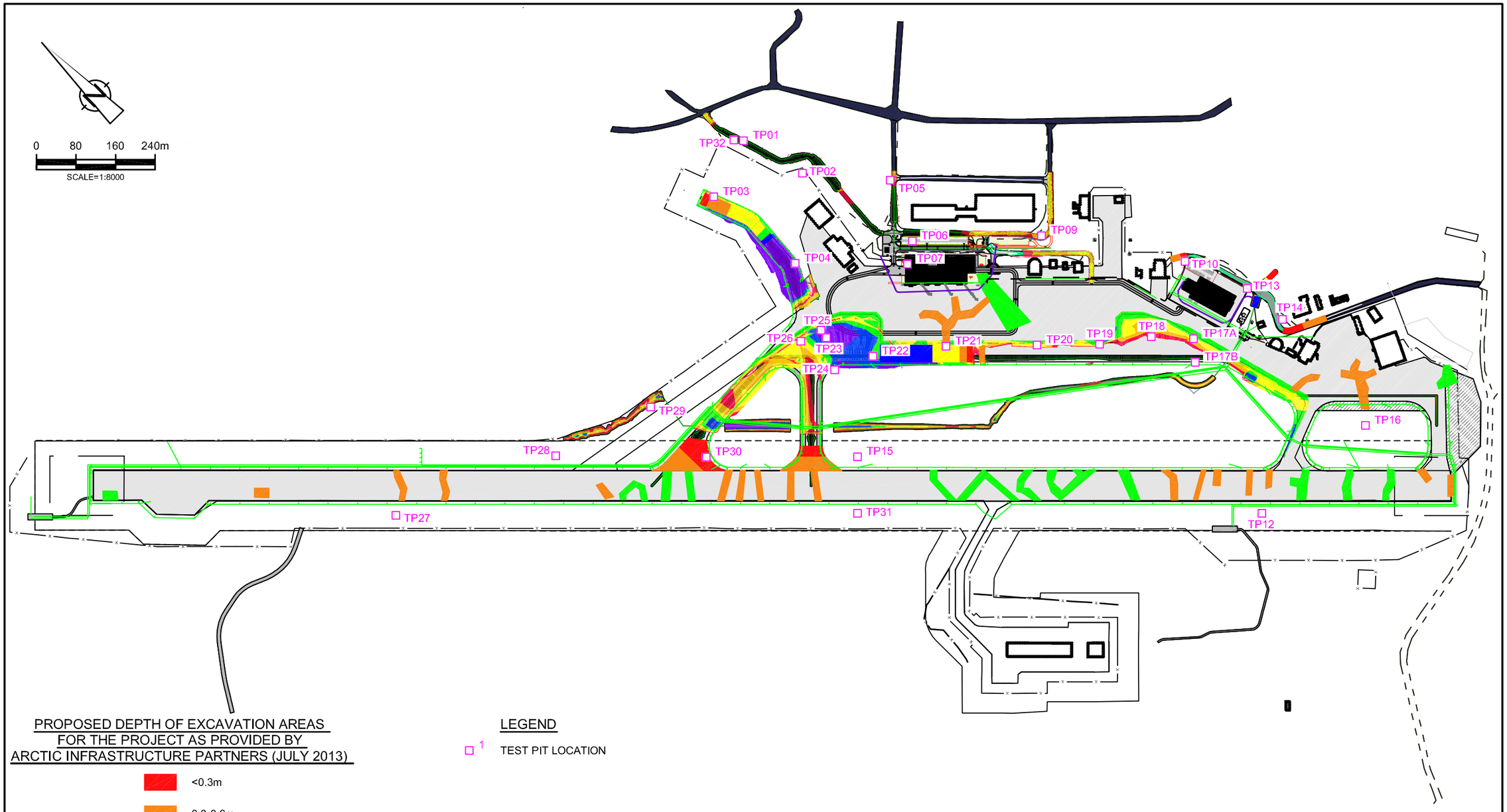
AREA OF KNOWN OR POTENTIAL ENVIRONMENTAL IMPACT WITHIN PROPOSED AIRPORT IMPROVEMENT CONSTRUCTION ACTIVITIES

NOTE: THE LOCATIONS OF BUILDINGS T-25 AND T-120 ARE APPROXIMATE.

figure 2

SITE PLAN AND AREAS OF KNOWN OR POTENTIAL ENVIRONMENTAL IMPACT
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
Iqaluit, Nunavut

82415-00(003)GN-WA001 AUG 22/2013



PROPOSED DEPTH OF EXCAVATION AREAS
FOR THE PROJECT AS PROVIDED BY
ARCTIC INFRASTRUCTURE PARTNERS (JULY 2013)

- <0.3m
- 0.3-0.6m
- 0.6-0.9m
- 0.9-1.2m
- 1.2-1.5m
- >1.5m
- AREA OF PROPOSED ASPHALT RESURFACING

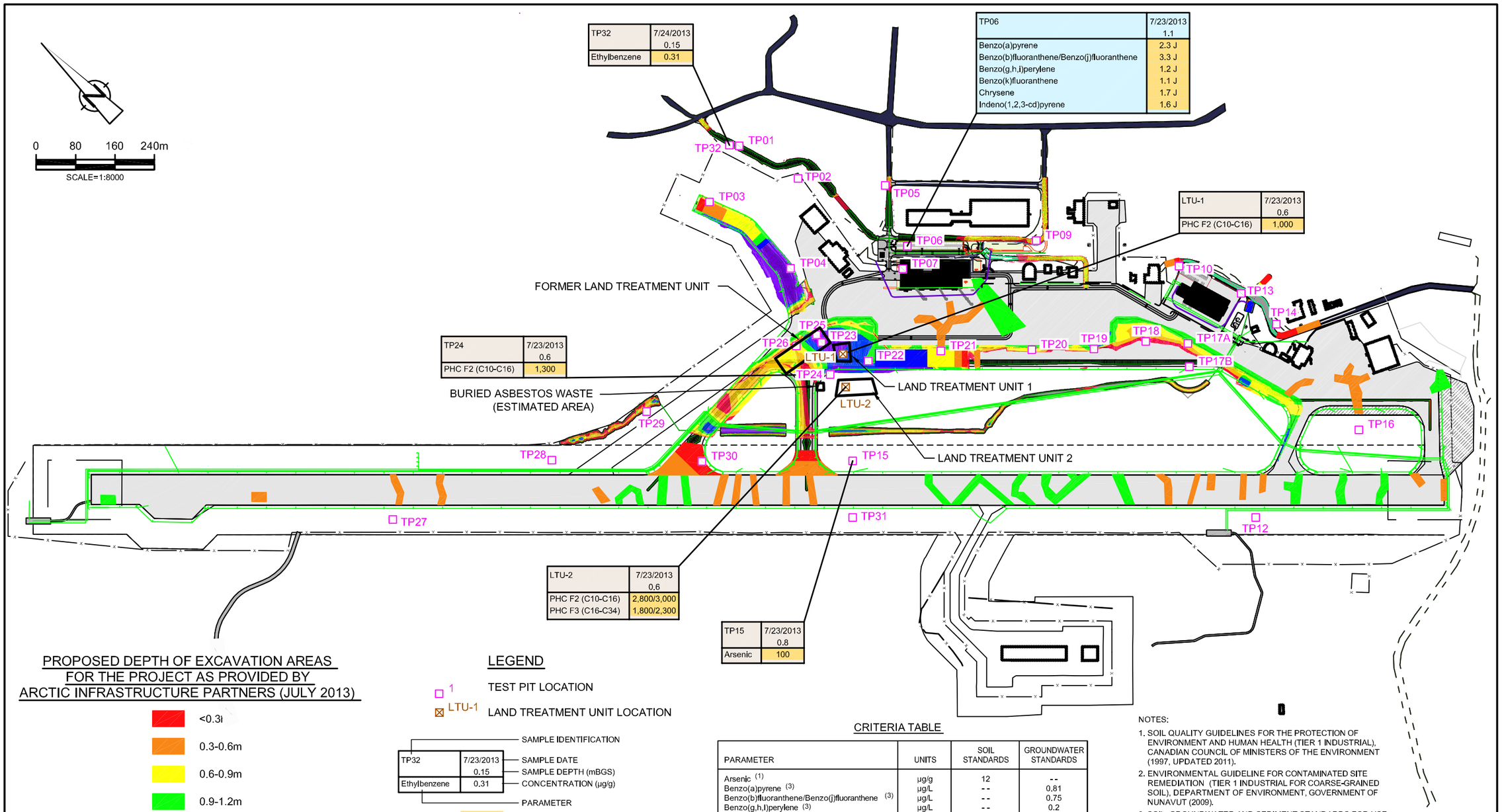
LEGEND

□ 1 TEST PIT LOCATION

figure 3

PROPOSED AIRPORT IMPROVEMENT PLAN AND TEST PIT LOCATIONS
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
Iqaluit, Nunavut

82415-00(003)GN-WA002 AUG 22/2013



PROPOSED DEPTH OF EXCAVATION AREAS FOR THE PROJECT AS PROVIDED BY ARCTIC INFRASTRUCTURE PARTNERS (JULY 2013)

- <0.3i
- 0.3-0.6m
- 0.6-0.9m
- 0.9-1.2m
- 1.2-1.5m
- >1.5m
- AREA OF PROPOSED ASPHALT RESURFACING

LEGEND

- 1 — TEST PIT LOCATION
- LTU-1 — LAND TREATMENT UNIT LOCATION

TP32	7/23/2013
	0.15
Ethylbenzene	0.31

- SAMPLE IDENTIFICATION
- SAMPLE DATE
- SAMPLE DEPTH (mBGS)
- CONCENTRATION (µg/g)
- PARAMETER
- EXCEEDANCE
- GROUNDWATER SAMPLE
- SOIL SAMPLE
- J — ANALYTE CONCENTRATION IS ESTIMATED

CRITERIA TABLE

PARAMETER	UNITS	SOIL STANDARDS	GROUNDWATER STANDARDS
Arsenic (1)	µg/g	12	--
Benzo(a)pyrene (3)	µg/L	--	0.81
Benzo(b)fluoranthene/Benzo(j)fluoranthene (3)	µg/L	--	0.75
Benzo(g,h,I)perylene (3)	µg/L	--	0.2
Benzo(k)fluoranthene (3)	µg/L	--	0.4
Chrysene (3)	µg/L	--	1
Ethylbenzene (1)	µg/g	0.082	--
Indeno(1,2,3-cd)pyrene (3)	µg/L	--	0.2
PHC F2 (C10-C16) (2)	µg/g	260	--
PHC F3 (C16-C34) (2)	µg/g	1,700	--

NOTES:

1. SOIL QUALITY GUIDELINES FOR THE PROTECTION OF ENVIRONMENT AND HUMAN HEALTH (TIER 1 INDUSTRIAL), CANADIAN COUNCIL OF MINISTERS OF THE ENVIRONMENT (1997, UPDATED 2011).
2. ENVIRONMENTAL GUIDELINE FOR CONTAMINATED SITE REMEDIATION (TIER 1 INDUSTRIAL FOR COARSE-GRAINED SOIL), DEPARTMENT OF ENVIRONMENT, GOVERNMENT OF NUNAVUT (2009).
3. SOIL, GROUNDWATER AND SEDIMENT STANDARDS FOR USE UNDER PART XV.1 OF THE ENVIRONMENTAL PROTECTION ACT (MOE, 2011), TABLE 3: FULL DEPTH GENERIC SITE CONDITION STANDARDS IN A NON-POTABLE GROUNDWATER CONDITION.

figure 4

SOIL AND GROUNDWATER EXCEEDANCES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
Iqaluit, Nunavut

82415-00(003)GN-WA004 AUG 22/2013

TABLE 1

FIELD SAMPLE KEY
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Location/ Sample ID	*Test Pit Depth (m BGS)*	*Depth for Project (m BGS)* [2]	*Permafrost Encountered (Y/N)*
TP01	0.90	0.9-1.2	Y
TP02	1.50	0.9-1.2	N
TP03	1.30	0.6-0.9	N
TP04	2.10	>1.5	Y
TP05	1.45	0.6-0.9	N
TP06	1.10	0.9-1.2	N
TP07	1.25	0.9-1.2	N
TP08 [1]	--	--	--
TP09	3.50	2.0	N
TP10	1.65	1.5	Y
TP11 [1]	--	--	--
TP12	0.60	0.9-1.2	N
TP13	1.35	1.2-1.5	Y
TP14	0.80	0.3-0.6	N
TP15	0.80	0.3-0.6	N
TP16	0.65	0.3-0.6	N
TP17A	1.15	0.6-0.9	N
TP17B	1.10	0.6-0.9	N
TP18	1.10	0.6-0.9	N
TP19	1.50	0.6-0.9	N
TP20	0.90	0.6-0.9	N
TP21	1.45	1.2-1.5	N
TP22	1.60	>1.5	N
TP23	1.50	>1.5	Y
TP24-0.6	0.60	>1.5	N
TP24-1.6	1.60	>1.5	N
TP25	1.00	0.6-0.9	N
TP26	0.95	0.6-0.9	N
TP27	0.60	0.3-0.6	N
TP28	1.20	0.9-1.2	N
TP29	1.00	0.6-0.9	N
TP30	0.60	0.3-0.6	N
TP31	1.20	0.9-1.2	N
TP32	0.15	0.9-1.2	N
LTU1	0.60	--	NA
LTU2	0.60	--	NA

Notes:

-- not defined
1 Test pit removed from the PECAMP scope of work per concurrence with Arctic Infrastructure Partner
2 Based on information provided by Arctic Infrastructure Partners

TABLE 2

TEST PIT COORDINATES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Location/Description	Northing [1]	Easting [1]	Ground Surface Elevation m AMSL
Asbestos	7070044.590	522131.976	26.929
LTU1- soil sample (middle)	7070051.951	522203.769	27.714
LTU1- NE Corner	7070021.582	522159.820	26.973
LTU1- NW Corner	7070002.027	522133.053	26.524
LTU1- SE Corner	7069974.654	522210.196	27.391
LTU1- SW Corner	7069946.857	522194.901	27.409
LTU2- soil sample (middle)	7070000.926	522160.235	27.361
LTU2- NE Corner	7070079.215	522203.014	27.619
LTU2- NW Corner	7070050.734	522184.162	27.517
LTU2- SE Corner	7070058.755	522229.214	27.720
LTU2- SW Corner	7070029.586	522204.449	27.729
TP01	7070498.903	522354.554	25.830
TP02	7070368.054	522392.112	25.443
TP03	7070461.469	522231.665	26.308
TP04	7070249.833	522252.108	26.700
TP05	7070232.412	522506.825	24.797
TP06	7070113.890	522451.017	22.513
TP07	7070087.867	522411.530	24.402
TP09	7069936.270	522643.283	25.733
TP10	7069694.347	522810.819	20.961
TP12	7069224.755	522559.071	21.816
TP13	7069566.330	522860.679	19.172
TP14	7069471.667	522866.336	19.937
TP15	7069884.873	522063.868	26.340
TP16	7069201.787	522832.687	19.892
TP17A	7069571.428	522712.105	21.564
TP17B	7069535.558	522680.729	19.512
TP18	7069634.737	522654.694	21.190
TP19	7069698.512	522570.007	22.409
TP20	7069786.707	522479.914	23.148
TP21	7069915.386	522348.293	24.137
TP22	7070005.914	522230.007	26.778
TP23	7070099.235	522190.031	26.662
TP24	7070041.181	522155.763	26.902
TP25	7070117.550	522193.687	26.595
TP26	7070130.600	522148.700	26.628
TP27	7070462.825	521321.887	29.869
TP28	7070318.706	521634.937	28.613
TP29	7070251.905	521840.201	26.892
TP30	7070101.228	521847.692	27.467
TP31	7069804.167	521982.814	25.587
TP32	7070513.788	522341.939	26.061

Notes:
1 - Coordinate system: UTM 19 NAD 83
m AMSL- metres above mean sea level

TABLE 3

ANALYTICAL RESULTS - SOIL SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:			*LTU-1*	*LTU-2*	*LTU-2*	*TP01*	*TP02*	*TP02*	*TP03*	*TP04*	*TP05*	*TP06*	*TP07*	*TP09*
Sample Date:			*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*
Sample Depth (m bgs):			*0.6*	*0.6*	*0.6*	*0.9*	*1.5*	*1.5*	*1.3*	*2.1*	*1.45*	*1.1*	*1.25*	*3.5*
					Duplicate			*Duplicate*						
Parameters	*Units*	*CCME Industrial* [1]												
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1-Trichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2,2-Tetrachloroethane	µg/g	50	ND(0.060)	ND(0.35)	ND(0.23)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2-Trichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethene	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dibromoethane (Ethylene dibromide)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloropropane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,3-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,4-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
2-Butanone (Methyl ethyl ketone) (MEK)	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Acetone	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Benzene	µg/g	0.030	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)
Bromodichloromethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Bromoform	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Bromomethane (Methyl bromide)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chloroform (Trichloromethane)	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,2-Dichloroethene	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,3-Dichloropropene	µg/g	-	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)
Dibromochloromethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Dichlorodifluoromethane (CFC-12)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Ethylbenzene	µg/g	0.082	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Hexane	µg/g	6.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
m&p-Xylenes	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Methyl tert butyl ether (MTBE)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Methylene chloride	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
o-Xylene	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Styrene	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Tetrachloroethene	µg/g	0.6	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Toluene	µg/g	0.37	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
trans-1,2-Dichloroethene	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
trans-1,3-Dichloropropene	µg/g	-	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)
Trichloroethene	µg/g	0.01	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichlorofluoromethane (CFC-11)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Vinyl chloride	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Xylenes (total)	µg/g	11	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Polycyclic Aromatic Hydrocarbons														
1-Methylnaphthalene	µg/g	-	ND(0.020)	ND(0.050)	0.36	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)
2-Methylnaphthalene	µg/g	-	ND(0.010)	0.028	ND(0.20)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	0.0057	ND(0.050)	ND(0.0050)
Acenaphthene	µg/g	-	ND(0.0050)	ND(0.040)	ND(0.10)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	0.011	ND(0.050)	ND(0.0050)
Acenaphthylene	µg/g	-	ND(0.0050)	ND(0.050)	0.057	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)
Anthracene	µg/g	32	0.0054	0.038	0.35	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	0.013	ND(0.050)	ND(0.0050)
Benzo(a)anthracene	µg/g	-	0.011	0.28	1.4	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.047	ND(0.0050)	ND(0.0050)	0.028	ND(0.050)	ND(0.0050)
Benzo(a)pyrene	µg/g	72	0.018	0.31	1.6	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.039	ND(0.0050)	ND(0.0050)	0.025	ND(0.050)	ND(0.0050)
Benzo(b)fluoranthene/Benzo(j)fluoranthene	µg/g	10	0.031	0.21	0.80	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.055	ND(0.0050)	ND(0.0050)	0.031	ND(0.050)	ND(0.0050)
Benzo(g,h,i)perylene	µg/g	-	0.016	0.28	1.3	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.027	ND(0.0050)	ND(0.0050)	0.015	ND(0.050)	ND(0.0050)
Benzo(k)fluoranthene	µg/g	10	0.0089	0.028	0.059	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.020	ND(0.0050)	ND(0.0050)	0.012	ND(0.050)	ND(0.0050)
Chrysene	µg/g	-	0.011	0.39	2.0	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.034	ND(0.0050)	ND(0.0050)	0.023	ND(0.050)	ND(0.0050)
Dibenz(a,h)anthracene	µg/g	10	ND(0.0050)	ND(0.025)	0.062	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)
Fluoranthene	µg/g	180	0.011	0.20	0.85	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.11	ND(0.0050)	ND(0.0050)	0.054	0.072	ND(0.0050)
Fluorene	µg/g	-	0.0082	ND(0.040)	0.20	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.0050)	ND(0.0050)	0.0095	ND(0.050)	ND(0.0050)

TABLE 3

ANALYTICAL RESULTS - SOIL SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:			*LTU-1*	*LTU-2*	*LTU-2*	*TP01*	*TP02*	*TP02*	*TP03*	*TP04*	*TP05*	*TP06*	*TP07*	*TP09*
Sample Date:			*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*
Sample Depth (m bgs):			*0.6*	*0.6*	*0.6*	*0.9*	*1.5*	*1.5*	*1.3*	*2.1*	*1.45*	*1.1*	*1.25*	*3.5*
					Duplicate			*Duplicate*						
Parameters	*Units*	*CCME Industrial* [1]												
Indeno(1,2,3-cd)pyrene	µg/g	10	0.012	0.087	0.36	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.025	ND(0.0050)	ND(0.0050)	0.015	ND(0.050)	ND(0.0050)
Naphthalene	µg/g	22	ND(0.0050)	ND(0.20)	0.16	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.013	ND(0.0050)	ND(0.0050)	0.017	0.075	ND(0.0050)
Phenanthrene	µg/g	50	ND(0.0050)	0.14	3.2	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.032	ND(0.0050)	ND(0.0050)	0.044	0.25	ND(0.0050)
Pyrene	µg/g	100	0.059	1.3	5.9	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.088	ND(0.0050)	ND(0.0050)	0.039	0.053	ND(0.0050)
Metals														
Antimony	µg/g	40	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Arsenic	µg/g	12	2.7	1.8	1.9	3.5	1.5	1.5	1.6	4.4	1.1	2.2	2.0	2.4
Barium	µg/g	2000	29	21	24	52	13	11	28	31	8.0	47	30	16
Beryllium	µg/g	8	ND(0.20)	ND(0.20)	ND(0.20)	0.46	ND(0.20)	ND(0.20)	0.20	0.24	ND(0.20)	0.33	0.22	ND(0.20)
Boron (hot water soluble)	µg/g	-	0.089	0.15	0.12	0.21	ND(0.050)	ND(0.050)	0.094	ND(0.050)	ND(0.050)	0.055	0.18	0.11
Cadmium	µg/g	22	ND(0.10)	ND(0.10)	ND(0.10)	0.12	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.11	0.10	ND(0.10)
Chromium	µg/g	87	21	17	19	34	19	9.2	17	23	17	30	18	22
Chromium VI (hexavalent)	µg/g	1.4	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Cobalt	µg/g	300	5.5	4.3	4.6	12	6.4	4.4	5.1	7.3	4.8	7.7	6.9	8.2
Copper	µg/g	91	70	9.1	9.7	24	9.7	9.0	12	17	8.0	16	16	15
Lead	µg/g	-	17	13	15	6.6	3.6	2.2	10	6.5	2.8	6.5	9.1	4.4
Mercury	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Molybdenum	µg/g	40	0.72	0.56	0.74	2.2	0.69	ND(0.50)	0.60	0.83	0.61	0.68	0.69	0.84
Nickel	µg/g	50	8.9	6.8	7.5	15	6.9	5.7	7.4	12	5.5	14	9.2	9.0
Selenium	µg/g	2.9	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	µg/g	40	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Sulfur	µg/g	NV	160	110	130	870	ND(50)	ND(50)	100	150	82	130	190	86
Thallium	µg/g	1	ND(0.050)	ND(0.050)	ND(0.050)	0.076	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	0.099	ND(0.050)	ND(0.050)
Tin	µg/g	300	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Uranium	µg/g	300	0.40	0.48	0.35	1.0	0.36	0.23	0.40	0.50	0.40	0.45	0.42	0.39
Vanadium	µg/g	130	44	39	39	67	46	19	35	50	38	52	38	49
Zinc	µg/g	360	39	35	36	110	30	29	52	53	26	95	56	34
PCBs														
Total PCBs	µg/g	33	ND(0.010)	0.046	0.044	ND(0.020)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Petroleum Hydrocarbons														
Petroleum hydrocarbons F1 (C6-C10)	µg/g	-	17	ND(50)	59	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Petroleum hydrocarbons F1 (C6-C10) - less BTEX [2]	µg/g	320	17	ND(50)	59	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Petroleum hydrocarbons F2 (C10-C16) [2]	µg/g	260	**1000**	**2800**	**3000**	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
Petroleum hydrocarbons F3 (C16-C34) [2]	µg/g	1700	1500	**1800**	**2300**	ND(50)	ND(50)	ND(50)	110	ND(50)	ND(50)	ND(50)	190	ND(50)
Petroleum hydrocarbons F4 (C34-C50) [2]	µg/g	3300	750	740	1200	ND(50)	ND(50)	ND(50)	82	ND(50)	ND(50)	ND(50)	170	ND(50)
Gravimetric heavy hydrocarbons (F4G)	µg/g	-	-	-	-	-	-	-	-	-	-	-	610	-
General Chemistry														
Cyanide (free)	µg/g	-	0.02	0.03	0.02	0.04	ND(0.01)	ND(0.01)	0.01	0.01	ND(0.01)	ND(0.01)	0.02	ND(0.01)
pH, lab	s.u.	6-8	7.07	7.03	7.02	**5.45**	6.98	6.79	7.54	7.54	7.96	7.39	7.34	7.99
Moisture	%	-	8.0	8.0	7.9	33	3.5	3.3	6.3	10	9.5	8.8	10	2.5

Notes:

1 Canadian Council of Ministers of the Environment (CCME) Tier 1 Industrial Guidelines: As presented in "Canadian Environmental Quality Guidelines Summary Tables, Soil Land Industrial Use", Quality Guidelines for the Protection of Environmental and Human Health, dated 1999, updated 2011 (CCME, 2011). CCME has recently updated their Soil Quality Guidelines (SQGs) for some polycyclic aromatic hydrocarbons (PAHs), as presented in Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons 2010 (CCME, 2010).

2 Environment Protection Department (EPD) of the Department of Environment of the GN Tier 1 Criteria for PHC impacts in Surface Soil: As presented in the "Environmental Guideline for Contaminated Site Remediation", Department of Environment, Government of Nunavut, dated April 1999, updated January 2002 and March 2009. The EPD developed this guidance document with reference to the CCME document "Canada - Wide Standards for Petroleum Hydrocarbons (PHC) in Soil", dated 2001, updated in 2008. The PHC standards are consistent between the two guidance documents. The surface soil depth relates to any soil sample collected less than 1.5 metres below ground surface (m bgs).

1.0 Exceeds generic standards.

\- No value

TABLE 3

ANALYTICAL RESULTS - SOIL SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:			*TP10*	*TP12*	*TP13*	*TP14*	*TP15*	*TP16*	*TP17A*	*TP17B*	*TP18*	*TP19*	*TP20*	*TP21*
Sample Date:			*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*
Sample Depth (m bgs):			*1.65*	*0.6*	*1.35*	*0.8*	*0.8*	*0.65*	*1.15*	*1.1*	*1.1*	*1.5*	*0.9*	*1.45*
Parameters	*Units*	*CCME Industrial* [1]												
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,1-Trichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2,2-Tetrachloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1,2-Trichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,1-Dichloroethene	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dibromoethane (Ethylene dibromide)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,2-Dichloropropane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,3-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
1,4-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
2-Butanone (Methyl ethyl ketone) (MEK)	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Acetone	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Benzene	µg/g	0.030	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)
Bromodichloromethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Bromoform	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Bromomethane (Methyl bromide)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Carbon tetrachloride	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Chloroform (Trichloromethane)	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,2-Dichloroethene	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
cis-1,3-Dichloropropene	µg/g	-	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)
Dibromochloromethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Dichlorodifluoromethane (CFC-12)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Ethylbenzene	µg/g	0.082	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Hexane	µg/g	6.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	0.060
m&p-Xylenes	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Methyl tert butyl ether (MTBE)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Methylene chloride	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
o-Xylene	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Styrene	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Tetrachloroethene	µg/g	0.6	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Toluene	µg/g	0.37	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
trans-1,2-Dichloroethene	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
trans-1,3-Dichloropropene	µg/g	-	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)
Trichloroethene	µg/g	0.01	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)
Trichlorofluoromethane (CFC-11)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Vinyl chloride	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Xylenes (total)	µg/g	11	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)
Polycyclic Aromatic Hydrocarbons														
1-Methylnaphthalene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.079
2-Methylnaphthalene	µg/g	-	ND(0.0050)	ND(0.0050)	0.059	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.13
Acenaphthene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)
Acenaphthylene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)
Anthracene	µg/g	32	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0086
Benzo(a)anthracene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.050)	0.0076	ND(0.0050)	0.0064	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.013
Benzo(a)pyrene	µg/g	72	ND(0.0050)	ND(0.0050)	ND(0.050)	0.0089	ND(0.0050)	0.0073	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.033
Benzo(b)fluoranthene/Benzo(j)fluoranthene	µg/g	10	ND(0.0050)	ND(0.0050)	0.062	0.014	ND(0.0050)	0.010	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0086	0.021
Benzo(g,h,i)perylene	µg/g	-	ND(0.0050)	0.0062	ND(0.050)	0.0088	ND(0.0050)	0.0066	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0051	0.045
Benzo(k)fluoranthene	µg/g	10	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)
Chrysene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.050)	0.0077	ND(0.0050)	0.0063	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.016
Dibenz(a,h)anthracene	µg/g	10	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)
Fluoranthene	µg/g	180	ND(0.0050)	ND(0.0050)	0.059	0.016	ND(0.0050)	0.014	0.0056	0.0059	ND(0.0050)	ND(0.0050)	0.0083	0.029
Fluorene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.050)

TABLE 3

ANALYTICAL RESULTS - SOIL SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:			*TP10*	*TP12*	*TP13*	*TP14*	*TP15*	*TP16*	*TP17A*	*TP17B*	*TP18*	*TP19*	*TP20*	*TP21*
Sample Date:			*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*
Sample Depth (m bgs):			*1.65*	*0.6*	*1.35*	*0.8*	*0.8*	*0.65*	*1.15*	*1.1*	*1.1*	*1.5*	*0.9*	*1.45*
Parameters	***Units***	***CCME Industrial*** [1]												
Indeno(1,2,3-cd)pyrene	µg/g	10	ND(0.0050)	ND(0.0050)	ND(0.050)	0.0085	ND(0.0050)	0.0055	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0052	0.014
Naphthalene	µg/g	22	ND(0.0050)	ND(0.0050)	0.094	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.010)	ND(0.10)
Phenanthrene	µg/g	50	ND(0.0050)	ND(0.0050)	0.077	0.0054	ND(0.0050)	0.0063	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0058	0.045
Pyrene	µg/g	100	ND(0.0050)	ND(0.0050)	0.081	0.012	ND(0.0050)	0.011	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0077	0.054
Metals														
Antimony	µg/g	40	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Arsenic	µg/g	12	1.2	2.2	1.5	1.6	**100**	1.7	2.0	1.0	ND(1.0)	ND(1.0)	1.0	5.2
Barium	µg/g	2000	14	16	21	15	24	20	20	11	9.6	12	12	25
Beryllium	µg/g	8	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Boron (hot water soluble)	µg/g	-	0.094	0.053	0.072	0.053	ND(0.050)	0.076	ND(0.050)	ND(0.050)	ND(0.050)	0.065	0.11	0.093
Cadmium	µg/g	22	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)
Chromium	µg/g	87	13	28	15	11	20	17	16	11	11	7.3	11	22
Chromium VI (hexavalent)	µg/g	1.4	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Cobalt	µg/g	300	4.9	5.2	4.2	3.3	5.3	4.3	4.0	3.0	5.6	3.6	3.7	6.0
Copper	µg/g	91	8.0	7.1	9.6	6.2	6.0	8.2	6.6	6.8	8.4	7.2	7.2	15
Lead	µg/g	-	4.5	20	9.8	3.1	2.8	4.1	4.5	2.1	1.9	1.8	5.6	14
Mercury	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Molybdenum	µg/g	40	ND(0.50)	0.81	0.52	ND(0.50)	0.65	0.57	0.74	ND(0.50)	0.58	ND(0.50)	ND(0.50)	0.66
Nickel	µg/g	50	6.3	9.1	7.0	5.5	11	6.3	6.2	4.6	8.6	5.1	5.2	9.1
Selenium	µg/g	2.9	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	µg/g	40	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Sulfur	µg/g	NV	53	100	83	63	120	140	96	ND(50)	67	64	91	190
Thallium	µg/g	1	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Tin	µg/g	300	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Uranium	µg/g	300	0.25	0.42	0.31	0.31	0.33	0.31	0.32	0.23	0.18	0.29	0.22	0.42
Vanadium	µg/g	130	30	62	31	23	55	32	38	22	25	13	24	40
Zinc	µg/g	360	29	29	36	28	35	40	29	24	27	25	26	41
PCBs														
Total PCBs	µg/g	33	ND(0.010)	ND(0.010)	0.015	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	0.016
Petroleum Hydrocarbons														
Petroleum hydrocarbons F1 (C6-C10)	µg/g	-	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	10	ND(10)
Petroleum hydrocarbons F1 (C6-C10) - less BTEX [2]	µg/g	320	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	10	ND(10)
Petroleum hydrocarbons F2 (C10-C16) [2]	µg/g	260	ND(10)	ND(10)	110	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	64	130
Petroleum hydrocarbons F3 (C16-C34) [2]	µg/g	1700	ND(50)	ND(50)	540	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	630
Petroleum hydrocarbons F4 (C34-C50) [2]	µg/g	3300	ND(50)	ND(50)	740	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	180
Gravimetric heavy hydrocarbons (F4G)	µg/g	-	-	-	2800	-	-	-	-	-	-	-	-	-
General Chemistry														
Cyanide (free)	µg/g	-	ND(0.01)	ND(0.01)	0.01	0.01	0.04	0.02	0.02	ND(0.01)	ND(0.01)	ND(0.01)	ND(0.01)	0.01
pH, lab	s.u.	6-8	7.69	7.81	7.57	7.24	**5.90**	7.44	7.23	7.85	7.91	7.87	7.77	7.47
Moisture	%	-	4.4	8.8	11	11	7.6	11	6.9	9.4	3.7	4.8	4.9	12

Notes:

1 Canadian Council of Ministers of the Environment (CCME) Tier 1 Industrial Guidelines: As presented in "Canadian Environmental Quality Guidelines Summary Tables, Soil Land Industrial Use", Quality Guidelines for the Protection of Environmental and Human Health, dated 1999, updated 2011 (CCME, 2011). CCME has recently updated their Soil Quality Guidelines (SQGs) for some polycyclic aromatic hydrocarbons (PAHs), as presented in Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health- Polycyclic Aromatic Hydrocarbons 2010 (CCME, 2010).

2 Environment Protection Department (EPD) of the Department of Environment of the GN Tier 1 Criteria for PHC impacts in Surface Soil: As presented in the "Environmental Guideline for Contaminated Site Remediation", Department of Environment, Government of Nunavut, dated April 1999, updated January 2002 and March 2009. The EPD developed this guidance document with reference to the CCME document "Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil", dated 2001, updated in 2008. The PHC standards are consistent between the two guidance documents. The surface soil depth relates to any soil sample collected less than 1.5 metres below ground surface (m bgs).

1.0 Exceeds generic standards.

\- No value

TABLE 3

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Sample Location:			*TP22*	*TP23*	*TP24*	*TP24*	*TP25*	*TP26*	*TP27*	*TP28*	*TP29*	*TP30*	*TP31*	*TP32*
Sample Date:			*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*	*7/23/2013*
Sample Depth (m bgs):			*1.6*	*1.5*	*0.6*	*1.6*	*1*	*0.95*	*0.6*	*1.2*	*1*	*0.6*	*1.2*	*0.15*
Parameters	*Units*	*CCME Industrial* [1]												
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,1,1-Trichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,1,2,2-Tetrachloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.11)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,1,2-Trichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,1-Dichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,1-Dichloroethene	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,2-Dibromoethane (Ethylene dibromide)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,2-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,2-Dichloroethane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,2-Dichloropropane	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,3-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
1,4-Dichlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
2-Butanone (Methyl ethyl ketone) (MEK)	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(1.5)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(1.5)
Acetone	µg/g	-	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(1.5)
Benzene	µg/g	0.030	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.0060)	ND(0.018)
Bromodichloromethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Bromoform	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Bromomethane (Methyl bromide)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Carbon tetrachloride	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Chlorobenzene	µg/g	10	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Chloroform (Trichloromethane)	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
cis-1,2-Dichloroethene	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
cis-1,3-Dichloropropene	µg/g	-	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.030)	ND(0.090)
Dibromochloromethane	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Dichlorodifluoromethane (CFC-12)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Ethylbenzene	µg/g	0.082	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	**0.31**
Hexane	µg/g	6.5	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
m&p-Xylenes	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	2.3
Methyl tert butyl ether (MTBE)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Methylene chloride	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
o-Xylene	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	1.2
Styrene	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Tetrachloroethene	µg/g	0.6	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Toluene	µg/g	0.37	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	0.22
trans-1,2-Dichloroethene	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
trans-1,3-Dichloropropene	µg/g	-	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.040)	ND(0.12)
Trichloroethene	µg/g	0.01	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.030)
Trichlorofluoromethane (CFC-11)	µg/g	-	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.15)
Vinyl chloride	µg/g	-	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.060)
Xylenes (total)	µg/g	11	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	ND(0.020)	3.5
Polycyclic Aromatic Hydrocarbons														
1-Methylnaphthalene	µg/g	-	ND(0.0050)	ND(0.0050)	0.025	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.14
2-Methylnaphthalene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.025)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.22
Acenaphthene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.025)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)
Acenaphthylene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.025)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)
Anthracene	µg/g	32	ND(0.0050)	ND(0.0050)	ND(0.025)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)
Benzo(a)anthracene	µg/g	-	ND(0.0050)	ND(0.0050)	0.031	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.015	ND(0.0050)	ND(0.0050)	ND(0.10)
Benzo(a)pyrene	µg/g	72	ND(0.0050)	ND(0.0050)	0.063	0.0054	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.038	ND(0.0050)	ND(0.0050)	ND(0.10)
Benzo(b)fluoranthene/Benzo(j)fluoranthene	µg/g	10	ND(0.0050)	ND(0.0050)	0.10	0.0076	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.015	ND(0.0050)	ND(0.0050)	ND(0.10)
Benzo(g,h,i)perylene	µg/g	-	ND(0.0050)	ND(0.0050)	0.067	0.0056	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.071	ND(0.0050)	ND(0.0050)	ND(0.10)
Benzo(k)fluoranthene	µg/g	10	ND(0.0050)	ND(0.0050)	0.031	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)
Chrysene	µg/g	-	ND(0.0050)	ND(0.0050)	0.028	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.020	ND(0.0050)	ND(0.0050)	ND(0.10)
Dibenz(a,h)anthracene	µg/g	10	ND(0.0050)	ND(0.0050)	ND(0.025)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)
Fluoranthene	µg/g	180	ND(0.0050)	ND(0.0050)	0.045	0.0068	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)
Fluorene	µg/g	-	ND(0.0050)	ND(0.0050)	ND(0.025)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.10)

TABLE 3

ANALYTICAL RESULTS - SOIL SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:			***TP22***	***TP23***	***TP24***	***TP24***	***TP25***	***TP26***	***TP27***	***TP28***	***TP29***	***TP30***	***TP31***	***TP32***
Sample Date:			***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***	***7/23/2013***
Sample Depth (m bgs):			***1.6***	***1.5***	***0.6***	***1.6***	***1***	***0.95***	***0.6***	***1.2***	***1***	***0.6***	***1.2***	***0.15***
Parameters	***Units***	***CCME Industrial*** [1]												
Indeno(1,2,3-cd)pyrene	µg/g	10	ND(0.0050)	ND(0.0050)	0.052	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.018	ND(0.0050)	ND(0.0050)	ND(0.10)
Naphthalene	µg/g	22	ND(0.0050)	ND(0.0050)	ND(0.10)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.19
Phenanthrene	µg/g	50	ND(0.0050)	ND(0.0050)	0.039	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.0061	ND(0.0050)	ND(0.0050)	ND(0.10)
Pyrene	µg/g	100	ND(0.0050)	ND(0.0050)	0.14	0.0098	ND(0.0050)	ND(0.0050)	ND(0.0050)	ND(0.0050)	0.044	ND(0.0050)	ND(0.0050)	ND(0.10)
Metals														
Antimony	µg/g	40	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	0.23
Arsenic	µg/g	12	2.8	2.0	2.0	5.2	1.8	1.9	1.4	1.5	2.3	2.4	1.3	1.8
Barium	µg/g	2000	31	18	25	13	21	21	25	23	42	24	23	94
Beryllium	µg/g	8	0.24	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	0.25	0.26	0.28	ND(0.20)	0.23
Boron (hot water soluble)	µg/g	-	0.069	ND(0.050)	0.25	0.064	0.091	0.057	0.075	0.062	0.11	ND(0.050)	0.059	0.38
Cadmium	µg/g	22	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	ND(0.10)	0.13
Chromium	µg/g	87	22	15	19	27	16	16	18	19	23	33	14	18
Chromium VI (hexavalent)	µg/g	1.4	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)	ND(0.2)
Cobalt	µg/g	300	6.6	4.0	4.6	5.1	4.1	5.7	4.3	4.5	6.1	5.7	4.0	5.2
Copper	µg/g	91	15	7.9	10	11	8.2	13	7.6	9.4	14	6.7	8.0	22
Lead	µg/g	-	9.3	2.1	23	3.7	2.4	3.0	2.4	2.8	3.7	3.2	2.9	17
Mercury	µg/g	50	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)
Molybdenum	µg/g	40	0.66	0.76	0.60	0.73	0.62	0.57	0.65	ND(0.50)	1.1	1.3	0.61	0.71
Nickel	µg/g	50	9.9	5.8	7.3	7.1	6.4	7.1	6.9	7.7	10	9.5	6.0	9.7
Selenium	µg/g	2.9	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)	ND(0.50)
Silver	µg/g	40	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)	ND(0.20)
Sulfur	µg/g	NV	320	78	160	140	120	93	58	88	230	220	75	1100
Thallium	µg/g	1	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	ND(0.050)	0.055	ND(0.050)	ND(0.050)	ND(0.050)
Tin	µg/g	300	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)	ND(5.0)
Uranium	µg/g	300	0.52	0.32	0.35	0.25	0.39	0.32	0.33	0.32	0.54	0.39	0.41	1.3
Vanadium	µg/g	130	49	30	36	63	30	35	48	38	46	86	44	31
Zinc	µg/g	360	42	23	40	28	26	28	29	30	46	37	29	57
PCBs														
Total PCBs	µg/g	33	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.010)	ND(0.030)
Petroleum Hydrocarbons														
Petroleum hydrocarbons F1 (C6-C10)	µg/g	-	ND(10)	ND(10)	ND(50)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(30)
Petroleum hydrocarbons F1 (C6-C10) - less BTEX [2]	µg/g	320	ND(10)	ND(10)	ND(50)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(30)
Petroleum hydrocarbons F2 (C10-C16) [2]	µg/g	260	13	ND(10)	**1300**	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	21
Petroleum hydrocarbons F3 (C16-C34) [2]	µg/g	1700	52	ND(50)	1300	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	150	ND(50)	ND(50)	1500
Petroleum hydrocarbons F4 (C34-C50) [2]	µg/g	3300	ND(50)	ND(50)	730	ND(50)	ND(50)	ND(50)	ND(50)	ND(50)	140	ND(50)	ND(50)	1300
Gravimetric heavy hydrocarbons (F4G)	µg/g	-	-	-	-	-	-	-	-	-	400	-	-	2700
General Chemistry														
Cyanide (free)	µg/g	-	0.02	ND(0.01)	0.01	ND(0.01)	ND(0.01)	ND(0.01)	0.02	0.03	0.02	0.02	0.01	0.07
pH, lab	s.u.	6-8	7.27	7.68	7.25	7.80	7.64	7.87	7.42	**5.96**	7.54	**5.96**	7.13	**5.96**
Moisture	%	-	14	12	7.7	12	12	4.1	6.0	10	12	12	5.6	61

Notes:

1 Canadian Council of Ministers of the Environment (CCME) Tier 1 Industrial Guidelines: As presented in "Canadian Environmental Quality Guidelines Summary Tables, Soil Land Industrial Use", Quality Guidelines for the Protection of Environmental and Human Health, dated 1999, updated 2011 (CCME, 2011). CCME has recently updated their Soil Quality Guidelines (SQGs) for some polycyclic aromatic hydrocarbons (PAHs), as presented in Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health - Polycyclic Aromatic Hydrocarbons 2010 (CCME, 2010).

2 Environment Protection Department (EPD) of the Department of Environment of the GN Tier 1 Criteria for PHC impacts in Surface Soil: As presented in the "Environmental Guideline for Contaminated Site Remediation", Department of Environment, Government of Nunavut, dated April 1999, updated January 2002 and March 2009. The EPD developed this guidance document with reference to the CCME document "Canada - Wide Standards for Petroleum Hydrocarbons (PHC) in Soil", dated 2001, updated in 2008. The PHC standards are consistent between the two guidance documents. The surface soil depth relates to any soil sample collected less than 1.5 metres below ground surface (m bgs).

1.0 Exceeds generic standards.

\- No value

TABLE 4

ANALYTICAL RESULTS- WASTE CHARACTERIZATION OF DRUM CONTENTS
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:				*Drum in Drum Cache 1*
Sample Date:				*7/23/2013*
Parameters	*Units*	*CCME Industrial* [1]	*TCLP O. Reg.* [2]	
VOCs				
1,1,1,2-Tetrachloroethane	µg/g	-	-	ND(0.75)
1,1,1-Trichloroethane	µg/g	50	-	ND(0.75)
1,1,2,2-Tetrachloroethane	µg/g	50	-	ND(0.75)
1,1,2-Trichloroethane	µg/g	50	-	ND(0.75)
1,1-Dichloroethane	µg/g	50	-	ND(0.75)
1,1-Dichloroethene	µg/g	50	-	ND(0.75)
1,2-Dibromoethane (Ethylene dibromide)	µg/g	-	-	ND(0.75)
1,2-Dichlorobenzene	µg/g	10	-	ND(0.75)
1,2-Dichloroethane	µg/g	50	-	ND(0.75)
1,2-Dichloropropane	µg/g	50	-	ND(0.75)
1,3-Dichlorobenzene	µg/g	10	-	ND(0.75)
1,4-Dichlorobenzene	µg/g	10	-	ND(0.75)
2-Butanone (Methyl ethyl ketone) (MEK)	µg/g	-	-	ND(7.5)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/g	-	-	ND(7.5)
Acetone	µg/g	-	-	ND(7.5)
Benzene	µg/g	0.030	-	**1.8**
Bromodichloromethane	µg/g	-	-	ND(0.75)
Bromoform	µg/g	-	-	ND(0.75)
Bromomethane (Methyl bromide)	µg/g	-	-	ND(0.75)
Carbon tetrachloride	µg/g	50	-	ND(0.75)
Chlorobenzene	µg/g	10	-	ND(0.75)
Chloroform (Trichloromethane)	µg/g	50	-	ND(0.75)
cis-1,2-Dichloroethene	µg/g	-	-	ND(0.75)
cis-1,3-Dichloropropene	µg/g	-	-	ND(0.45)
Dibromochloromethane	µg/g	-	-	ND(0.75)
Dichlorodifluoromethane (CFC-12)	µg/g	-	-	ND(0.75)
Ethylbenzene	µg/g	0.082	-	**69**
Hexane	µg/g	6.5	-	**19**
m&p-Xylenes	µg/g	-	-	380
Methyl tert butyl ether (MTBE)	µg/g	-	-	ND(0.75)
Methylene chloride	µg/g	50	-	ND(0.75)
o-Xylene	µg/g	-	-	130
Styrene	µg/g	50	-	ND(0.75)
Tetrachloroethene	µg/g	0.6	-	ND(0.75)
Toluene	µg/g	0.37	-	**25**
trans-1,2-Dichloroethene	µg/g	-	-	ND(0.75)
trans-1,3-Dichloropropene	µg/g	-	-	ND(0.60)
Trichloroethene	µg/g	0.01	-	ND(0.15)
Trichlorofluoromethane (CFC-11)	µg/g	-	-	ND(0.75)
Vinyl chloride	µg/g	-	-	ND(0.30)
Xylenes (total)	µg/g	11	-	**520**
VOCs - TCLP				
1,1-Dichloroethene	mg/L	-	1.4	ND(0.020)
1,2-Dichlorobenzene	mg/L	-	20	ND(0.050)
1,2-Dichloroethane	mg/L	-	0.5	ND(0.050)
1,4-Dichlorobenzene	mg/L	-	0.5	ND(0.050)
2-Butanone (Methyl ethyl ketone) (MEK)	mg/L	-	200	ND(1.0)
Benzene	mg/L	-	0.5	ND(0.020)
Carbon tetrachloride	mg/L	-	0.5	ND(0.020)
Chlorobenzene	mg/L	-	8	ND(0.020)
Chloroform (Trichloromethane)	mg/L	-	10	ND(0.020)
Methylene chloride	mg/L	-	5	ND(0.20)
Tetrachloroethene	mg/L	-	3	ND(0.020)
Trichloroethene	mg/L	-	5	ND(0.020)
Vinyl chloride	mg/L	-	0.2	ND(0.020)
Polycyclic Aromatic Hydrocarbons (PAHs)				
1-Methylnaphthalene	µg/g	-	-	390
2-Methylnaphthalene	µg/g	-	-	650
Acenaphthene	µg/g	-	-	33
Acenaphthylene	µg/g	-	-	ND(1)
Anthracene	µg/g	32	-	ND(1)
Benzo(a)anthracene	µg/g	-	-	ND(2)
Benzo(a)pyrene	µg/g	72	-	ND(1)
Benzo(b)fluoranthene/Benzo(j)fluoranthene	µg/g	-	-	ND(2)
Benzo(g,h,i)perylene	µg/g	-	-	ND(4)
Benzo(k)fluoranthene	µg/g	-	-	ND(2)
Chrysene	µg/g	-	-	ND(2)
Dibenz(a,h)anthracene	µg/g	-	-	ND(4)
Fluoranthene	µg/g	180	-	ND(1)
Fluorene	µg/g	-	-	22
Indeno(1,2,3-cd)pyrene	µg/g	-	-	ND(4)
Naphthalene	µg/g	-	-	240
Phenanthrene	µg/g	-	-	10
Pyrene	µg/g	-	-	ND(1)

TABLE 4

ANALYTICAL RESULTS- WASTE CHARACTERIZATION OF DRUM CONTENTS
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:				*Drum in Drum Cache 1*
Sample Date:				*7/23/2013*
Parameters	*Units*	*CCME Industrial* [1]	*TCLP O. Reg.* [2]	
PAHs - TCLP				
2,3,4,6-Tetrachlorophenol	mg/L	-	10	ND(0.025)
2,4,5-Trichlorophenol	mg/L	-	400	ND(0.005)
2,4,6-Trichlorophenol	mg/L	-	0.5	ND(0.025)
2,4-Dichlorophenol	mg/L	-	90	ND(0.025)
2-Methylphenol	mg/L	-	200	0.029
3&4-Methylphenol	mg/L	-	-	0.098
Benzo(a)pyrene	mg/L	-	0.001	ND(0.001)
Hexachlorobenzene	mg/L	-	0.13	ND(0.1)
Hexachloroethane	mg/L	-	3	ND(0.1)
Nitrobenzene	mg/L	-	2	ND(0.1)
Pentachlorophenol	mg/L	-	6	ND(0.025)
Pyridine	mg/L	-	5	ND(0.1)
Total Cresol (reported not calculated)	mg/L	-	-	0.13
Metals - TCLP				
Arsenic	mg/L	-	2.5	ND(0.2)
Barium	mg/L	-	100	ND(0.2)
Boron	mg/L	-	500	ND(0.1)
Cadmium	mg/L	-	0.5	ND(0.05)
Chromium	mg/L	-	5	ND(0.1)
Lead	mg/L	-	5	ND(0.1)
Mercury	mg/L	-	0.1	ND(0.001)
Selenium	mg/L	-	1	ND(0.1)
Silver	mg/L	-	5	ND(0.01)
Uranium	mg/L	-	10	ND(0.01)
PCBs				
Aroclor-1016 (PCB-1016)	µg/g	-	-	ND(1)
Aroclor-1221 (PCB-1221)	µg/g	-	-	ND(1)
Aroclor-1232 (PCB-1232)	µg/g	-	-	ND(1)
Aroclor-1242 (PCB-1242)	µg/g	-	-	ND(1)
Aroclor-1248 (PCB-1248)	µg/g	-	-	ND(1)
Aroclor-1254 (PCB-1254)	µg/g	-	-	ND(1)
Aroclor-1260 (PCB-1260)	µg/g	-	-	ND(1)
Aroclor-1262 (PCB-1262)	µg/g	-	-	ND(1)
Aroclor-1268 (PCB-1268)	µg/g	-	-	ND(1)
Total PCBs	µg/g	33	-	ND(1)
Petroleum Hydrocarbons				
Petroleum hydrocarbons F1 (C6-C10)	µg/g	-	-	8200
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	µg/g	-	-	7800
Petroleum hydrocarbons F2 (C10-C16)	µg/g	-	-	97000
Petroleum hydrocarbons F3 (C16-C34)	µg/g	-	-	90000
Petroleum hydrocarbons F4 (C34-C50)	µg/g	-	-	130000
Gravimetric heavy hydrocarbons (F4G)	µg/g	-	-	500000
General Chemistry				
Initial pH	s.u.			7.20
Final pH	s.u.			4.93
Ignitability	none			NI
Percent solids, vol.	%			100

Notes:

1 Canadian Council of Ministers of the Environment (CCME) Tier 1 Industrial Guidelines: As presented in "Canadian Environmental Quality Guidelines Summary Tables, Soil Land Industrial Use", Quality Guidelines for the Protection of Environmental and Human Health, dated 1999, updated 2011 (CCME, 2011). CCME has recently updated their Soil Quality Guidelines (SQGs) for some polycyclic aromatic hydrocarbons (PAHs), as presented in Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health- Polycyclic Aromatic Hydrocarbons 2010 (CCME, 2010).

2 Ontario Regulation 347- General Waste Management, Schedule 4, Leachate Quality Criteria

1.0 Exceeds generic standards.

- No value

TABLE 5

ANALYTICAL RESULTS GROUNDWATER SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:					*TP06*	*TP12*
Sample Date:					*7/23/2013*	*7/23/2013*
Parameters	*Units*	*CCME [1] Short Term a*	*CCME [1] Long Term b*	*MOE Table 3 c*		
Volatiles						
1,1,1,2-Tetrachloroethane	µg/L	-	-	3.3	ND(0.50)	ND(0.50)
1,1,1-Trichloroethane	µg/L	-	-	640	ND(0.20)	ND(0.20)
1,1,2,2-Tetrachloroethane	µg/L	-	-	3.2	ND(0.50)	ND(0.50)
1,1,2-Trichloroethane	µg/L	-	-	4.7	ND(0.50)	ND(0.50)
1,1-Dichloroethane	µg/L	-	-	320	ND(0.20)	ND(0.20)
1,1-Dichloroethene	µg/L	-	-	1.6	ND(0.20)	ND(0.20)
1,2-Dibromoethane (Ethylene dibromide)	µg/L	-	-	0.25	ND(0.20)	ND(0.20)
1,2-Dichlorobenzene	µg/L	-	0.7	4600	ND(0.50)	ND(0.50)
1,2-Dichloroethane	µg/L	-	100	1.6	ND(0.50)	ND(0.50)
1,2-Dichloropropane	µg/L	-	-	16	ND(0.20)	ND(0.20)
1,3-Dichlorobenzene	µg/L	-	150	9600	ND(0.50)	ND(0.50)
1,4-Dichlorobenzene	µg/L	-	26	8	ND(0.50)	ND(0.50)
2-Butanone (Methyl ethyl ketone) (MEK)	µg/L	-	-	470000	ND(10)	ND(10)
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	µg/L	-	-	140000	ND(5.0)	ND(5.0)
Acetone	µg/L	-	-	130000	ND(10)	ND(10)
Benzene	µg/L	-	370	44	ND(0.20)	ND(0.20)
Bromodichloromethane	µg/L	-	-	85000	ND(0.50)	ND(0.50)
Bromoform	µg/L	-	-	380	ND(1.0)	ND(1.0)
Bromomethane (Methyl bromide)	µg/L	-	-	5.6	ND(0.50)	ND(0.50)
Carbon tetrachloride	µg/L	-	13.3	0.79	ND(0.20)	ND(0.20)
Chlorobenzene	µg/L	-	1.3	630	ND(0.20)	ND(0.20)
Chloroform (Trichloromethane)	µg/L	-	1.8	2.4	ND(0.20)	ND(0.20)
cis-1,2-Dichloroethene	µg/L	-	-	1.6	ND(0.50)	ND(0.50)
cis-1,3-Dichloropropene	µg/L	-	-	-	ND(0.30)	ND(0.30)
Dibromochloromethane	µg/L	-	-	82000	ND(0.50)	ND(0.50)
Dichlorodifluoromethane (CFC-12)	µg/L	-	-	4400	ND(1.0)	ND(1.0)
Ethylbenzene	µg/L	-	90	2300	ND(0.20)	ND(0.20)
Hexane	µg/L	-	-	51	ND(1.0)	ND(1.0)
m&p-Xylenes	µg/L	-	-	-	ND(0.20)	ND(0.20)
Methyl tert butyl ether (MTBE)	µg/L	-	10000	190	ND(0.50)	ND(0.50)
Methylene chloride	µg/L	-	98.1	610	ND(2.0)	ND(2.0)
o-Xylene	µg/L	-	-	-	ND(0.20)	ND(0.20)
Styrene	µg/L	-	72	1300	ND(0.50)	ND(0.50)
Tetrachloroethene	µg/L	-	110	1.6	0.58	ND(0.20)
Toluene	µg/L	-	2	18000	ND(0.20)	ND(0.20)
trans-1,2-Dichloroethene	µg/L	-	-	1.6	ND(0.50)	ND(0.50)
trans-1,3-Dichloropropene	µg/L	-	-	-	ND(0.40)	ND(0.40)
Trichloroethene	µg/L	-	21	1.6	ND(0.20)	ND(0.20)
Trichlorofluoromethane (CFC-11)	µg/L	-	-	2500	ND(0.50)	ND(0.50)
Vinyl chloride	µg/L	-	-	0.5	ND(0.20)	ND(0.20)
Xylenes (total)	µg/L	-	-	4200	ND(0.20)	ND(0.20)
Semi-volatiles						
2-Methylnaphthalene	µg/L	-	-	1800	0.066 J	0.12 J
Acenaphthene	µg/L	-	5.8	600	0.31 J	ND(0.02) J
Acenaphthylene	µg/L	-	-	1.8	0.032 J	ND(0.02) J
Acridine	µg/L	-	4.4	-	0.14 J	ND(0.02) J
Anthracene	µg/L	-	0.012	2.4	**0.36 J[b]**	ND(0.02) J
Benzo(a)anthracene	µg/L	-	0.018	4.7	**2.1 J[b]**	**0.03 J[b]**
Benzo(a)pyrene	µg/L	-	0.015	0.81	**2.3 J[bc]**	**0.08 J[b]**
Benzo(b)fluoranthene/Benzo(j)fluoranthene	µg/L	-	-	0.75	**3.3 J[c]**	0.12 J
Benzo(b)pyridine (Quinoline)	µg/L	-	3.4	-	ND(0.02) J	ND(0.05) J
Benzo(c)phenanthrene	µg/L	-	-	-	ND(0.3) J	ND(0.02) J
Benzo(e)pyrene	µg/L	-	-	-	2.0 J	0.30 J
Benzo(g,h,i)perylene	µg/L	-	-	0.2	**1.2 J[c]**	0.17 J
Benzo(k)fluoranthene	µg/L	-	-	0.4	**1.1 J[c]**	0.03 J
Chrysene	µg/L	-	-	1	**1.7 J[c]**	0.07 J
Dibenz(a,h)anthracene	µg/L	-	-	0.52	0.37 J	ND(0.02) J
Fluoranthene	µg/L	-	0.04	130	**3.3 J[b]**	**0.09 J[b]**
Fluorene	µg/L	-	3	400	0.25 J	ND(0.02) J
Indeno(1,2,3-cd)pyrene	µg/L	-	-	0.2	**1.6 J[c]**	0.07 J
Naphthalene	µg/L	-	1.1	1400	0.11 J	0.08 J
Perylene	µg/L	-	-	-	0.54 J	ND(0.02) J
Phenanthrene	µg/L	-	0.4	580	**1.6 J[b]**	0.06 J
Pyrene	µg/L	-	0.025	68	**2.8 J[b]**	**0.15 J[b]**
Total benzo(a)pyrene equivalents	µg/L	-	-	-	3.6 J	0.12 J

TABLE 5

ANALYTICAL RESULTS GROUNDWATER SAMPLES
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT
IQALUIT, NUNAVUT

Sample Location:					*TP06*	*TP12*
Sample Date:					*7/23/2013*	*7/23/2013*
Parameters	*Units*	*CCME [1] Short Term*	*CCME [1] Long Term*	*MOE Table 3*		
Metals						
Aluminum (dissolved)	µg/L	-	100	-	31 / ND(40)	61 / 270[b]
Antimony (dissolved)	µg/L	-	-	20000	ND(0.6)	ND(0.6)
Arsenic (dissolved)	µg/L	-	5	1900	0.33	ND(0.2)
Barium (dissolved)	µg/L	-	-	29000	ND(10)	ND(10)
Beryllium (dissolved)	µg/L	-	-	67	ND(1)	ND(1)
Boron (dissolved)	µg/L	29000	1500	45000	32	35
Cadmium (dissolved)	µg/L	-	-	2.7	ND(0.013) / ND(0.013)	ND(0.0058) / ND(0.0058)
Calcium (dissolved)	µg/L	-	-	-	65000	39000
Chromium (dissolved)	µg/L	-	-	810	ND(1) / ND(10)	ND(1) / ND(10)
Chromium VI (hexavalent) (dissolved)	µg/L	-	1	140	ND(1)	ND(1)
Cobalt (dissolved)	µg/L	-	-	66	0.36	ND(0.3)
Copper (dissolved)	µg/L	-	2	87	2.5[b]	3.2[b]
Iron (dissolved)	µg/L	-	300	-	ND(60)	120
Lead (dissolved)	µg/L	-	1	25	0.24	ND(0.2)
Lithium (dissolved)	µg/L	-	-	-	ND(20)	ND(20)
Magnesium (dissolved)	µg/L	-	-	-	6400	5700
Manganese (dissolved)	µg/L	-	-	-	ND(4)	ND(4)
Mercury	µg/L	-	0.026	0.29	0.06[b]	0.17[b]
Molybdenum (dissolved)	µg/L	-	73	9200	1	4.6
Nickel (dissolved)	µg/L	-	25	490	0.81	0.54
Phosphorus (dissolved)	µg/L	-	-	-	ND(100)	ND(100)
Potassium (dissolved)	µg/L	-	-	-	1500	4600
Selenium (dissolved)	µg/L	-	1	63	0.26	ND(0.2)
Silicon (dissolved)	µg/L	-	-	-	2700	3200
Silver (dissolved)	µg/L	-	0.1	1.5	ND(0.1)	ND(0.1)
Sodium (dissolved)	µg/L	-	-	2300000	7400	52000
Strontium (dissolved)	µg/L	-	-	-	120	98
Sulfur (dissolved)	µg/L	-	-	-	3100	1600
Thallium (dissolved)	µg/L	-	0.8	510	ND(0.2)	ND(0.2)
Tin (dissolved)	µg/L	-	-	-	ND(1)	ND(1)
Titanium (dissolved)	µg/L	-	-	-	ND(1)	1
Uranium (dissolved)	µg/L	33	15	420	0.53	1.1
Vanadium (dissolved)	µg/L	-	-	250	ND(1)	ND(1)
Zinc (dissolved)	µg/L	-	30	1100	ND(3)	ND(3)
PCBs						
Aroclor-1016 (PCB-1016)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1221 (PCB-1221)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1232 (PCB-1232)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1242 (PCB-1242)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1248 (PCB-1248)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1254 (PCB-1254)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1260 (PCB-1260)	µg/L	-	-	-	0.03	ND(0.01)
Aroclor-1262 (PCB-1262)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Aroclor-1268 (PCB-1268)	µg/L	-	-	-	ND(0.01)	ND(0.01)
Total PCBs	µg/L	-	0.001	7.8	0.03[b]	ND(0.01)
Petroleum Hydrocarbons						
Petroleum hydrocarbons F1 (C6-C10)	µg/L	-	-	750	ND(25)	ND(25)
Petroleum hydrocarbons F1 (C6-C10) - less BTEX	µg/L	-	-	750	ND(25)	ND(25)
Petroleum hydrocarbons F2 (C10-C16)	µg/L	-	-	150	ND(100)	ND(100)
Petroleum hydrocarbons F3 (C16-C34)	µg/L	-	-	500	ND(200)	ND(200)
Petroleum hydrocarbons F4 (C34-C50)	µg/L	-	-	500	ND(200)	ND(200)
General Chemistry						
Cyanide (total)	µg/L	-	5	66	ND(2)	ND(2)
pH, lab	s.u.	-	6.5-9	-	7.91	7.92

Notes:

1 Canadian Environmental Quality Guidelines Summary Tables, Water Quality Guidelines for the Protection of Aquatic, Freshwater, dated 1999, updated 2012.
a Short Term Guidelines
b Long Term Guidelines
c Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, Table 3: Full Depth Generic Site Condition Standards in a Non-Potable Ground Water Condition (coarse-textured soils), dated April 15, 2011

TABLE 6

REMEDIAL OPTION MATRIX
PRE-EXISTING ENVIRONMENTAL CONTAMINATION ASSESSMENT AND MITIGATION PLAN
IQALUIT INTERNATIONAL AIRPORT,
IQALUIT, NUNAVUT

Item	*Waste Streams To Be Managed*	*Location*	*Remedial Options*	*Estimated Waste Volume (m^3)*	*Preferred Option*	*Assumptions/Comments*
1	Drums containing tar product	Drum Cache - adjacent to Old Asphalt Plant	Place in On-Site Waste Containment Cell Place in secure container for off-Site disposal	171	Place in On-Site Waste Containment Cell	Assume 300-55 gallon steel drums. Drums will be placed in containment cell in as is condition and will not be crushed. Assume that the drums are 0.597 m in diameter and 0.876 m in height. For volume calculations, assume a rectangular prism using these two dimensions as length, width and height. Based on this, 1-55-gallon drum will make up 0.876x0.597x0.597 = 0.32 m3. Therefore, 300-55-gallon drums will make up approximately 96 m3. Plus, include 50,000 litre tank. From site photographs, and research of 50,000 L tank dimensions, assume tank is 3.2 m diameter x 7.32 m in length. Assume rectangular prism - 3.2x3.2x7.32 = 75 m3
2	Soil impacted with ethylbenzene	Drum Cache - adjacent to Old Asphalt Plant	Place in On-Site Waste Containment Cell	135	Place in On-Site Waste Containment Cell (Co-dispose with drums)	Assume 30 m x 30 m area of impacted soil in the vicinity of drums. Assume strip top 0.15 m of soil. Therefore total volume = 0.15x30x30 = 135 m3 of soil to be co-disposed of with drums to fill void space.
3	Tar product on ground surface	Drum Cache - adjacent to Old Asphalt Plant	Place in On-Site Waste Containment Cell Place in secure container for off-Site disposal	Included in Item 2 above.	Place in On-Site Waste Containment Cell	Excavation volume included in "soil impacted with ethylbenzene" area.
4	PHC-impacted soil	TP24, LTU1, LTU2, and Former LTU located within Former Fire Training Area	Place as fill under new asphalt areas Place in On-Site Waste Containment Cell	6,301	Place as fill under new asphalt areas	Assume 10m x 10m x1mbgs excavation = 100 m3 in the vicinity of TP24. LTU1 = (1 m thick soil +0.15 mbgs) x 1,250 m2 area = 1,438 m3. LTU2 = (1.5 m thick soil + 0.15mbgs) x 2,500 m2 area = 4,125 m3. Former LTU = 0.15 m bgs x 4,250 m2 = 638 m3. Confirm with the AIP that volume can be used in construction.
5	Buried asbestos	Former Fire Training Area	Place in On-Site Waste Containment Cell Place in secure container for off-Site disposal	400	Place in On-Site Waste Containment Cell	Assume 20 m x 20 m x 1 mbgs excavation = 400 m3. Test pitting required to confirm actual limits of asbestos waste.
6	Arsenic-impacted soil	Adjacent to runway	Place as fill under new asphalt areas Place in On-Site Waste Containment Cell	100	Place as fill under new asphalt areas	Assume 10 m x 10 m x 1 mbgs excavation = 100 m3. Confirm with the AIP that volume can be used in construction.
7	PAH-impacted perched groundwater	TP6, south of Arctic College	Direct ground discharge Treatment followed by ground discharge	Waste volume not applicable to containment cell.	Direct ground discharge	Level of PAHs marginally exceed criteria and will likely pass Risk Assessment
8	Building Materials - Asbestos, lead, mercury, PCBs [2]	T-25, T-116, T-120 (Buildings)	Place in secure container for off-Site disposal	Waste volume not applicable to containment cell.	Place in secure container for off-Site disposal	Information based on report entitled Designated Substances and Hazardous Materials Survey at the Iqaluit Airport, Building T-25, T-75, T-116 and T-120. Note: Building T-75 not included in scope of work. Only asbestos volumes included as PCBs and mercury may not be suitable for disposal at the cell (and will take up marginal volume), and lead paint can be disposed of as non hazardous construction debris. For asbestos containing material, see Table 2 of report for areas and assume 0.1 m thick material to be removed. ACM volume = (12m2 + 12m2 + 45m2 + 60 m2) x 0.1 m = 12.9 m3.
			Total Waste Materials	7,107		
			Total Volume for Waste Containment Cell [1]	706		

Notes:

PHC - Petroleum Hydrocarbons
PAH - Polycyclic Aromatic Hydrocarbons
PCBs - Polychlorinated Biphenyls
(1) Based on information provided by Arctic Infrastructure Partners, CRA has assumed that all of the PHC and arsenic-impacted soil can be used as fill under new asphalt areas. If there is any surplus soil it should be disposed of in the waste containment cell.
(2) CRA has been advised by Arctic Infrastructure Partners that all designated substances removed from the buildings will be shipped off-Site.

APPENDIX A

HISTORICAL REPORTS REVIEWED BY CRA

APPENDIX A

HISTORICAL REPORTS

AIP provided the following Historical Reports to CRA:

- Abandoned Bitumen Drum Cache Remediation Abandoned Sea Can and Associated Drum Remediation, Iqaluit Airport, June 2008, Interim Draft Report, Winnipeg Environmental Remediations Incorporated
- Abandoned Bitumen Drum Cache Remediation, Iqaluit Airport, December 2008, Environmental Remediation Report, Winnipeg Environmental Remediations Incorporated
- Airport History, Iqaluit, Volume One- Text, Report, March 1999, Report, Owen Cooke (historical research/archives consultant)
- Airport History, Iqaluit, Volume Two- Appendices A to E, March 1999, Report, Owen Cooke (historical research/archives consultant)
- Airport History, Iqaluit, Volume Three- Appendix F-Building Inventory- Text, Report, March 1999, Owen Cooke (historical research/archives consultant)
- Airport Map, no date
- Airport Photo of Iqaluit Airport Circa 1950s, no date
- Airport Photo with Zones of Contamination, no date
- APEC 1- Analytical Results for Surface Water & Vegetation, Figure 1, Dump Site, Iqaluit, NU, December 2008, Franz Environmental Inc.
- Application for Lease/Licence/Facility Alteration Form, Government of Nunavut, no date.
- Apron I Soil Remediation, Abandoned Hydrant and Distribution System, Iqaluit Airport, Iqaluit, Nunavut Territory, November 2007, Closure Report, Winnipeg Environmental Remediations Incorporated
- Apron 1 Soil Remediation Abandoned Hydrant and Distribution System, Technical and Project Team Proposal, July 2006, Proposal, Winnipeg Environmental Remediations Incorporated
- Asbestos Assessment, Iqaluit Airport, Transport Canada Facilities, March 1996, Report, Arctic Environmental Services Ltd.
- Asbestos Removal and Abatement, Iqaluit Airport, December 2007, Draft Report, Winnipeg Environmental Remediations Incorporated
- Bottle Request Form, September 1997
- Byer's Gas Bar Map, no date
- Consulting Services for Asbestos Abatement at Iqaluit Airport Report, N.W.T., Report, September 1996, LEX scientific Inc
- Dépôt Pétroliers, Station-Service, Entrepôt de Barils et Aérogare de Iqaluit, Ile de Baffin, Caractérisation Complémentaire, Septembre 1993, Report, ADS Groupe-Conseil Inc.
- Dépôt Pétroliers, Station-Service, Entrepôt de Barils et Aérogare de Iqaluit, Ile de Baffin, Phase 2, Compte Rendu sur l'État des Sols et des Eaux Souterraine, Février 1994, Report, ADS Groupe-Conseil Inc.
- Dépôt Pétrolier de Transports Canada, Groupe des Aéroports, Iqaluit, Territoires du Nord-Ouest, Suivi du Traitement des sols Rapport d'Étape #1, Janvier 1995, Report, Entraco

APPENDIX A

HISTORICAL REPORTS

- Designated Substances and Hazardous Materials Survey at the Iqaluit International Airport, Building T-25, T-75, T-116 and T-120, February 2013, Final Report, Genivar Inc.
- Desk Top Review of Scrap Metal Dump Site West of Iqaluit Airport, Iqaluit, Nunavut, Canada, March 2001, Report, Earth Tech Canada Inc.
- Enviro-Test Fast Faxed Analysis Report, Fax, Enviro-Test Laboratories, September 1997
- Environmental Audit, Volume II: Environmental Characterization, April 1995, Final Report, Biogenie Inc.
- Environmental Baseline Study- 1995, Iqaluit Airport, January 1996, Report, M.M. Dillon Limited
- Environmental Baseline Study, Part B- Site Audit and Tank Assessment, Only Section 5.1- Transport Canada, (1995), M.M. Dillion Limited
- Environmental Baseline Study, Part B- Site Audit and Tank Assessment, Only Section 5.7- Byer's Gas Bar, (1995), M.M. Dillion Limited
- Environmental Baseline Study, Part B- Site Audit and Tank Assessment, Only Section 5.11- Government of the Northwest Territories (GNWT), (1995), M.M. Dillion Limited
- Environmental Baseline Study, Part B- Site Audit and Tank Assessment, Only Section 5.17- National Defence, (1995), M.M. Dillion Limited
- Environmental Baseline Study, Part B- Site Audit and Tank Assessment, Only Section 5.20- Shell Canada (Mel Fowler Fuels), (1995), M.M. Dillion Limited
- Environmental Baseline Study- 1996, Iqaluit Airport, Part C Environmental Investigations, Report, January 1996, Report, M.M. Dillon Limited
- Environmental Baseline Study Reaudit, Iqaluit Airport, July 1999, Final Report, Dillon Consulting Limited
- Environmental Characterization, November 1994, Preliminary Report, Biogenie Inc.
- Environmental Construction Operations Plan (ECO Plan), Iqaluit Airport, Report, no date
- Environmental Site Assessment, Abandoned Hydrant and Distribution System, Apron 1, Iqaluit Airport, February 2005, Final Report, Dillon Consulting Limited
- Field Notes, Sample Logs/Plans, Photographic Negatives for Environmental Site Investigation Report, Iqaluit Airport, February 1999, Final Submittal, An-Geo Environmental Consultants Ltd.
- Field Report- Phase III Environmental Site Assessment Vehicle Dump and Community Landfill, Iqaluit, Nunavut, January 2010, Draft Report, Franz Environmental Inc.
- Field Trip/Inspections Iqaluit AP- Sept 10-12'97, Fax, Government of the Northwest Territories, Department of Transportation
- Fire Training Area Remediation 2000 Summary Report, Report, Iqaluit Airport, April 2001, Transport Canada, Prairie and Northern Region Programs, Environmental Affairs
- Foundation Soils Investigation, Settlement of Apron III Extension, Iqaluit Airport, January 1997, Report, Agra Earth & Environmental
- Gas Bar, Iqaluit Airport, Correspondence from BDC, fax, September 1997

APPENDIX A

HISTORICAL REPORTS

- Hydrocarbon Sampling Report, Byer's Gaz Bar, Iqaluit Airport, October 1997, Report, Glenn Allan, Environmental Analyst, Transportation Planning Division
- Iqaluit Airport, Plan, January 2005
- Iqaluit Airport, Plan, November 1998
- Iqaluit Airport Layout, September 1997
- Iqaluit Airport Layout Sheet 4 of 4, September 1997
- Iqaluit Airport Pipeline Support C-503, February 5, 1993
- Iqaluit AP, Arctic Airports, September 1997
- Iqaluit NWT Compiled Plan, August 1990
- Land Treatment Unit Decommissioning, Iqaluit Airport, February 2012, Final Report, Biogénie, a division of EnGlobe Corp.
- NWT Spill Report, August 1997, Fax
- Phase I/II Environmental Site Assessment, Vehicle Dump and Community Landfill, Iqaluit, Nunavut, February 2009, Report, Franz Environmental Inc.
- Phase II Environmental Site Assessment Subsurface Investigation, First Air Cargo Hangar and Office Building, Iqaluit, Nunavut, November 2007, Report, Water and Earth Science Associates Ltd.
- Photographs, (1995)
- Pro Forma Contract between the Government of Northwest Territories and Komex International Ltd., August 1999
- Sampling Instructions, no date
- Schedule "B", Legal Descriptions of Arctic "A" Airports, Article 4, Schedules – GNWT/Canada Transfer Agreement, July 1995
- Soil and Groundwater Monitoring Program Results, File ENV-800, Correspondence from Government of Northwest Territories to Airport Manager, Iqaluit Airport, June 1999
- Survey & Investigative Work, Iqaluit Airport, Plan K-800, September 1993, Uma Engineering Ltd.
- Transport Canada – Airport Groups, Iqaluit Airport, Environmental Audit, Tenant Questionnaires, Byer's, (1995)
- Transport Canada – Airport Groups, Iqaluit Airport, Environmental Audit, Tenant Questionnaires, Department of National Defence, (1995)
- Transport Canada – Airport Groups, Iqaluit Airport, Environmental Audit, Tenant Questionnaires, Shell Canada- Fowler Fuels, (1995)
- Transport Canada – Airport Groups, Iqaluit Airport, Environmental Audit, Tenant Questionnaires, Transport Canada, (1995)
- Upcoming visit to Iqaluit A/P, Fax from Government of Northwest Territories, Department of Transportation to Iqaluit Airport, September 1997
- Your File NKCP5156-107251, Iqaluit, NT, July 1997, Correspondence from Northwest Territories Transportation to National Defence
- Your July 9th letter to Jim Winsor Re: Byer's Gas Bar- Iqaluit Airport, Emails, September 1997

APPENDIX B

PHOTOGRAPHIC LOG

PHOTO 1. AIR TERMNAL BUILDING, IQALUIT INTERNATIONAL AIRPORT (JULY 24, 2013), LOOKING SOUTH

PHOTO 2. RUNWAY AND TAXIWAYS, IQALUIT INTERNATIONAL AIRPORT (JULY 24, 2013), LOOKING SOUTH

PHOTO 3. DRUM CACHE NO. 1 (JULY 24, 2013), LOOKING SOUTHWEST

PHOTO 4. DRUM CACHE NO. 1 (JULY 24, 2013), LOOKING SOUTHWEST

PHOTO 5. DRUM CACHE NO. 1 (JULY 24, 2013), LOOKING EAST

PHOTO 6. DRUMS CACHE NO. 1 (JULY 24, 2013), LOOKING EAST

PHOTO 7. DRUMS CACHE NO. 1 (JULY 24, 2013), LOOKING NORTHWEST

PHOTO 8. TAR PRODUCT ON GROUND IN DRUMS CACHE NO. 1 (JULY 24, 2013)

PHOTO 9. PARTIALLY DECOMMISSIONED LAND TREATMENT UNIT (LTU) (JULY 23, 2013), LOOKING NORTH

PHOTO 10. EXCAVATED SOIL FROM DECOMMISSIONED LTU (JULY 23, 2013), LOOKING NORTHWEST

PHOTO 11. EXISTING LTU (JULY 23, 2013), LOOKING NORTHWEST

PHOTO 12. BURRIED ASBESTOS WASTE (JULY 23, 2013) - LOOKING SOUTHWEST

PHOTO 13. GROUNDWATER IN TEST PIT NO. 12 (JULY 23, 2013)

APPENDIX C

ANALYTICAL REPORTS

Maxxam

Success Through Science®

Your P.O. #: 20-016130-1
Your Project #: 82415
Site#: 82415
Site Location: IQALUIT, NUNAVUT
Your C.O.C. #: 42813605, 428136-05-01

Attention: JENNIFER BALKWILL

CONESTOGA-ROVERS AND ASSOCIATES LTD
651 COLBY DRIVE
WATERLOO, ON
CANADA N2V 1C2

Report Date: 2013/07/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B364276
Received: 2013/07/26, 08:40

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Cadmium - low level CCME - Dissolved	2	N/A	2013/07/29	AB SOP-00043	EPA 200.8
Hexavalent Chromium	2	N/A	2013/07/27	CAL SOP-00056	SM 3500-Cr B
Elements by ICP (Dissolved) Lab Filtered	2	N/A	2013/07/28	AB SOP-00042	EPA 200.7
Elements by ICPMS - Dissolved - Filtered	2	N/A	2013/07/29	AB SOP-00043	EPA 200.8
Benzo[a]pyrene Equivalency	2	N/A	2013/07/28	AB SOP-00003	EPA 8270D
Polycyclic Aromatic HC (Low Level) Water (1)	2	2013/07/26	2013/07/28	AB SOP-00003 AB SOP-00037	EPA 3510C/8270D
Cyanide (Total) Low level	2	2013/07/28	2013/07/28	CAL SOP-00073	EPA 335.2

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

(1) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.

Encryption Key

Geraldlyn Gouthro
29 Jul 2013 17:05:04 -06:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Geraldyn Gouthro, Client Service Specialist
Email: GGouthro@maxxam.ca
Phone# (780) 577-7173

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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.

Total cover pages: 1

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		HA1779			HA1779		
Sampling Date		2013/07/23 11:00			2013/07/23 11:00		
COC Number		428136-05-01			428136-05-01		
	UNITS	**GW-82415-072313-HS-TP6**	**RDL**	**QC Batch**	**GW-82415-072313-HS-TP6 Lab-Dup**	**RDL**	**QC Batch**
Low Level Elements							
Dissolved Cadmium (Cd)	ug/L	0.013	0.0050	7027968	N/A	0.0050	N/A
Elements							
Dissolved Aluminum (Al)	mg/L	0.031	0.0030	7030008	0.035	0.0030	7030008
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	7030008	<0.00060	0.00060	7030008
Dissolved Arsenic (As)	mg/L	0.00033	0.00020	7030008	<0.00020	0.00020	7030008
Dissolved Barium (Ba)	mg/L	<0.010	0.010	7028172	<0.010	0.010	7028172
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	7030008	<0.0010	0.0010	7030008
Dissolved Boron (B)	mg/L	0.032	0.020	7028172	0.028	0.020	7028172
Dissolved Cadmium (Cd)	mg/L	0.000013	0.0000050	7030008	0.000015	0.0000050	7030008
Dissolved Calcium (Ca)	mg/L	65	0.30	7028172	65	0.30	7028172
Dissolved Chromium (Cr)	mg/L	<0.010	0.010	7028172	<0.0010	0.0010	7030008
Dissolved Cobalt (Co)	mg/L	0.00036	0.00030	7030008	<0.00030	0.00030	7030008
Dissolved Copper (Cu)	mg/L	0.0025	0.00020	7030008	0.0023	0.00020	7030008
Dissolved Iron (Fe)	mg/L	<0.060	0.060	7028172	<0.060	0.060	7028172
Dissolved Lead (Pb)	mg/L	0.00024	0.00020	7030008	<0.00020	0.00020	7030008
Dissolved Lithium (Li)	mg/L	<0.020	0.020	7028172	<0.020	0.020	7028172
Dissolved Magnesium (Mg)	mg/L	6.4	0.20	7028172	6.5	0.20	7028172
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0040	7028172	<0.0040	0.0040	7028172
Dissolved Molybdenum (Mo)	mg/L	0.0010	0.00020	7030008	0.0010	0.00020	7030008
Dissolved Nickel (Ni)	mg/L	0.00081	0.00050	7030008	0.00065	0.00050	7030008
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	7028172	<0.10	0.10	7028172
Dissolved Potassium (K)	mg/L	1.5	0.30	7028172	1.5	0.30	7028172
Dissolved Selenium (Se)	mg/L	0.00026	0.00020	7030008	<0.00020	0.00020	7030008
Dissolved Silicon (Si)	mg/L	2.7	0.10	7028172	2.7	0.10	7028172
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	7030008	<0.00010	0.00010	7030008
Dissolved Sodium (Na)	mg/L	7.4	0.50	7028172	7.5	0.50	7028172
Dissolved Strontium (Sr)	mg/L	0.12	0.020	7028172	0.12	0.020	7028172
Dissolved Sulphur (S)	mg/L	3.1	0.20	7028172	3.2	0.20	7028172
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	7030008	<0.00020	0.00020	7030008
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	7030008	<0.0010	0.0010	7030008

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		HA1779			HA1779		
Sampling Date		2013/07/23 11:00			2013/07/23 11:00		
COC Number		428136-05-01			428136-05-01		
	UNITS	**GW-82415-072313-HS-TP6**	**RDL**	**QC Batch**	**GW-82415-072313-HS-TP6 Lab-Dup**	**RDL**	**QC Batch**
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	7030008	<0.0010	0.0010	7030008
Dissolved Uranium (U)	mg/L	0.00053	0.00010	7030008	0.00053	0.00010	7030008
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	7030008	<0.0010	0.0010	7030008
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	7030008	<0.0030	0.0030	7030008

RDL = Reportable Detection Limit

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		HA1780		
Sampling Date		2013/07/23 16:00		
COC Number		428136-05-01		
	UNITS	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
Low Level Elements				
Dissolved Cadmium (Cd)	ug/L	0.0058	0.0050	7027968
Elements				
Dissolved Aluminum (Al)	mg/L	0.061	0.0030	7030008
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	7030008
Dissolved Arsenic (As)	mg/L	<0.00020	0.00020	7030008
Dissolved Barium (Ba)	mg/L	<0.010	0.010	7028172
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	7030008
Dissolved Boron (B)	mg/L	0.035	0.020	7028172
Dissolved Cadmium (Cd)	mg/L	0.0000058	0.0000050	7030008
Dissolved Calcium (Ca)	mg/L	39	0.30	7028172
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	7030008
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00030	7030008
Dissolved Copper (Cu)	mg/L	0.0032	0.00020	7030008
Dissolved Iron (Fe)	mg/L	0.12	0.060	7028172
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	7030008
Dissolved Lithium (Li)	mg/L	<0.020	0.020	7028172
Dissolved Magnesium (Mg)	mg/L	5.7	0.20	7028172
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0040	7028172
Dissolved Molybdenum (Mo)	mg/L	0.0046	0.00020	7030008
Dissolved Nickel (Ni)	mg/L	0.00054	0.00050	7030008
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	7028172
Dissolved Potassium (K)	mg/L	4.6	0.30	7028172
Dissolved Selenium (Se)	mg/L	<0.00020	0.00020	7030008
Dissolved Silicon (Si)	mg/L	3.2	0.10	7028172
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	7030008
Dissolved Sodium (Na)	mg/L	52	0.50	7028172
Dissolved Strontium (Sr)	mg/L	0.098	0.020	7028172
Dissolved Sulphur (S)	mg/L	1.6	0.20	7028172
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	7030008
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	7030008
Dissolved Titanium (Ti)	mg/L	0.0010	0.0010	7030008
Dissolved Uranium (U)	mg/L	0.0011	0.00010	7030008

RDL = Reportable Detection Limit

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

REGULATED METALS (CCME/AT1) - DISSOLVED

Maxxam ID		HA1780		
Sampling Date		2013/07/23 16:00		
COC Number		428136-05-01		
	UNITS	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	7030008
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	7030008

RDL = Reportable Detection Limit

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		HA1779	HA1780		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00		
COC Number		428136-05-01	428136-05-01		
	UNITS	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
Misc. Inorganics					
Strong Acid Dissoc. Cyanide (CN)	mg/L	<0.0020	<0.0020	0.0020	7028140
Dissolved Hex. Chromium (Cr 6+)	mg/L	<0.0010	<0.0010	0.0010	7027587

RDL = Reportable Detection Limit

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		HA1779		HA1780		
Sampling Date		2013/07/23 11:00		2013/07/23 16:00		
COC Number		428136-05-01		428136-05-01		
	UNITS	**GW-82415-072313-HS-TP6**	**RDL**	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Benzo[a]pyrene equivalency	ug/L	3.6	0.010	0.12	0.010	7025097
Acenaphthene	ug/L	0.31	0.005	<0.02	0.02	7025631
Acenaphthylene	ug/L	0.032	0.005	<0.02	0.02	7025631
Acridine	ug/L	0.14	0.005	<0.02	0.02	7025631
Anthracene	ug/L	0.36	0.005	<0.02	0.02	7025631
Benzo(a)anthracene	ug/L	2.1	0.005	0.03	0.02	7025631
Benzo(b&j)fluoranthene	ug/L	3.3	0.005	0.12	0.02	7025631
Benzo(k)fluoranthene	ug/L	1.1	0.005	0.03	0.02	7025631
Benzo(g,h,i)perylene	ug/L	1.2	0.005	0.17	0.02	7025631
Benzo(c)phenanthrene	ug/L	<0.3 (1)	0.3	<0.02	0.02	7025631
Benzo(a)pyrene	ug/L	2.3	0.005	0.08	0.02	7025631
Benzo[e]pyrene	ug/L	2.0	0.005	0.30	0.02	7025631
Chrysene	ug/L	1.7	0.005	0.07	0.02	7025631
Dibenz(a,h)anthracene	ug/L	0.37	0.005	<0.02	0.02	7025631
Fluoranthene	ug/L	3.3	0.005	0.09	0.02	7025631
Fluorene	ug/L	0.25	0.005	<0.02	0.02	7025631
Indeno(1,2,3-cd)pyrene	ug/L	1.6	0.005	0.07	0.02	7025631
2-Methylnaphthalene	ug/L	0.066	0.005	0.12	0.02	7025631
Naphthalene	ug/L	0.11	0.005	0.08	0.02	7025631
Phenanthrene	ug/L	1.6	0.005	0.06	0.02	7025631
Perylene	ug/L	0.54	0.005	<0.02	0.02	7025631
Pyrene	ug/L	2.8	0.005	0.15	0.02	7025631
Quinoline	ug/L	<0.02 (1)	0.02	<0.05 (1)	0.05	7025631
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	94	N/A	111	N/A	7025631
D12-BENZO(A)PYRENE (sur.)	%	98	N/A	113	N/A	7025631
D8-ACENAPHTHYLENE (sur.)	%	88	N/A	104	N/A	7025631
TERPHENYL-D14 (sur.)	%	97	N/A	112	N/A	7025631

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference.

Maxxam Job #: B364276
Report Date: 2013/07/29

CONESTOGA-ROVERS AND ASSOCIATES LTD
Client Project #: 82415
Site Location: IQALUIT, NUNAVUT
Your P.O. #: 20-016130-1
Sampler Initials: HS

Package 1	13.3°C

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

SEMIVOLATILE ORGANICS BY GC-MS (WATER) Comments

Sample HA1780-05 Polycyclic Aromatic HC (Low Level) Water: Detection limits raised due to reduced sample extract volume.

Results relate only to the items tested.

CONESTOGA-ROVERS AND ASSOCIATES LTD
Attention: JENNIFER BALKWILL
Client Project #: 82415
P.O. #: 20-016130-1
Site Location: IQALUIT, NUNAVUT

Quality Assurance Report

Maxxam Job Number: CB364276

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7025631	SJ1	Spiked Blank	D10-ANTHRACENE (sur.)	2013/07/28		92	%	50 - 130
			D12-BENZO(A)PYRENE (sur.)	2013/07/28		93	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2013/07/28		83	%	50 - 130
			TERPHENYL-D14 (sur.)	2013/07/28		94	%	50 - 130
			Acenaphthene	2013/07/28		71	%	50 - 130
			Acenaphthylene	2013/07/28		79	%	50 - 130
			Acridine	2013/07/28		76	%	50 - 130
			Anthracene	2013/07/28		91	%	50 - 130
			Benzo(a)anthracene	2013/07/28		94	%	50 - 130
			Benzo(b&j)fluoranthene	2013/07/28		91	%	50 - 130
			Benzo(k)fluoranthene	2013/07/28		94	%	50 - 130
			Benzo(g,h,i)perylene	2013/07/28		92	%	50 - 130
			Benzo(c)phenanthrene	2013/07/28		94	%	50 - 130
			Benzo(a)pyrene	2013/07/28		93	%	50 - 130
			Benzo[e]pyrene	2013/07/28		93	%	50 - 130
			Chrysene	2013/07/28		94	%	50 - 130
			Dibenz(a,h)anthracene	2013/07/28		93	%	50 - 130
			Fluoranthene	2013/07/28		92	%	50 - 130
			Fluorene	2013/07/28		81	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2013/07/28		94	%	50 - 130
			2-Methylnaphthalene	2013/07/28		52	%	50 - 130
			Naphthalene	2013/07/28		55	%	50 - 130
			Phenanthrene	2013/07/28		89	%	50 - 130
			Perylene	2013/07/28		94	%	50 - 130
			Pyrene	2013/07/28		93	%	50 - 130
			Quinoline	2013/07/28		116	%	50 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2013/07/28		101	%	50 - 130
			D12-BENZO(A)PYRENE (sur.)	2013/07/28		99	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2013/07/28		96	%	50 - 130
			TERPHENYL-D14 (sur.)	2013/07/28		101	%	50 - 130
			Acenaphthene	2013/07/28	<0.005		ug/L	
			Acenaphthylene	2013/07/28	<0.005		ug/L	
			Acridine	2013/07/28	<0.005		ug/L	
			Anthracene	2013/07/28	<0.005		ug/L	
			Benzo(a)anthracene	2013/07/28	<0.005		ug/L	
			Benzo(b&j)fluoranthene	2013/07/28	<0.005		ug/L	
			Benzo(k)fluoranthene	2013/07/28	<0.005		ug/L	
			Benzo(g,h,i)perylene	2013/07/28	<0.005		ug/L	
			Benzo(c)phenanthrene	2013/07/28	<0.005		ug/L	
			Benzo(a)pyrene	2013/07/28	<0.005		ug/L	
			Benzo[e]pyrene	2013/07/28	<0.005		ug/L	
			Chrysene	2013/07/28	<0.005		ug/L	
			Dibenz(a,h)anthracene	2013/07/28	<0.005		ug/L	
			Fluoranthene	2013/07/28	<0.005		ug/L	
			Fluorene	2013/07/28	<0.005		ug/L	
			Indeno(1,2,3-cd)pyrene	2013/07/28	<0.005		ug/L	
			2-Methylnaphthalene	2013/07/28	<0.005		ug/L	
			Naphthalene	2013/07/28	0.008, RDL=0.005		ug/L	
			Phenanthrene	2013/07/28	<0.005		ug/L	
			Perylene	2013/07/28	<0.005		ug/L	
			Pyrene	2013/07/28	<0.005		ug/L	
			Quinoline	2013/07/28	<0.005		ug/L	
7027587	TSJ	Matrix Spike	Dissolved Hex. Chromium (Cr 6+)	2013/07/27		98	%	80 - 120
		Spiked Blank	Dissolved Hex. Chromium (Cr 6+)	2013/07/27		95	%	80 - 120
		Method Blank	Dissolved Hex. Chromium (Cr 6+)	2013/07/27	<0.0010		mg/L	

CONESTOGA-ROVERS AND ASSOCIATES LTD
Attention: JENNIFER BALKWILL
Client Project #: 82415
P.O. #: 20-016130-1
Site Location: IQALUIT, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: CB364276

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7027587	TSJ	RPD	Dissolved Hex. Chromium (Cr 6+)	2013/07/27	NC		%	20
7028140	AP1	Matrix Spike	Strong Acid Dissoc. Cyanide (CN)	2013/07/28		99	%	80 - 120
		QC Standard	Strong Acid Dissoc. Cyanide (CN)	2013/07/28		91	%	80 - 120
		Spiked Blank	Strong Acid Dissoc. Cyanide (CN)	2013/07/28		95	%	80 - 120
		Method Blank	Strong Acid Dissoc. Cyanide (CN)	2013/07/28	<0.0020		mg/L	
		RPD	Strong Acid Dissoc. Cyanide (CN)	2013/07/28	NC		%	20
7028172	YK1	Matrix Spike [HA1779-04]	Dissolved Aluminum (Al)	2013/07/28		103	%	80 - 120
			Dissolved Barium (Ba)	2013/07/28		90	%	80 - 120
			Dissolved Boron (B)	2013/07/28		95	%	80 - 120
			Dissolved Calcium (Ca)	2013/07/28		NC	%	80 - 120
			Dissolved Chromium (Cr)	2013/07/28		89	%	80 - 120
			Dissolved Iron (Fe)	2013/07/28		96	%	80 - 120
			Dissolved Lithium (Li)	2013/07/28		96	%	80 - 120
			Dissolved Magnesium (Mg)	2013/07/28		93	%	80 - 120
			Dissolved Manganese (Mn)	2013/07/28		96	%	80 - 120
			Dissolved Phosphorus (P)	2013/07/28		100	%	80 - 120
			Dissolved Potassium (K)	2013/07/28		95	%	80 - 120
			Dissolved Silicon (Si)	2013/07/28		94	%	80 - 120
			Dissolved Sodium (Na)	2013/07/28		97	%	80 - 120
			Dissolved Strontium (Sr)	2013/07/28		92	%	80 - 120
		Spiked Blank	Dissolved Aluminum (Al)	2013/07/28		111	%	80 - 120
			Dissolved Barium (Ba)	2013/07/28		95	%	80 - 120
			Dissolved Boron (B)	2013/07/28		100	%	80 - 120
			Dissolved Calcium (Ca)	2013/07/28		100	%	80 - 120
			Dissolved Chromium (Cr)	2013/07/28		96	%	80 - 120
			Dissolved Iron (Fe)	2013/07/28		102	%	80 - 120
			Dissolved Lithium (Li)	2013/07/28		100	%	80 - 120
			Dissolved Magnesium (Mg)	2013/07/28		101	%	80 - 120
			Dissolved Manganese (Mn)	2013/07/28		103	%	80 - 120
			Dissolved Phosphorus (P)	2013/07/28		102	%	80 - 120
			Dissolved Potassium (K)	2013/07/28		102	%	80 - 120
			Dissolved Silicon (Si)	2013/07/28		102	%	80 - 120
			Dissolved Sodium (Na)	2013/07/28		102	%	80 - 120
			Dissolved Strontium (Sr)	2013/07/28		96	%	80 - 120
		Method Blank	Dissolved Aluminum (Al)	2013/07/28	<0.040		mg/L	
			Dissolved Barium (Ba)	2013/07/28	<0.010		mg/L	
			Dissolved Boron (B)	2013/07/28	<0.020		mg/L	
			Dissolved Calcium (Ca)	2013/07/28	<0.30		mg/L	
			Dissolved Chromium (Cr)	2013/07/28	<0.010		mg/L	
			Dissolved Iron (Fe)	2013/07/28	<0.060		mg/L	
			Dissolved Lithium (Li)	2013/07/28	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2013/07/28	<0.20		mg/L	
			Dissolved Manganese (Mn)	2013/07/28	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2013/07/28	<0.10		mg/L	
			Dissolved Potassium (K)	2013/07/28	<0.30		mg/L	
			Dissolved Silicon (Si)	2013/07/28	<0.10		mg/L	
			Dissolved Sodium (Na)	2013/07/28	<0.50		mg/L	
			Dissolved Strontium (Sr)	2013/07/28	<0.020		mg/L	
			Dissolved Sulphur (S)	2013/07/28	<0.20		mg/L	
		RPD [HA1779-04]	Dissolved Aluminum (Al)	2013/07/28	NC		%	20
			Dissolved Barium (Ba)	2013/07/28	NC		%	20
			Dissolved Boron (B)	2013/07/28	NC		%	20
			Dissolved Calcium (Ca)	2013/07/28	0.7		%	20
			Dissolved Chromium (Cr)	2013/07/28	NC		%	20

CONESTOGA-ROVERS AND ASSOCIATES LTD
Attention: JENNIFER BALKWILL
Client Project #: 82415
P.O. #: 20-016130-1
Site Location: IQALUIT, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: CB364276

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7028172 YK1	RPD [HA1779-04]	Dissolved Iron (Fe)	2013/07/28	NC		%	20
		Dissolved Lithium (Li)	2013/07/28	NC		%	20
		Dissolved Magnesium (Mg)	2013/07/28	0.9		%	20
		Dissolved Manganese (Mn)	2013/07/28	NC		%	20
		Dissolved Phosphorus (P)	2013/07/28	NC		%	20
		Dissolved Potassium (K)	2013/07/28	NC		%	20
		Dissolved Silicon (Si)	2013/07/28	2.0		%	20
		Dissolved Sodium (Na)	2013/07/28	0.7		%	20
		Dissolved Strontium (Sr)	2013/07/28	0.7		%	20
		Dissolved Sulphur (S)	2013/07/28	2.9		%	20
7030008 TDB	Matrix Spike [HA1779-04]	Dissolved Aluminum (Al)	2013/07/29		NC	%	80 - 120
		Dissolved Antimony (Sb)	2013/07/29		92	%	80 - 120
		Dissolved Arsenic (As)	2013/07/29		105	%	80 - 120
		Dissolved Beryllium (Be)	2013/07/29		96	%	80 - 120
		Dissolved Cadmium (Cd)	2013/07/29		102	%	80 - 120
		Dissolved Chromium (Cr)	2013/07/29		98	%	80 - 120
		Dissolved Cobalt (Co)	2013/07/29		95	%	80 - 120
		Dissolved Copper (Cu)	2013/07/29		93	%	80 - 120
		Dissolved Lead (Pb)	2013/07/29		94	%	80 - 120
		Dissolved Molybdenum (Mo)	2013/07/29		102	%	80 - 120
		Dissolved Nickel (Ni)	2013/07/29		95	%	80 - 120
		Dissolved Selenium (Se)	2013/07/29		105	%	80 - 120
		Dissolved Silver (Ag)	2013/07/29		96	%	80 - 120
		Dissolved Thallium (Tl)	2013/07/29		96	%	80 - 120
		Dissolved Tin (Sn)	2013/07/29		90	%	80 - 120
		Dissolved Titanium (Ti)	2013/07/29		101	%	80 - 120
		Dissolved Uranium (U)	2013/07/29		105	%	80 - 120
		Dissolved Vanadium (V)	2013/07/29		101	%	80 - 120
		Dissolved Zinc (Zn)	2013/07/29		102	%	80 - 120
	Spiked Blank	Dissolved Aluminum (Al)	2013/07/29		101	%	80 - 120
		Dissolved Antimony (Sb)	2013/07/29		94	%	80 - 120
		Dissolved Arsenic (As)	2013/07/29		99	%	80 - 120
		Dissolved Beryllium (Be)	2013/07/29		95	%	80 - 120
		Dissolved Cadmium (Cd)	2013/07/29		100	%	80 - 120
		Dissolved Chromium (Cr)	2013/07/29		97	%	80 - 120
		Dissolved Cobalt (Co)	2013/07/29		96	%	80 - 120
		Dissolved Copper (Cu)	2013/07/29		97	%	80 - 120
		Dissolved Lead (Pb)	2013/07/29		101	%	80 - 120
		Dissolved Molybdenum (Mo)	2013/07/29		98	%	80 - 120
		Dissolved Nickel (Ni)	2013/07/29		97	%	80 - 120
		Dissolved Selenium (Se)	2013/07/29		104	%	80 - 120
		Dissolved Silver (Ag)	2013/07/29		99	%	80 - 120
		Dissolved Thallium (Tl)	2013/07/29		103	%	80 - 120
		Dissolved Tin (Sn)	2013/07/29		99	%	80 - 120
		Dissolved Titanium (Ti)	2013/07/29		97	%	80 - 120
		Dissolved Uranium (U)	2013/07/29		104	%	80 - 120
		Dissolved Vanadium (V)	2013/07/29		98	%	80 - 120
		Dissolved Zinc (Zn)	2013/07/29		102	%	80 - 120
	Method Blank	Dissolved Aluminum (Al)	2013/07/29	<0.0030		mg/L	
		Dissolved Antimony (Sb)	2013/07/29	<0.00060		mg/L	
		Dissolved Arsenic (As)	2013/07/29	<0.00020		mg/L	
		Dissolved Beryllium (Be)	2013/07/29	<0.0010		mg/L	
		Dissolved Cadmium (Cd)	2013/07/29	0.0000057, RDL=0.0000050		mg/L	
		Dissolved Chromium (Cr)	2013/07/29	<0.0010		mg/L	

CONESTOGA-ROVERS AND ASSOCIATES LTD
Attention: JENNIFER BALKWILL
Client Project #: 82415
P.O. #: 20-016130-1
Site Location: IQALUIT, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: CB364276

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	UNITS	QC Limits
7030008	TDB	Method Blank	Dissolved Cobalt (Co)	2013/07/29	<0.00030		mg/L	
			Dissolved Copper (Cu)	2013/07/29	<0.00020		mg/L	
			Dissolved Lead (Pb)	2013/07/29	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2013/07/29	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2013/07/29	<0.00050		mg/L	
			Dissolved Selenium (Se)	2013/07/29	<0.00020		mg/L	
			Dissolved Silver (Ag)	2013/07/29	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2013/07/29	<0.00020		mg/L	
			Dissolved Tin (Sn)	2013/07/29	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2013/07/29	<0.0010		mg/L	
			Dissolved Uranium (U)	2013/07/29	<0.00010		mg/L	
			Dissolved Vanadium (V)	2013/07/29	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2013/07/29	<0.0030		mg/L	
		RPD [HA1779-04]	Dissolved Aluminum (Al)	2013/07/29	12.6		%	20
			Dissolved Antimony (Sb)	2013/07/29	NC		%	20
			Dissolved Arsenic (As)	2013/07/29	NC		%	20
			Dissolved Beryllium (Be)	2013/07/29	NC		%	20
			Dissolved Cadmium (Cd)	2013/07/29	NC		%	20
			Dissolved Chromium (Cr)	2013/07/29	NC		%	20
			Dissolved Cobalt (Co)	2013/07/29	NC		%	20
			Dissolved Copper (Cu)	2013/07/29	7.7		%	20
			Dissolved Lead (Pb)	2013/07/29	NC		%	20
			Dissolved Molybdenum (Mo)	2013/07/29	0.9		%	20
			Dissolved Nickel (Ni)	2013/07/29	NC		%	20
			Dissolved Selenium (Se)	2013/07/29	NC		%	20
			Dissolved Silver (Ag)	2013/07/29	NC		%	20
			Dissolved Thallium (Tl)	2013/07/29	NC		%	20
			Dissolved Tin (Sn)	2013/07/29	NC		%	20
			Dissolved Titanium (Ti)	2013/07/29	NC		%	20
			Dissolved Uranium (U)	2013/07/29	1.5		%	20
			Dissolved Vanadium (V)	2013/07/29	NC		%	20
			Dissolved Zinc (Zn)	2013/07/29	NC		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B364276

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

Lisa Thum, Inorganic Manager

Michael Sheppard, Organics Supervisor

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

Maxxam Analytics International Corporation o/a Maxxam Analytics

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel (905) 817-5700 Toll-free 800-653-6266 Fax (905) 817-5779 www.maxxam.ca

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:	REPORT INFORMATION (if differs from invoice):	PROJECT INFORMATION:	Laboratory Use Onl
#3000 Conestoga-Rovers and Associates Ltd	Company Name:	Quotation #: B20265	MAXXAM JOB #:
Jennifer Balkwill	Contact Name:	P.O. #:	
651 Colby Dr	Address:	Project #:	
Waterloo ON N2V 1C2		Project Name:	CHAIN OF CUSTODY #:
(519)884-7780 x35[illegible] Fax: (519)725-1394	Phone: Fax:	Site #: Iqaluit, Nunavut	C#428136-05-01
jbalkwill@craworld.com	Email:	Sampled By: H Steinberg	

tion 153 (2011)

es/Park ☐ Medium/Fine
d/Comm ☐ Coarse
gri/Other
☐ For RSC

Other Regulations

☑ CCME ☐ Sanitary Sewer Bylaw
☐ Reg. 558 ☐ Storm Sewer Bylaw
☐ MISA Municipality _____
☐ PWQO
☐ Other _____

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

PLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQ

PLEASE PROVIDE ADVANCE NOTICE FOR R

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified)
Standard TAT = 5-7 Working days for most tests
Please note: Standard TAT for certain tests such as BOD days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submissio
Date Required: 1 day TAT Time Requir
Rush Confirmation Number: NTA (call lab for

ode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	CCME Petroleum Hydrocarbons	pH, Mercury (Low Level)	PCBs (low)	Volatile Organic Compounds in Water	CCME Low Level Free Cyanide - ALBERTA	CCME Dissolved Metals (low) - ALBERTA	CCME PAHs - Low - ALBERTA	Low level Hexavalent Chromium - ALBERTA			# of Bottles	Comments
	GW-82415-072313-HS-TP6		07/23/13 1100	gw	N	N					X	X	X	X			18	some sedimen
	GW-82415-072313-HS-TP12		07/23/13 1600	gw	N	N					X	X	X	X			18	"
																		samples c

26-Jul-13 08:40
B364276
JB0 INS-0093

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Receipt
H Steinberg	13/07/24	1240	Jason Bellerose	13/07/26	0840			12, 13, 15

RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Maxxam Analytics International Corporation o/a Maxxam Analytics

7-1108

ICE MELTED CS YES

Your P.O. #: 20-016130-1
Your Project #: 82415-20
Site#: Iqaluit, Nunavut
Your C.O.C. #: 42813606, 428136-06-01

Attention: Jennifer Balkwill
Conestoga-Rovers and Associates Ltd
651 Colby Dr
Waterloo, ON
N2V 1C2

Report Date: 2013/07/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3C1768
Received: 2013/07/26, 09:40

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2013/07/28	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	2013/07/26	2013/07/27	CAM SOP-00316	CCME Hydrocarbons
Mercury (low level)	2	2013/07/29	2013/07/29	CAM SOP-00453	EPA 7470
Polychlorinated Biphenyl (PCB)	2	2013/07/27	2013/07/29	CAM SOP-00309	SW846 8082
pH	2	N/A	2013/07/26	CAM SOP-00448	SM 4500H+ B
Volatile Organic Compounds in Water	3	N/A	2013/07/29	CAM SOP 00228	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Encryption Key

Nure Tamanna
29 Jul 2013 16:50:10 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Nure Tamanna, Project Manager
Email: NTamanna@maxxam.ca
Phone# (905) 817-5765

==========

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.

Total cover pages: 2

Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

RESULTS OF ANALYSES OF WATER

Maxxam ID		SK3643	SK3644		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00		
	Units	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
Inorganics					
pH	pH	7.91	7.92		3294023

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		SK3643	SK3644		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00		
	Units	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
Metals					
Mercury (Hg)	ug/L	0.06	0.17	0.01	3295861

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		SK3643	SK3644	SK3644	SK3645		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00	2013/07/23 16:00	2013/07/23		
	Units	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**GW-82415-072313-HS-TP12 Lab-Dup**	**TRIP BLANK**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/L	ND	ND	13	ND	10	3294440
Benzene	ug/L	ND	ND	ND	ND	0.20	3294440
Bromodichloromethane	ug/L	ND	ND	ND	ND	0.50	3294440
Bromoform	ug/L	ND	ND	ND	ND	1.0	3294440
Bromomethane	ug/L	ND	ND	ND	ND	0.50	3294440
Carbon Tetrachloride	ug/L	ND	ND	ND	ND	0.20	3294440
Chlorobenzene	ug/L	ND	ND	ND	ND	0.20	3294440
Chloroform	ug/L	ND	ND	ND	ND	0.20	3294440
Dibromochloromethane	ug/L	ND	ND	ND	ND	0.50	3294440
1,2-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.50	3294440
1,3-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.50	3294440
1,4-Dichlorobenzene	ug/L	ND	ND	ND	ND	0.50	3294440
Dichlorodifluoromethane (FREON 12)	ug/L	ND	ND	ND	ND	1.0	3294440
1,1-Dichloroethane	ug/L	ND	ND	ND	ND	0.20	3294440
1,2-Dichloroethane	ug/L	ND	ND	ND	ND	0.50	3294440
1,1-Dichloroethylene	ug/L	ND	ND	ND	ND	0.20	3294440
cis-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	0.50	3294440
trans-1,2-Dichloroethylene	ug/L	ND	ND	ND	ND	0.50	3294440
1,2-Dichloropropane	ug/L	ND	ND	ND	ND	0.20	3294440
cis-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	0.30	3294440
trans-1,3-Dichloropropene	ug/L	ND	ND	ND	ND	0.40	3294440
Ethylbenzene	ug/L	ND	ND	ND	ND	0.20	3294440
Ethylene Dibromide	ug/L	ND	ND	ND	ND	0.20	3294440
Hexane	ug/L	ND	ND	ND	ND	1.0	3294440
Methylene Chloride(Dichloromethane)	ug/L	ND	ND	ND	ND	2.0	3294440
Methyl Isobutyl Ketone	ug/L	ND	ND	ND	ND	5.0	3294440
Methyl Ethyl Ketone (2-Butanone)	ug/L	ND	ND	ND	ND	10	3294440
Methyl t-butyl ether (MTBE)	ug/L	ND	ND	ND	ND	0.50	3294440
Styrene	ug/L	ND	ND	ND	ND	0.50	3294440
1,1,1,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0.50	3294440
1,1,2,2-Tetrachloroethane	ug/L	ND	ND	ND	ND	0.50	3294440
Tetrachloroethylene	ug/L	0.58	ND	ND	ND	0.20	3294440

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (WATER)

Maxxam ID		SK3643	SK3644	SK3644	SK3645		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00	2013/07/23 16:00	2013/07/23		
	Units	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**GW-82415-072313-HS-TP12 Lab-Dup**	**TRIP BLANK**	**RDL**	**QC Batch**
Toluene	ug/L	ND	ND	ND	ND	0.20	3294440
1,1,1-Trichloroethane	ug/L	ND	ND	ND	ND	0.20	3294440
1,1,2-Trichloroethane	ug/L	ND	ND	ND	ND	0.50	3294440
Trichloroethylene	ug/L	ND	ND	ND	ND	0.20	3294440
Vinyl Chloride	ug/L	ND	ND	ND	ND	0.20	3294440
p+m-Xylene	ug/L	ND	ND	ND	ND	0.20	3294440
o-Xylene	ug/L	ND	ND	ND	ND	0.20	3294440
Xylene (Total)	ug/L	ND	ND	ND	ND	0.20	3294440
Trichlorofluoromethane (FREON 11)	ug/L	ND	ND	ND	ND	0.50	3294440
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	96	100	96	97		3294440
D4-1,2-Dichloroethane	%	104	99	107	103		3294440
D8-Toluene	%	97	95	97	98		3294440

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3643	SK3644		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00		
	Units	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons					
F1 (C6-C10)	ug/L	ND	ND	25	3295235
F1 (C6-C10) - BTEX	ug/L	ND	ND	25	3295235
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND	100	3294332
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND	200	3294332
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND	200	3294332
Reached Baseline at C50	ug/L	YES	YES		3294332
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	103	105		3295235
4-Bromofluorobenzene	%	105	103		3295235
D10-Ethylbenzene	%	106	108		3295235
D4-1,2-Dichloroethane	%	99	99		3295235
o-Terphenyl	%	100	101		3294332

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		SK3643	SK3644		
Sampling Date		2013/07/23 11:00	2013/07/23 16:00		
	Units	**GW-82415-072313-HS-TP6**	**GW-82415-072313-HS-TP12**	**RDL**	**QC Batch**
PCBs					
Aroclor 1016	ug/L	ND	ND	0.01	3295258
Aroclor 1221	ug/L	ND	ND	0.01	3295258
Aroclor 1232	ug/L	ND	ND	0.01	3295258
Aroclor 1262	ug/L	ND	ND	0.01	3295258
Aroclor 1268	ug/L	ND	ND	0.01	3295258
Aroclor 1242	ug/L	ND	ND	0.01	3295258
Aroclor 1248	ug/L	ND	ND	0.01	3295258
Aroclor 1254	ug/L	ND	ND	0.01	3295258
Aroclor 1260	ug/L	0.03	ND	0.01	3295258
Total PCB	ug/L	0.03	ND	0.01	3295258
Surrogate Recovery (%)					
Decachlorobiphenyl	%	79	79		3295258

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3643 **Collected** 2013/07/23
Sample ID GW-82415-072313-HS-TP6 **Shipped**
Matrix Water **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	3295235	N/A	2013/07/28	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3294332	2013/07/26	2013/07/27	Nicoleta Ciublea
Mercury (low level)	CVAA	3295861	2013/07/29	2013/07/29	Magdalena Carlos
Polychlorinated Biphenyl (PCB)	GC/ECD	3295258	2013/07/27	2013/07/29	Li Peng
pH	PH	3294023	N/A	2013/07/26	Surinder Rai
Volatile Organic Compounds in Water	GC/MS	3294440	N/A	2013/07/29	John Wu

Maxxam ID SK3644 **Collected** 2013/07/23
Sample ID GW-82415-072313-HS-TP12 **Shipped**
Matrix Water **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Wat	HSGC/MSFD	3295235	N/A	2013/07/28	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	3294332	2013/07/26	2013/07/27	Nicoleta Ciublea
Mercury (low level)	CVAA	3295861	2013/07/29	2013/07/29	Magdalena Carlos
Polychlorinated Biphenyl (PCB)	GC/ECD	3295258	2013/07/27	2013/07/29	Li Peng
pH	PH	3294023	N/A	2013/07/26	Surinder Rai
Volatile Organic Compounds in Water	GC/MS	3294440	N/A	2013/07/29	John Wu

Maxxam ID SK3644 Dup **Collected** 2013/07/23
Sample ID GW-82415-072313-HS-TP12 **Shipped**
Matrix Water **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	GC/MS	3294440	N/A	2013/07/29	John Wu

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Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3645
Sample ID TRIP BLANK
Matrix Water

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Water	GC/MS	3294440	N/A	2013/07/29	John Wu

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Package 1	2.0°C

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

GENERAL COMMENTS

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3294332	o-Terphenyl	2013/07/26	100	50 - 130	98	50 - 130	97	%		
3294332	F2 (C10-C16 Hydrocarbons)	2013/07/26	NC(1)	50 - 130	94	70 - 130	ND, RDL=100	ug/L	2.2	30
3294332	F3 (C16-C34 Hydrocarbons)	2013/07/26	106	50 - 130	99	70 - 130	ND, RDL=200	ug/L	NC	30
3294332	F4 (C34-C50 Hydrocarbons)	2013/07/26	100	50 - 130	97	70 - 130	ND, RDL=200	ug/L	NC	30
3294440	4-Bromofluorobenzene	2013/07/29	100	70 - 130	101	70 - 130	101	%		
3294440	D4-1,2-Dichloroethane	2013/07/29	99	70 - 130	98	70 - 130	99	%		
3294440	D8-Toluene	2013/07/29	96	70 - 130	98	70 - 130	97	%		
3294440	Acetone (2-Propanone)	2013/07/29	89(2)	60 - 140	87	60 - 140	ND, RDL=10	ug/L	NC(3)	30
3294440	Benzene	2013/07/29	93(2)	70 - 130	93	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Bromodichloromethane	2013/07/29	88(2)	70 - 130	89	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Bromoform	2013/07/29	83(2)	70 - 130	85	70 - 130	ND, RDL=1.0	ug/L	NC(3)	30
3294440	Bromomethane	2013/07/29	90(2)	60 - 140	91	60 - 140	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Carbon Tetrachloride	2013/07/29	85(2)	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Chlorobenzene	2013/07/29	93(2)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Chloroform	2013/07/29	89(2)	70 - 130	89	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Dibromochloromethane	2013/07/29	84(2)	70 - 130	88	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,2-Dichlorobenzene	2013/07/29	90(2)	70 - 130	90	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,3-Dichlorobenzene	2013/07/29	87(2)	70 - 130	88	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,4-Dichlorobenzene	2013/07/29	87(2)	70 - 130	87	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Dichlorodifluoromethane (FREON 12)	2013/07/29	75(2)	60 - 140	74	60 - 140	ND, RDL=1.0	ug/L	NC(3)	30
3294440	1,1-Dichloroethane	2013/07/29	99(2)	70 - 130	99	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	1,2-Dichloroethane	2013/07/29	95(2)	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,1-Dichloroethylene	2013/07/29	98(2)	70 - 130	98	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	cis-1,2-Dichloroethylene	2013/07/29	93(2)	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	trans-1,2-Dichloroethylene	2013/07/29	92(2)	70 - 130	93	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,2-Dichloropropane	2013/07/29	95(2)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	cis-1,3-Dichloropropene	2013/07/29	85(2)	70 - 130	86	70 - 130	ND, RDL=0.30	ug/L	NC(3)	30
3294440	trans-1,3-Dichloropropene	2013/07/29	92(2)	70 - 130	94	70 - 130	ND, RDL=0.40	ug/L	NC(3)	30
3294440	Ethylbenzene	2013/07/29	89(2)	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Ethylene Dibromide	2013/07/29	93(2)	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Hexane	2013/07/29	101(2)	70 - 130	104	70 - 130	ND, RDL=1.0	ug/L	NC(3)	30
3294440	MethyleneChloride(Dichloromethane)	2013/07/29	98(2)	70 - 130	98	70 - 130	ND, RDL=2.0	ug/L	NC(3)	30
3294440	Methyl Isobutyl Ketone	2013/07/29	91(2)	70 - 130	90	70 - 130	ND, RDL=5.0	ug/L	NC(3)	30
3294440	Methyl Ethyl Ketone (2-Butanone)	2013/07/29	93(2)	60 - 140	92	60 - 140	ND, RDL=10	ug/L	NC(3)	30
3294440	Methyl t-butyl ether (MTBE)	2013/07/29	92(2)	70 - 130	92	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Styrene	2013/07/29	91(2)	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,1,1,2-Tetrachloroethane	2013/07/29	86(2)	70 - 130	89	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	1,1,2,2-Tetrachloroethane	2013/07/29	93(2)	70 - 130	94	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Tetrachloroethylene	2013/07/29	91(2)	70 - 130	94	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30

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Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3294440	Toluene	2013/07/29	90(2)	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	1,1,1-Trichloroethane	2013/07/29	94(2)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	1,1,2-Trichloroethane	2013/07/29	91(2)	70 - 130	92	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Trichloroethylene	2013/07/29	91(2)	70 - 130	92	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Vinyl Chloride	2013/07/29	88(2)	70 - 130	88	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	p+m-Xylene	2013/07/29	92(2)	70 - 130	95	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	o-Xylene	2013/07/29	84(2)	70 - 130	87	70 - 130	ND, RDL=0.20	ug/L	NC(3)	30
3294440	Trichlorofluoromethane (FREON 11)	2013/07/29	90(2)	70 - 130	90	70 - 130	ND, RDL=0.50	ug/L	NC(3)	30
3294440	Xylene (Total)	2013/07/29					ND, RDL=0.20	ug/L	NC(3)	30
3295235	1,4-Difluorobenzene	2013/07/28	102	70 - 130	99	70 - 130	102	%		
3295235	4-Bromofluorobenzene	2013/07/28	102	70 - 130	103	70 - 130	104	%		
3295235	D10-Ethylbenzene	2013/07/28	108	70 - 130	100	70 - 130	99	%		
3295235	D4-1,2-Dichloroethane	2013/07/28	96	70 - 130	97	70 - 130	100	%		
3295235	F1 (C6-C10)	2013/07/28	77	70 - 130	97	60 - 140	ND, RDL=25	ug/L	NC	30
3295235	F1 (C6-C10) - BTEX	2013/07/28					ND, RDL=25	ug/L	NC	30
3295258	Decachlorobiphenyl	2013/07/29	101	60 - 130	88	60 - 130	88	%		
3295258	Aroclor 1260	2013/07/29	84	60 - 130	74	60 - 130	ND, RDL=0.01	ug/L	NC	40
3295258	Total PCB	2013/07/29	84	60 - 130	74	60 - 130	ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1016	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1221	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1232	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1262	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1268	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1242	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295258	Aroclor 1248	2013/07/29					ND, RDL=0.01	ug/L	NC	40

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Maxxam Job #: B3C1768
Report Date: 2013/07/29

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
3295258	Aroclor 1254	2013/07/29					ND, RDL=0.01	ug/L	NC	40
3295861	Mercury (Hg)	2013/07/29	113	80 - 120	108	80 - 120	ND, RDL=0.01	ug/L	NC	20

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
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 spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - The recovery in the matrix spike was not calculated (NC), spike level <2 X native concentration.
(2) - Matrix Spike Parent ID [SK3644-04]
(3) - Duplicate Parent ID [SK3644-04]

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Validation Signature Page

Maxxam Job #: B3C1768

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

Brad Newman, Scientific Specialist

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Mahmudul Khan, GC Analysts

Suzana Popovic, Supervisor, Hydrocarbons

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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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Te... axxam.ca

RUSH

CHAIN OF CUSTODY RECORD

Page 1 of 1

26-Jul-13 09:40
Nure Tamanna
B3C1768
GAU ENV-911

INVOICE INFORMATION:

Company Name: #3000 Conestoga-Rovers and Associates Ltd
Contact Name: Jennifer Balkwill
Address: 651 Colby Dr
Waterloo ON N2V 1C2
Phone: (519)884-7780 x35... Fax: (519)725-1394
Email: jbalkwill@craworld.com

Company Name:
Contact Name:
Address:
Phone: Fax:
Email:

PROJECT INFORMATION:

Quotation #: B20265
P.O. #:
Project #:
Project Name:
Site #: Iqaluit, Nunavut
Sampled By: H Steinberg

BOTTLE ORDER #: 428136

PROJECT MANAGER: Nure Tamanna

Regulation 153 (2011)

☐ Table 1 ☐ Res/Park ☐ Medium/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___ ☐ For RSC

Other Regulations

☐ CCME ☐ Sanitary Sewer Bylaw
☐ Reg. 558 ☐ Storm Sewer Bylaw
☐ MISA Municipality ___
☐ PWQO
☐ Other ___

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details. ☐

Job Specific Rush TAT (if applies to entire submission)
Date Required: 1 day TAT Time Required: ___ ☐
Rush Confirmation Number: NTA201307NUN1 (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	CCME Petroleum Hydrocarbons	pH, Mercury (Low Level)	PCBs (low)	Volatile Organic Compounds in Water	CCME Low Level Free Cyanide - ALBERTA	CCME Dissolved Metals (low) - ALBERTA	CCME PAHs - Low - ALBERTA	Low level Hexavalent Chromium - ALBERTA	# of Bottles	Comments
1		GW-82415-072313-HS-TP6	07/23/13	1100	gw	N	N	X	X	X	X					18	some sediments
2		GW-82415-072313-HS-TP12	07/23/13	1600	gw	N	N	X	X	X	X					18	some sediments.
3		TRIP BLANK.									X					3	all samples on ice.
4																	
5																	
6																	
7																	
8																	
9																	
10																	

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
H Steinberg H Steinberg	13/07/23	1240	NDH AECOM PAYE	2013/07/26	09:40	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	2 | 2 | 2 °C	Present	✓	
		Intact	✓	

White: Maxxam Yellow: Client

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

Your P.O. #: 20-016130-1
Your Project #: 82415-20
Site#: Iqaluit, Nunavut
Your C.O.C. #: 42813601, 428136-01-01

Attention: Jennifer Balkwill
Conestoga-Rovers and Associates Ltd
651 Colby Dr
Waterloo, ON
N2V 1C2

Report Date: 2013/08/07
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3C1829
Received: 2013/07/26, 09:40

Sample Matrix: Soil
Samples Received: 37

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Semivolatile Organic Compounds (TCLP)	1	2013/07/29	2013/07/30	CAM SOP-00301	EPA 8270 modified
Hot Water Extractable Boron	36	2013/07/27	2013/07/27	CAM SOP-00408	R153 Ana. Prot. 2011
Free (WAD) Cyanide	36	N/A	2013/07/29	CAM SOP-00457	Ontario MOE CN-E3015
Hexavalent Chromium in Soil by IC (1)	20	2013/07/26	2013/07/26	CAM SOP-00436	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (1)	16	2013/07/26	2013/07/29	CAM SOP-00436	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	36	2013/07/26	2013/07/27	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2013/07/27	2013/07/27	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	20	2013/07/26	2013/07/29	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	17	2013/07/27	2013/07/29	CAM SOP-00316	CCME CWS
F4G (CCME Hydrocarbons Gravimetric)	5	2013/07/30	2013/07/30	CAM SOP-00316	CCME CWS
Mercury (TCLP Leachable) (mg/L)	1	N/A	2013/07/29	CAM SOP-00453	EPA 7470
Total Metals Analysis by ICP	20	2013/07/27	2013/07/29	CAM SOP-00408	SW-846 6010C
Total Metals Analysis by ICP	16	2013/07/29	2013/07/29	CAM SOP-00408	SW-846 6010C
Acid Extr. Metals (aqua regia) by ICPMS	36	2013/07/27	2013/07/27	CAM SOP-00447	EPA 6020
Total Metals in TCLP Leachate by ICPMS	1	2013/07/29	2013/07/29	CAM SOP-00447	EPA 6020
Ignitability of a Sample	1	2013/07/29	2013/07/29	CAM SOP-00432	EPA 1030
PAH Compounds by GC/MS (SIM) (2)	1	2013/07/27	2013/07/27	CAM SOP - 00318	EPA 8270
Polychlorinated Biphenyl in Solids (2)	1	2013/07/29	2013/07/30	CAM SOP-00307	EPA 8082
Moisture	36	N/A	2013/07/26	CAM SOP-00445	R.Carter,1993
PAH Compounds in Soil by GC/MS (SIM)	3	2013/07/26	2013/07/26	CAM SOP - 00318	EPA 8270
PAH Compounds in Soil by GC/MS (SIM)	17	2013/07/26	2013/07/27	CAM SOP - 00318	EPA 8270
PAH Compounds in Soil by GC/MS (SIM)	16	2013/07/27	2013/07/27	CAM SOP - 00318	EPA 8270
Polychlorinated Biphenyl in Soil	34	2013/07/26	2013/07/29	CAM SOP-00309	SW846 8082
Polychlorinated Biphenyl in Soil	2	2013/07/27	2013/07/29	CAM SOP-00309	SW846 8082
pH CaCl2 EXTRACT	36	2013/07/29	2013/07/29	CAM SOP-00413	SM 4500H+ B
TCLP - % Solids	1	2013/07/26	2013/07/27	CAM SOP-00401	EPA 1311 modified
TCLP - Extraction Fluid	1	N/A	2013/07/27	CAM SOP-00401	EPA 1311 modified
TCLP - Initial and final pH	1	N/A	2013/07/27	CAM SOP-00401	EPA 1311 modified
TCLP Zero Headspace Extraction	1	2013/07/26	2013/07/26	CAM SOP-00430	EPA 1311 modified
Volatile Organic Compounds in Soil	34	2013/07/26	2013/07/27	CAM SOP-00228	EPA 8260 modified
Volatile Organic Compounds in Soil	3	2013/07/26	2013/07/29	CAM SOP-00228	EPA 8260 modified
VOCs in ZHE Leachates	1	2013/07/29	2013/07/29	CAM SOP 00226	EPA 8260 modified

Remarks:

Maxxam Analytics has performed all analytical testing herein in accordance with ISO 17025 and the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act. All methodologies comply with this document and are validated for use in the laboratory. The methods and techniques employed in this analysis conform to the performance criteria (detection limits, accuracy and precision) as outlined in the Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.

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Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

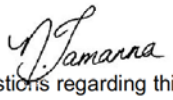
The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following the 'Alberta Environment Draft Addenda to the CWS-PHC, Appendix 6, Validation of Alternate Methods'. Documentation is available upon request. Maxxam has made the following improvements to the CWS-PHC reference benchmark method: (i) Headspace for F1; and, (ii) Mechanical extraction for F2-F4. Note: F4G cannot be added to the C6 to C50 hydrocarbons. The extraction date for samples field preserved with methanol for F1 and Volatile Organic Compounds is considered to be the date sampled.

Maxxam Analytics is accredited for all specific parameters as required by Ontario Regulation 153/04. Maxxam Analytics is limited in liability to the actual cost of analysis unless otherwise agreed in writing. There is no other warranty expressed or implied. Samples will be retained at Maxxam Analytics for three weeks from receipt of data or as per contract.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) Soils are reported on a dry weight basis unless otherwise specified.
(2) Sample(s) analyzed using methodologies that have not been subjected to Maxxam's standard validation process for the submitted matrix and is not an Accredited method. Analysis performed with client consent, however results should be viewed with discretion

Encryption Key



Nure Tamanna
07 Aug 2013 14:12:35 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Nure Tamanna, Project Manager
Email: NTamanna@maxxam.ca
Phone# (905) 817-5765

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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.

Total cover pages: 2

Maxxam Job #: B3C1829
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Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

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Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3930		SK3931	SK3931		SK3932		
Sampling Date		2013/07/23		2013/07/23	2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-1**	**RDL**	**S-82415-072313-HS-2**	**S-82415-072313-HS-2 Lab-Dup**	**QC Batch**	**S-82415-072313-HS-3**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	ND	0.2	ND	ND	3294631	ND	0.2	3294631
Free Cyanide	ug/g	0.04	0.01	ND	ND	3294623	0.01	0.01	3294623
Moisture	%	33	1.0	3.5		3294965	6.3	1.0	3294965
Available (CaCl2) pH	pH	5.45		6.98		3295796	7.54		3295794
Metals									
Hot Water Ext. Boron (B)	ug/g	0.21	0.050	ND		3295510	0.094	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	870	500	ND		3296030	100	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND	0.20	ND		3295302	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	3.5	1.0	1.5		3295302	1.6	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	52	0.50	13		3295302	28	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	0.46	0.20	ND		3295302	0.20	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	0.12	0.10	ND		3295302	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	34	1.0	19		3295302	17	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	12	0.10	6.4		3295302	5.1	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	24	0.50	9.7		3295302	12	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	6.6	1.0	3.6		3295302	10	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	2.2	0.50	0.69		3295302	0.60	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	15	0.50	6.9		3295302	7.4	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND	0.50	ND		3295302	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND	0.20	ND		3295302	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	0.076	0.050	ND		3295302	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND	5.0	ND		3295302	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	1.0	0.050	0.36		3295302	0.40	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	67	5.0	46		3295302	35	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	110	5.0	30		3295302	52	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND	0.050	ND		3295302	ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3932		SK3933	SK3934		SK3935		
Sampling Date		2013/07/23		2013/07/23	2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-3 Lab-Dup**	**QC Batch**	**S-82415-072313-HS-4**	**S-82415-072313-HS-5**	**QC Batch**	**S-82415-072313-HS-6**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g		3294631	ND	ND	3294631	ND	0.2	3294631
Free Cyanide	ug/g		3294623	0.01	ND	3294623	ND	0.01	3294623
Moisture	%		3294965	10	9.5	3294986	8.8	1.0	3294965
Available (CaCl2) pH	pH		3295794	7.54	7.96	3295796	7.39		3295796
Metals									
Hot Water Ext. Boron (B)	ug/g		3295304	ND	ND	3295510	0.055	0.050	3295510
Acid Extractable Sulphur (S)	ug/g	99	3295272	150	82	3296030	130	50	3296030
Acid Extractable Antimony (Sb)	ug/g	ND	3295273	ND	ND	3295302	ND	0.20	3295302
Acid Extractable Arsenic (As)	ug/g	1.7	3295273	4.4	1.1	3295302	2.2	1.0	3295302
Acid Extractable Barium (Ba)	ug/g	23	3295273	31	8.0	3295302	47	0.50	3295302
Acid Extractable Beryllium (Be)	ug/g	ND	3295273	0.24	ND	3295302	0.33	0.20	3295302
Acid Extractable Cadmium (Cd)	ug/g	ND	3295273	ND	ND	3295302	0.11	0.10	3295302
Acid Extractable Chromium (Cr)	ug/g	15	3295273	23	17	3295302	30	1.0	3295302
Acid Extractable Cobalt (Co)	ug/g	4.3	3295273	7.3	4.8	3295302	7.7	0.10	3295302
Acid Extractable Copper (Cu)	ug/g	10	3295273	17	8.0	3295302	16	0.50	3295302
Acid Extractable Lead (Pb)	ug/g	8.8	3295273	6.5	2.8	3295302	6.5	1.0	3295302
Acid Extractable Molybdenum (Mo)	ug/g	0.50	3295273	0.83	0.61	3295302	0.68	0.50	3295302
Acid Extractable Nickel (Ni)	ug/g	6.7	3295273	12	5.5	3295302	14	0.50	3295302
Acid Extractable Selenium (Se)	ug/g	ND	3295273	ND	ND	3295302	ND	0.50	3295302
Acid Extractable Silver (Ag)	ug/g	ND	3295273	ND	ND	3295302	ND	0.20	3295302
Acid Extractable Thallium (Tl)	ug/g	ND	3295273	ND	ND	3295302	0.099	0.050	3295302
Acid Extractable Tin (Sn)	ug/g	ND	3295273	ND	ND	3295302	ND	5.0	3295302
Acid Extractable Uranium (U)	ug/g	0.36	3295273	0.50	0.40	3295302	0.45	0.050	3295302
Acid Extractable Vanadium (V)	ug/g	34	3295273	50	38	3295302	52	5.0	3295302
Acid Extractable Zinc (Zn)	ug/g	47	3295273	53	26	3295302	95	5.0	3295302
Acid Extractable Mercury (Hg)	ug/g	ND	3295273	ND	ND	3295302	ND	0.050	3295302

ND = Not detected
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QC Batch = Quality Control Batch

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Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3936		SK3937		SK3938		
Sampling Date		2013/07/24		2013/07/24		2013/07/23		
	Units	S-82415-072413-HS-7	QC Batch	S-82415-072413-HS-9	QC Batch	S-82415-072313-HS-2-99	RDL	QC Batch
Inorganics								
Chromium (VI)	ug/g	ND	3294738	ND	3294738	ND	0.2	3294631
Free Cyanide	ug/g	0.02	3295393	ND	3295393	ND	0.01	3294623
Moisture	%	10	3294986			3.3	1.0	3294965
Available (CaCl2) pH	pH	7.34	3295794	7.99	3295794	6.79		3295796
Metals								
Hot Water Ext. Boron (B)	ug/g	0.18	3295304	0.11	3295510	ND	0.050	3295510
Acid Extractable Sulphur (S)	ug/g	190	3295272	86	3296030	ND	50	3296030
Acid Extractable Antimony (Sb)	ug/g	ND	3295273	ND	3295302	ND	0.20	3295302
Acid Extractable Arsenic (As)	ug/g	2.0	3295273	2.4	3295302	1.5	1.0	3295302
Acid Extractable Barium (Ba)	ug/g	30	3295273	16	3295302	11	0.50	3295302
Acid Extractable Beryllium (Be)	ug/g	0.22	3295273	ND	3295302	ND	0.20	3295302
Acid Extractable Cadmium (Cd)	ug/g	0.10	3295273	ND	3295302	ND	0.10	3295302
Acid Extractable Chromium (Cr)	ug/g	18	3295273	22	3295302	9.2	1.0	3295302
Acid Extractable Cobalt (Co)	ug/g	6.9	3295273	8.2	3295302	4.4	0.10	3295302
Acid Extractable Copper (Cu)	ug/g	16	3295273	15	3295302	9.0	0.50	3295302
Acid Extractable Lead (Pb)	ug/g	9.1	3295273	4.4	3295302	2.2	1.0	3295302
Acid Extractable Molybdenum (Mo)	ug/g	0.69	3295273	0.84	3295302	ND	0.50	3295302
Acid Extractable Nickel (Ni)	ug/g	9.2	3295273	9.0	3295302	5.7	0.50	3295302
Acid Extractable Selenium (Se)	ug/g	ND	3295273	ND	3295302	ND	0.50	3295302
Acid Extractable Silver (Ag)	ug/g	ND	3295273	ND	3295302	ND	0.20	3295302
Acid Extractable Thallium (Tl)	ug/g	ND	3295273	ND	3295302	ND	0.050	3295302
Acid Extractable Tin (Sn)	ug/g	ND	3295273	ND	3295302	ND	5.0	3295302
Acid Extractable Uranium (U)	ug/g	0.42	3295273	0.39	3295302	0.23	0.050	3295302
Acid Extractable Vanadium (V)	ug/g	38	3295273	49	3295302	19	5.0	3295302
Acid Extractable Zinc (Zn)	ug/g	56	3295273	34	3295302	29	5.0	3295302
Acid Extractable Mercury (Hg)	ug/g	ND	3295273	ND	3295302	ND	0.050	3295302

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QC Batch = Quality Control Batch

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CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3938	SK3939	SK3939		SK3940		
Sampling Date		2013/07/23	2013/07/24	2013/07/24		2013/07/23		
	Units	**S-82415-072313-HS-2-99 Lab-Dup**	**S-82415-072413-HS-10**	**S-82415-072413-HS-10 Lab-Dup**	**QC Batch**	**S-82415-072313-HS-12**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g		ND		3294631	ND	0.2	3294738
Free Cyanide	ug/g		ND		3294623	ND	0.01	3295393
Moisture	%	3.4	4.4		3294965		1.0	
Available (CaCl2) pH	pH		7.69		3295796	7.81		3295794
Metals								
Hot Water Ext. Boron (B)	ug/g	ND	0.094		3295510	0.053	0.050	3295304
Acid Extractable Sulphur (S)	ug/g		53	63	3296030	100	50	3295272
Acid Extractable Antimony (Sb)	ug/g		ND	ND	3295302	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g		1.2	1.3	3295302	2.2	1.0	3295273
Acid Extractable Barium (Ba)	ug/g		14	12	3295302	16	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g		ND	ND	3295302	ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g		ND	ND	3295302	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g		13	14	3295302	28	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g		4.9	4.8	3295302	5.2	0.10	3295273
Acid Extractable Copper (Cu)	ug/g		8.0	8.3	3295302	7.1	0.50	3295273
Acid Extractable Lead (Pb)	ug/g		4.5	4.3	3295302	20	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g		ND	ND	3295302	0.81	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g		6.3	6.2	3295302	9.1	0.50	3295273
Acid Extractable Selenium (Se)	ug/g		ND	ND	3295302	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g		ND	ND	3295302	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g		ND	ND	3295302	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g		ND	ND	3295302	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g		0.25	0.29	3295302	0.42	0.050	3295273
Acid Extractable Vanadium (V)	ug/g		30	32	3295302	62	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g		29	27	3295302	29	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g		ND	ND	3295302	ND	0.050	3295273

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RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3941		SK3942		SK3943	SK3944		
Sampling Date		2013/07/24		2013/07/23		2013/07/23	2013/07/23		
	Units	S-82415-072413-HS-13	QC Batch	S-82415-072313-HS-14	QC Batch	S-82415-072313-HS-15	S-82415-072313-HS-16	RDL	QC Batch
Inorganics									
Chromium (VI)	ug/g	ND	3294738	ND	3294738	ND	ND	0.2	3294631
Free Cyanide	ug/g	0.01	3295393	0.01	3295393	0.04	0.02	0.01	3294623
Moisture	%			11	3294986	7.6	11	1.0	3294986
Available (CaCl2) pH	pH	7.57	3295794	7.24	3295794	5.90	7.44		3295796
Metals									
Hot Water Ext. Boron (B)	ug/g	0.072	3295510	0.053	3295304	ND	0.076	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	83	3296030	63	3295272	120	140	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND	3295302	ND	3295273	ND	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	1.5	3295302	1.6	3295273	100	1.7	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	21	3295302	15	3295273	24	20	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	ND	3295302	ND	3295273	ND	ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND	3295302	ND	3295273	ND	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	15	3295302	11	3295273	20	17	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	4.2	3295302	3.3	3295273	5.3	4.3	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	9.6	3295302	6.2	3295273	6.0	8.2	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	9.8	3295302	3.1	3295273	2.8	4.1	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	0.52	3295302	ND	3295273	0.65	0.57	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	7.0	3295302	5.5	3295273	11	6.3	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND	3295302	ND	3295273	ND	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND	3295302	ND	3295273	ND	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND	3295302	ND	3295273	ND	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND	3295302	ND	3295273	ND	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.31	3295302	0.31	3295273	0.33	0.31	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	31	3295302	23	3295273	55	32	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	36	3295302	28	3295273	35	40	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND	3295302	ND	3295273	ND	ND	0.050	3295273

ND = Not detected
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QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3945	SK3945		SK3946		
Sampling Date		2013/07/23	2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-17A**	**S-82415-072313-HS-17A Lab-Dup**	**QC Batch**	**S-82415-072313-HS-18**	**RDL**	**QC Batch**
Inorganics							
Chromium (VI)	ug/g	ND	ND	3294738	ND	0.2	3294738
Free Cyanide	ug/g	0.02	0.02	3295393	ND	0.01	3295393
Moisture	%	6.9		3294965	3.7	1.0	3294965
Available (CaCl2) pH	pH	7.23	7.23	3295796	7.91		3295794
Metals							
Hot Water Ext. Boron (B)	ug/g	ND		3295304	ND	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	96		3295272	67	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND		3295273	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	2.0		3295273	ND	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	20		3295273	9.6	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	ND		3295273	ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND		3295273	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	16		3295273	11	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	4.0		3295273	5.6	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	6.6		3295273	8.4	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	4.5		3295273	1.9	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	0.74		3295273	0.58	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	6.2		3295273	8.6	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND		3295273	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND		3295273	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND		3295273	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND		3295273	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.32		3295273	0.18	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	38		3295273	25	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	29		3295273	27	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND		3295273	ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3947		SK3948	SK3948	SK3949		
Sampling Date		2013/07/23		2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-17B**	**QC Batch**	**S-82415-072313-HS-19**	**S-82415-072313-HS-19 Lab-Dup**	**S-82415-072313-HS-20**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	ND	3294631	ND		ND	0.2	3294631
Free Cyanide	ug/g	ND	3294623	ND		ND	0.01	3294623
Moisture	%	9.4	3294986	4.8	4.7	4.9	1.0	3294986
Available (CaCl2) pH	pH	7.85	3295796	7.87		7.77		3295796
Metals								
Hot Water Ext. Boron (B)	ug/g	ND	3295510	0.065		0.11	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	ND	3296030	64		91	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND	3295302	ND		ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	1.0	3295302	ND		1.0	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	11	3295302	12		12	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	ND	3295302	ND		ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND	3295302	ND		ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	11	3295302	7.3		11	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	3.0	3295302	3.6		3.7	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	6.8	3295302	7.2		7.2	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	2.1	3295302	1.8		5.6	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	ND	3295302	ND		ND	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	4.6	3295302	5.1		5.2	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND	3295302	ND		ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND	3295302	ND		ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND	3295302	ND		ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND	3295302	ND		ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.23	3295302	0.29		0.22	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	22	3295302	13		24	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	24	3295302	25		26	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND	3295302	ND		ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3950		SK3951	SK3952		
Sampling Date		2013/07/23		2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-21**	**QC Batch**	**S-82415-072313-HS-22**	**S-82415-072313-HS-23**	**RDL**	**QC Batch**
Inorganics							
Chromium (VI)	ug/g	ND	3294738	ND	ND	0.2	3294738
Free Cyanide	ug/g	0.01	3295393	0.02	ND	0.01	3295393
Moisture	%	12	3294965	14	12	1.0	3294965
Available (CaCl2) pH	pH	7.47	3295794	7.27	7.68		3295794
Metals							
Hot Water Ext. Boron (B)	ug/g	0.093	3295510	0.069	ND	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	190	3296030	320	78	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND	3295302	ND	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	5.2	3295302	2.8	2.0	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	25	3295302	31	18	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	ND	3295302	0.24	ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND	3295302	ND	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	22	3295302	22	15	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	6.0	3295302	6.6	4.0	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	15	3295302	15	7.9	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	14	3295302	9.3	2.1	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	0.66	3295302	0.66	0.76	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	9.1	3295302	9.9	5.8	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND	3295302	ND	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND	3295302	ND	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND	3295302	ND	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND	3295302	ND	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.42	3295302	0.52	0.32	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	40	3295302	49	30	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	41	3295302	42	23	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND	3295302	ND	ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3953	SK3953		SK3954		
Sampling Date		2013/07/23	2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-24-0.6**	**S-82415-072313-HS-24-0.6 Lab-Dup**	**QC Batch**	**S-82415-072313-HS-24-1.6**	**RDL**	**QC Batch**
Inorganics							
Chromium (VI)	ug/g	ND		3294738	ND	0.2	3294738
Free Cyanide	ug/g	0.01		3295393	ND	0.01	3295393
Moisture	%	7.7		3294986	12	1.0	3294965
Available (CaCl2) pH	pH	7.25	7.19	3295794	7.80		3295794
Metals							
Hot Water Ext. Boron (B)	ug/g	0.25		3295304	0.064	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	160		3295272	140	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND		3295273	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	2.0		3295273	5.2	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	25		3295273	13	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	ND		3295273	ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND		3295273	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	19		3295273	27	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	4.6		3295273	5.1	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	10		3295273	11	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	23		3295273	3.7	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	0.60		3295273	0.73	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	7.3		3295273	7.1	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND		3295273	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND		3295273	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND		3295273	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND		3295273	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.35		3295273	0.25	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	36		3295273	63	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	40		3295273	28	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND		3295273	ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3955		SK3956		SK3957		
Sampling Date		2013/07/23		2013/07/23		2013/07/23		
	Units	S-82415-072313-HS-25	QC Batch	S-82415-072313-HS-26	QC Batch	S-82415-072313-HS-27	RDL	QC Batch
Inorganics								
Chromium (VI)	ug/g	ND	3294631	ND	3294738	ND	0.2	3294631
Free Cyanide	ug/g	ND	3294623	ND	3295393	0.02	0.01	3294623
Moisture	%	12	3294986	4.1	3294965	6.0	1.0	3294986
Available (CaCl2) pH	pH	7.64	3295796	7.87	3295794	7.42		3295796
Metals								
Hot Water Ext. Boron (B)	ug/g	0.091	3295304	0.057	3295510	0.075	0.050	3295510
Acid Extractable Sulphur (S)	ug/g	120	3295272	93	3296030	58	50	3296030
Acid Extractable Antimony (Sb)	ug/g	ND	3295273	ND	3295302	ND	0.20	3295302
Acid Extractable Arsenic (As)	ug/g	1.8	3295273	1.9	3295302	1.4	1.0	3295302
Acid Extractable Barium (Ba)	ug/g	21	3295273	21	3295302	25	0.50	3295302
Acid Extractable Beryllium (Be)	ug/g	ND	3295273	ND	3295302	ND	0.20	3295302
Acid Extractable Cadmium (Cd)	ug/g	ND	3295273	ND	3295302	ND	0.10	3295302
Acid Extractable Chromium (Cr)	ug/g	16	3295273	16	3295302	18	1.0	3295302
Acid Extractable Cobalt (Co)	ug/g	4.1	3295273	5.7	3295302	4.3	0.10	3295302
Acid Extractable Copper (Cu)	ug/g	8.2	3295273	13	3295302	7.6	0.50	3295302
Acid Extractable Lead (Pb)	ug/g	2.4	3295273	3.0	3295302	2.4	1.0	3295302
Acid Extractable Molybdenum (Mo)	ug/g	0.62	3295273	0.57	3295302	0.65	0.50	3295302
Acid Extractable Nickel (Ni)	ug/g	6.4	3295273	7.1	3295302	6.9	0.50	3295302
Acid Extractable Selenium (Se)	ug/g	ND	3295273	ND	3295302	ND	0.50	3295302
Acid Extractable Silver (Ag)	ug/g	ND	3295273	ND	3295302	ND	0.20	3295302
Acid Extractable Thallium (Tl)	ug/g	ND	3295273	ND	3295302	ND	0.050	3295302
Acid Extractable Tin (Sn)	ug/g	ND	3295273	ND	3295302	ND	5.0	3295302
Acid Extractable Uranium (U)	ug/g	0.39	3295273	0.32	3295302	0.33	0.050	3295302
Acid Extractable Vanadium (V)	ug/g	30	3295273	35	3295302	48	5.0	3295302
Acid Extractable Zinc (Zn)	ug/g	26	3295273	28	3295302	29	5.0	3295302
Acid Extractable Mercury (Hg)	ug/g	ND	3295273	ND	3295302	ND	0.050	3295302

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3958		SK3959		SK3960		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		
	Units	S-82415-072313-HS-28	QC Batch	S-82415-072413-HS-29	QC Batch	S-82415-072313-HS-30	RDL	QC Batch
Inorganics								
Chromium (VI)	ug/g	ND	3294738	ND	3294631	ND	0.2	3294738
Free Cyanide	ug/g	0.03	3295393	0.02	3294623	0.02	0.01	3295393
Moisture	%	10	3294965	12	3294986	12	1.0	3294986
Available (CaCl2) pH	pH	5.96	3295794	7.54	3295796	5.96		3295794
Metals								
Hot Water Ext. Boron (B)	ug/g	0.062	3295510	0.11	3295304	ND	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	88	3296030	230	3295272	220	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND	3295302	ND	3295273	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	1.5	3295302	2.3	3295273	2.4	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	23	3295302	42	3295273	24	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	0.25	3295302	0.26	3295273	0.28	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND	3295302	ND	3295273	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	19	3295302	23	3295273	33	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	4.5	3295302	6.1	3295273	5.7	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	9.4	3295302	14	3295273	6.7	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	2.8	3295302	3.7	3295273	3.2	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	ND	3295302	1.1	3295273	1.3	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	7.7	3295302	10	3295273	9.5	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND	3295302	ND	3295273	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND	3295302	ND	3295273	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND	3295302	0.055	3295273	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND	3295302	ND	3295273	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.32	3295302	0.54	3295273	0.39	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	38	3295302	46	3295273	86	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	30	3295302	46	3295273	37	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND	3295302	ND	3295273	ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3961	SK3961	SK3962	SK3963		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-31**	**S-82415-072313-HS-31 Lab-Dup**	**S-82415-072413-HS-32**	**S-82415-072313-HS-LTU1**	**RDL**	**QC Batch**
Inorganics							
Chromium (VI)	ug/g	ND		ND	ND	0.2	3294631
Free Cyanide	ug/g	0.01		0.07	0.02	0.01	3294623
Moisture	%	5.6		61	8.0	1.0	3294986
Available (CaCl2) pH	pH	7.13		5.96	7.07		3295796
Metals							
Hot Water Ext. Boron (B)	ug/g	0.059	0.052	0.38	0.089	0.050	3295304
Acid Extractable Sulphur (S)	ug/g	75		1100	160	50	3295272
Acid Extractable Antimony (Sb)	ug/g	ND		0.23	ND	0.20	3295273
Acid Extractable Arsenic (As)	ug/g	1.3		1.8	2.7	1.0	3295273
Acid Extractable Barium (Ba)	ug/g	23		94	29	0.50	3295273
Acid Extractable Beryllium (Be)	ug/g	ND		0.23	ND	0.20	3295273
Acid Extractable Cadmium (Cd)	ug/g	ND		0.13	ND	0.10	3295273
Acid Extractable Chromium (Cr)	ug/g	14		18	21	1.0	3295273
Acid Extractable Cobalt (Co)	ug/g	4.0		5.2	5.5	0.10	3295273
Acid Extractable Copper (Cu)	ug/g	8.0		22	70	0.50	3295273
Acid Extractable Lead (Pb)	ug/g	2.9		17	17	1.0	3295273
Acid Extractable Molybdenum (Mo)	ug/g	0.61		0.71	0.72	0.50	3295273
Acid Extractable Nickel (Ni)	ug/g	6.0		9.7	8.9	0.50	3295273
Acid Extractable Selenium (Se)	ug/g	ND		ND	ND	0.50	3295273
Acid Extractable Silver (Ag)	ug/g	ND		ND	ND	0.20	3295273
Acid Extractable Thallium (Tl)	ug/g	ND		ND	ND	0.050	3295273
Acid Extractable Tin (Sn)	ug/g	ND		ND	ND	5.0	3295273
Acid Extractable Uranium (U)	ug/g	0.41		1.3	0.40	0.050	3295273
Acid Extractable Vanadium (V)	ug/g	44		31	44	5.0	3295273
Acid Extractable Zinc (Zn)	ug/g	29		57	39	5.0	3295273
Acid Extractable Mercury (Hg)	ug/g	ND		ND	ND	0.050	3295273

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME SOIL INORGANICS PACKAGE (SOIL)

Maxxam ID		SK3964		SK3965		
Sampling Date		2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-LTU2**	**QC Batch**	**S-82415-072313-HS-LTU299**	**RDL**	**QC Batch**
Inorganics						
Chromium (VI)	ug/g	ND	3294631	ND	0.2	3294738
Free Cyanide	ug/g	0.03	3294623	0.02	0.01	3295393
Moisture	%	8.0	3294986	7.9	1.0	3294965
Available (CaCl2) pH	pH	7.03	3295796	7.02		3295794
Metals						
Hot Water Ext. Boron (B)	ug/g	0.15	3295510	0.12	0.050	3295510
Acid Extractable Sulphur (S)	ug/g	110	3296030	130	50	3296030
Acid Extractable Antimony (Sb)	ug/g	ND	3295302	ND	0.20	3295302
Acid Extractable Arsenic (As)	ug/g	1.8	3295302	1.9	1.0	3295302
Acid Extractable Barium (Ba)	ug/g	21	3295302	24	0.50	3295302
Acid Extractable Beryllium (Be)	ug/g	ND	3295302	ND	0.20	3295302
Acid Extractable Cadmium (Cd)	ug/g	ND	3295302	ND	0.10	3295302
Acid Extractable Chromium (Cr)	ug/g	17	3295302	19	1.0	3295302
Acid Extractable Cobalt (Co)	ug/g	4.3	3295302	4.6	0.10	3295302
Acid Extractable Copper (Cu)	ug/g	9.1	3295302	9.7	0.50	3295302
Acid Extractable Lead (Pb)	ug/g	13	3295302	15	1.0	3295302
Acid Extractable Molybdenum (Mo)	ug/g	0.56	3295302	0.74	0.50	3295302
Acid Extractable Nickel (Ni)	ug/g	6.8	3295302	7.5	0.50	3295302
Acid Extractable Selenium (Se)	ug/g	ND	3295302	ND	0.50	3295302
Acid Extractable Silver (Ag)	ug/g	ND	3295302	ND	0.20	3295302
Acid Extractable Thallium (Tl)	ug/g	ND	3295302	ND	0.050	3295302
Acid Extractable Tin (Sn)	ug/g	ND	3295302	ND	5.0	3295302
Acid Extractable Uranium (U)	ug/g	0.48	3295302	0.35	0.050	3295302
Acid Extractable Vanadium (V)	ug/g	39	3295302	39	5.0	3295302
Acid Extractable Zinc (Zn)	ug/g	35	3295302	36	5.0	3295302
Acid Extractable Mercury (Hg)	ug/g	ND	3295302	ND	0.050	3295302

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Conestoga-Rovers and Associates Ltd
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Sampler Initials: HS

CCME PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		SK3930	SK3931	SK3932	SK3932	SK3933		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-1**	**S-82415-072313-HS-2**	**S-82415-072313-HS-3**	**S-82415-072313-HS-3 Lab-Dup**	**S-82415-072313-HS-4**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	10	3294661
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	110	93	ND	50	3294661
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	82	74	ND	50	3294661
Reached Baseline at C50	ug/g	YES	YES	YES	YES	YES		3294661
Surrogate Recovery (%)								
o-Terphenyl	%	92	88	87	91	92		3294661

Maxxam ID		SK3934	SK3935	SK3936	SK3937	SK3938		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-5**	**S-82415-072313-HS-6**	**S-82415-072413-HS-7**	**S-82415-072413-HS-9**	**S-82415-072313-HS-2-99**	**RDL**	**QC Batch**
Inorganics								
Moisture	%				2.5		1.0	3294965
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	10	3294661
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	190	ND	ND	50	3294661
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	170	ND	ND	50	3294661
Reached Baseline at C50	ug/g	YES	YES	NO	YES	YES		3294661
Surrogate Recovery (%)								
o-Terphenyl	%	93	93	89	94	92		3294661

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
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Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		SK3939	SK3940	SK3941	SK3942	SK3943		
Sampling Date		2013/07/24	2013/07/23	2013/07/24	2013/07/23	2013/07/23		
	Units	**S-82415-072413-HS-10**	**S-82415-072313-HS-12**	**S-82415-072413-HS-13**	**S-82415-072313-HS-14**	**S-82415-072313-HS-15**	**RDL**	**QC Batch**
Inorganics								
Moisture	%		8.8	11			1.0	3294965
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	110	ND	ND	10	3294661
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	540	ND	ND	50	3294661
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	740	ND	ND	50	3294661
Reached Baseline at C50	ug/g	YES	YES	NO	YES	YES		3294661
Surrogate Recovery (%)								
o-Terphenyl	%	91	94	95	96	92		3294661

Maxxam ID		SK3944	SK3945	SK3946	SK3947	SK3948		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-16**	**S-82415-072313-HS-17A**	**S-82415-072313-HS-18**	**S-82415-072313-HS-17B**	**S-82415-072313-HS-19**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	10	3294661
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	50	3294661
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	50	3294661
Reached Baseline at C50	ug/g	YES	YES	YES	YES	YES		3294661
Surrogate Recovery (%)								
o-Terphenyl	%	94	89	94	92	91		3294661

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Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

CCME PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		SK3949		SK3950	SK3950	SK3951		
Sampling Date		2013/07/23		2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-20**	**QC Batch**	**S-82415-072313-HS-21**	**S-82415-072313-HS-21 Lab-Dup**	**S-82415-072313-HS-22**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	64	3294661	130	150	13	10	3295281
F3 (C16-C34 Hydrocarbons)	ug/g	ND	3294661	630	750	52	50	3295281
F4 (C34-C50 Hydrocarbons)	ug/g	ND	3294661	180	190	ND	50	3295281
Reached Baseline at C50	ug/g	YES	3294661	YES	YES	YES		3295281
Surrogate Recovery (%)								
o-Terphenyl	%	96	3294661	84	84	79		3295281

Maxxam ID		SK3952	SK3953	SK3954	SK3955		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-23**	**S-82415-072313-HS-24-0.6**	**S-82415-072313-HS-24-1.6**	**S-82415-072313-HS-25**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	ND	1300	ND	ND	10	3295281
F3 (C16-C34 Hydrocarbons)	ug/g	ND	1300	ND	ND	50	3295281
F4 (C34-C50 Hydrocarbons)	ug/g	ND	730	ND	ND	50	3295281
Reached Baseline at C50	ug/g	YES	YES	YES	YES		3295281
Surrogate Recovery (%)							
o-Terphenyl	%	81	84	87	81		3295281

ND = Not detected
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QC Batch = Quality Control Batch

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CCME PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		SK3956	SK3957	SK3958	SK3959	SK3960		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-26**	**S-82415-072313-HS-27**	**S-82415-072313-HS-28**	**S-82415-072413-HS-29**	**S-82415-072313-HS-30**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	ND	ND	ND	10	3295281
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	ND	150	ND	50	3295281
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	ND	140	ND	50	3295281
Reached Baseline at C50	ug/g	YES	YES	YES	NO	YES		3295281
Surrogate Recovery (%)								
o-Terphenyl	%	79	83	83	93	77		3295281

Maxxam ID		SK3961		SK3962		SK3963		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		
	Units	**S-82415-072313-HS-31**	**RDL**	**S-82415-072413-HS-32**	**RDL**	**S-82415-072313-HS-LTU1**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	ND	10	21	20	1000	10	3295281
F3 (C16-C34 Hydrocarbons)	ug/g	ND	50	1500	100	1500	50	3295281
F4 (C34-C50 Hydrocarbons)	ug/g	ND	50	1300	100	750	50	3295281
Reached Baseline at C50	ug/g	YES		NO		YES		3295281
Surrogate Recovery (%)								
o-Terphenyl	%	82		87		86		3295281

ND = Not detected
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QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
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Client Project #: 82415-20

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Sampler Initials: HS

CCME PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		SK3964	SK3965		SK3966		
Sampling Date		2013/07/23	2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-LTU2**	**S-82415-072313-HS-LTU299**	**RDL**	**S-82415-072313-HS-ASP**	**RDL**	**QC Batch**
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	2800	3000	10	97000	100	3295281
F3 (C16-C34 Hydrocarbons)	ug/g	1800	2300	50	90000	500	3295281
F4 (C34-C50 Hydrocarbons)	ug/g	740	1200	50	130000	500	3295281
Reached Baseline at C50	ug/g	YES	YES		NO		3295281
Surrogate Recovery (%)							
o-Terphenyl	%	87	86		76		3295281

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

O.REG 558 TCLP VOLATILE ORGANICS (SOIL)

Maxxam ID		SK3966		
Sampling Date		2013/07/23		
	Units	**S-82415-072313-HS-ASP**	**RDL**	**QC Batch**
Charge/Prep Analysis				
Amount Extracted (Wet Weight) (g)	N/A	25	N/A	3293875
Volatile Organics				
Leachable Benzene	mg/L	ND	0.020	3295867
Leachable Carbon Tetrachloride	mg/L	ND	0.020	3295867
Leachable Chlorobenzene	mg/L	ND	0.020	3295867
Leachable Chloroform	mg/L	ND	0.020	3295867
Leachable 1,2-Dichlorobenzene	mg/L	ND	0.050	3295867
Leachable 1,4-Dichlorobenzene	mg/L	ND	0.050	3295867
Leachable 1,2-Dichloroethane	mg/L	ND	0.050	3295867
Leachable 1,1-Dichloroethylene	mg/L	ND	0.020	3295867
Leachable Methylene Chloride(Dichloromethane)	mg/L	ND	0.20	3295867
Leachable Methyl Ethyl Ketone (2-Butanone)	mg/L	ND	1.0	3295867
Leachable Tetrachloroethylene	mg/L	ND	0.020	3295867
Leachable Trichloroethylene	mg/L	ND	0.020	3295867
Leachable Vinyl Chloride	mg/L	ND	0.020	3295867
Surrogate Recovery (%)				
Leachable 4-Bromofluorobenzene	%	99		3295867
Leachable D4-1,2-Dichloroethane	%	97		3295867
Leachable D8-Toluene	%	99		3295867

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

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O.REG 558 TCLP LEACHATE PREPARATION (SOIL)

Maxxam ID		SK3966		
Sampling Date		2013/07/23		
	Units	**S-82415-072313-HS-ASP**	**RDL**	**QC Batch**
Inorganics				
Final pH	pH	4.93		3294797
Initial pH	pH	7.20		3294797
TCLP - % Solids	%	100	0.2	3294794
TCLP Extraction Fluid	N/A	FLUID 1		3294796

O.REG 558 TCLP METALS (SOIL)

Maxxam ID		SK3966		
Sampling Date		2013/07/23		
	Units	**S-82415-072313-HS-ASP**	**RDL**	**QC Batch**
Metals				
Leachable Mercury (Hg)	mg/L	ND	0.001	3295817
Leachable Arsenic (As)	mg/L	ND	0.2	3295902
Leachable Barium (Ba)	mg/L	ND	0.2	3295902
Leachable Boron (B)	mg/L	ND	0.1	3295902
Leachable Cadmium (Cd)	mg/L	ND	0.05	3295902
Leachable Chromium (Cr)	mg/L	ND	0.1	3295902
Leachable Lead (Pb)	mg/L	ND	0.1	3295902
Leachable Selenium (Se)	mg/L	ND	0.1	3295902
Leachable Silver (Ag)	mg/L	ND	0.01	3295902
Leachable Uranium (U)	mg/L	ND	0.01	3295902

N/A = Not Applicable
ND = Not detected
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QC Batch = Quality Control Batch

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Sampler Initials: HS

O.REG 558 TCLP SEMI-VOLATILE ORGANICS (SOIL)

Maxxam ID		SK3966		
Sampling Date		2013/07/23		
	Units	**S-82415-072313-HS-ASP**	**RDL**	**QC Batch**
Semivolatile Organics				
Leachable Benzo(a)pyrene	ug/L	ND	1	3296624
Leachable m/p-Cresol	ug/L	98	25	3296624
Leachable o-Cresol	ug/L	29	25	3296624
Leachable Cresol Total	ug/L	130	25	3296624
Leachable 2,4-Dichlorophenol	ug/L	ND	25	3296624
Leachable Hexachlorobenzene	ug/L	ND	100	3296624
Leachable Hexachloroethane	ug/L	ND	100	3296624
Leachable Nitrobenzene	ug/L	ND	100	3296624
Leachable Pentachlorophenol	ug/L	ND	25	3296624
Leachable Pyridine	ug/L	ND	100	3296624
Leachable 2,3,4,6-Tetrachlorophenol	ug/L	ND	25	3296624
Leachable 2,4,5-Trichlorophenol	ug/L	ND	5	3296624
Leachable 2,4,6-Trichlorophenol	ug/L	ND	25	3296624
Surrogate Recovery (%)				
Leachable 2,4,6-Tribromophenol	%	70		3296624
Leachable 2-Fluorobiphenyl	%	61		3296624
Leachable 2-Fluorophenol	%	30		3296624
Leachable D14-Terphenyl (FS)	%	73		3296624
Leachable D5-Nitrobenzene	%	65		3296624
Leachable D5-Phenol	%	30		3296624

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3930	SK3931		SK3932		SK3933		
Sampling Date		2013/07/23	2013/07/23		2013/07/23		2013/07/23		
	Units	S-82415-072313-HS-1	S-82415-072313-HS-2	RDL	S-82415-072313-HS-3	RDL	S-82415-072313-HS-4	RDL	QC Batch
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
Acenaphthylene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
Anthracene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
Benzo(a)anthracene	ug/g	ND	ND	0.0050	0.047	0.010	ND	0.0050	3294732
Benzo(a)pyrene	ug/g	ND	ND	0.0050	0.039	0.010	ND	0.0050	3294732
Benzo(b/j)fluoranthene	ug/g	ND	ND	0.0050	0.055	0.010	ND	0.0050	3294732
Benzo(g,h,i)perylene	ug/g	ND	ND	0.0050	0.027	0.010	ND	0.0050	3294732
Benzo(k)fluoranthene	ug/g	ND	ND	0.0050	0.020	0.010	ND	0.0050	3294732
Chrysene	ug/g	ND	ND	0.0050	0.034	0.010	ND	0.0050	3294732
Dibenz(a,h)anthracene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
Fluoranthene	ug/g	ND	ND	0.0050	0.11	0.010	ND	0.0050	3294732
Fluorene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
Indeno(1,2,3-cd)pyrene	ug/g	ND	ND	0.0050	0.025	0.010	ND	0.0050	3294732
1-Methylnaphthalene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
2-Methylnaphthalene	ug/g	ND	ND	0.0050	ND	0.010	ND	0.0050	3294732
Naphthalene	ug/g	ND	ND	0.0050	0.013	0.010	ND	0.0050	3294732
Phenanthrene	ug/g	ND	ND	0.0050	0.032	0.010	ND	0.0050	3294732
Pyrene	ug/g	ND	ND	0.0050	0.088	0.010	ND	0.0050	3294732
Surrogate Recovery (%)									
D10-Anthracene	%	65	83		89		85		3294732
D14-Terphenyl (FS)	%	70	83		85		85		3294732
D8-Acenaphthylene	%	79	81		78		100		3294732

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SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3934	SK3935		SK3936		SK3937		
Sampling Date		2013/07/23	2013/07/23		2013/07/24		2013/07/24		
	Units	**S-82415-072313-HS-5**	**S-82415-072313-HS-6**	**RDL**	**S-82415-072413-HS-7**	**RDL**	**S-82415-072413-HS-9**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	ND	0.011	0.0050	ND	0.050	ND	0.0050	3294732
Acenaphthylene	ug/g	ND	ND	0.0050	ND	0.050	ND	0.0050	3294732
Anthracene	ug/g	ND	0.013	0.0050	ND	0.050	ND	0.0050	3294732
Benzo(a)anthracene	ug/g	ND	0.028	0.0050	ND	0.050	ND	0.0050	3294732
Benzo(a)pyrene	ug/g	ND	0.025	0.0050	ND	0.050	ND	0.0050	3294732
Benzo(b/j)fluoranthene	ug/g	ND	0.031	0.0050	ND	0.050	ND	0.0050	3294732
Benzo(g,h,i)perylene	ug/g	ND	0.015	0.0050	ND	0.050	ND	0.0050	3294732
Benzo(k)fluoranthene	ug/g	ND	0.012	0.0050	ND	0.050	ND	0.0050	3294732
Chrysene	ug/g	ND	0.023	0.0050	ND	0.050	ND	0.0050	3294732
Dibenz(a,h)anthracene	ug/g	ND	ND	0.0050	ND	0.050	ND	0.0050	3294732
Fluoranthene	ug/g	ND	0.054	0.0050	0.072	0.050	ND	0.0050	3294732
Fluorene	ug/g	ND	0.0095	0.0050	ND	0.050	ND	0.0050	3294732
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.015	0.0050	ND	0.050	ND	0.0050	3294732
1-Methylnaphthalene	ug/g	ND	ND	0.0050	ND	0.050	ND	0.0050	3294732
2-Methylnaphthalene	ug/g	ND	0.0057	0.0050	ND	0.050	ND	0.0050	3294732
Naphthalene	ug/g	ND	0.017	0.0050	0.075	0.050	ND	0.0050	3294732
Phenanthrene	ug/g	ND	0.044	0.0050	0.25	0.050	ND	0.0050	3294732
Pyrene	ug/g	ND	0.039	0.0050	0.053	0.050	ND	0.0050	3294732
Surrogate Recovery (%)									
D10-Anthracene	%	92	88		103		95		3294732
D14-Terphenyl (FS)	%	88	88		83		92		3294732
D8-Acenaphthylene	%	84	83		75		85		3294732

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3938		SK3939	SK3939		SK3940		
Sampling Date		2013/07/23		2013/07/24	2013/07/24		2013/07/23		
	Units	**S-82415-072313-HS-2-99**	**QC Batch**	**S-82415-072413-HS-10**	**S-82415-072413-HS-10 Lab-Dup**	**QC Batch**	**S-82415-072313-HS-12**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Acenaphthylene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Anthracene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Benzo(a)anthracene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Benzo(a)pyrene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Benzo(b/j)fluoranthene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Benzo(g,h,i)perylene	ug/g	ND	3294732	ND	ND	3295243	0.0062	0.0050	3294732
Benzo(k)fluoranthene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Chrysene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Dibenz(a,h)anthracene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Fluoranthene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Fluorene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Indeno(1,2,3-cd)pyrene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
1-Methylnaphthalene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
2-Methylnaphthalene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Naphthalene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Phenanthrene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Pyrene	ug/g	ND	3294732	ND	ND	3295243	ND	0.0050	3294732
Surrogate Recovery (%)									
D10-Anthracene	%	83	3294732	97	91	3295243	96		3294732
D14-Terphenyl (FS)	%	82	3294732	92	90	3295243	92		3294732
D8-Acenaphthylene	%	76	3294732	83	84	3295243	84		3294732

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3941		SK3942	SK3943	SK3944		
Sampling Date		2013/07/24		2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072413-HS-13**	**RDL**	**S-82415-072313-HS-14**	**S-82415-072313-HS-15**	**S-82415-072313-HS-16**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
Acenaphthylene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
Anthracene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
Benzo(a)anthracene	ug/g	ND	0.050	0.0076	ND	0.0064	0.0050	3294732
Benzo(a)pyrene	ug/g	ND	0.050	0.0089	ND	0.0073	0.0050	3294732
Benzo(b/j)fluoranthene	ug/g	0.062	0.050	0.014	ND	0.010	0.0050	3294732
Benzo(g,h,i)perylene	ug/g	ND	0.050	0.0088	ND	0.0066	0.0050	3294732
Benzo(k)fluoranthene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
Chrysene	ug/g	ND	0.050	0.0077	ND	0.0063	0.0050	3294732
Dibenz(a,h)anthracene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
Fluoranthene	ug/g	0.059	0.050	0.016	ND	0.014	0.0050	3294732
Fluorene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.050	0.0085	ND	0.0055	0.0050	3294732
1-Methylnaphthalene	ug/g	ND	0.050	ND	ND	ND	0.0050	3294732
2-Methylnaphthalene	ug/g	0.059	0.050	ND	ND	ND	0.0050	3294732
Naphthalene	ug/g	0.094	0.050	ND	ND	ND	0.0050	3294732
Phenanthrene	ug/g	0.077	0.050	0.0054	ND	0.0063	0.0050	3294732
Pyrene	ug/g	0.081	0.050	0.012	ND	0.011	0.0050	3294732
Surrogate Recovery (%)								
D10-Anthracene	%	100		78	84	83		3294732
D14-Terphenyl (FS)	%	85		81	84	84		3294732
D8-Acenaphthylene	%	75		73	76	77		3294732

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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Conestoga-Rovers and Associates Ltd
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SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3945	SK3946	SK3947	SK3948		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-17A**	**S-82415-072313-HS-18**	**S-82415-072313-HS-17B**	**S-82415-072313-HS-19**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons							
Acenaphthene	ug/g	ND	ND	ND	ND	0.0050	3294732
Acenaphthylene	ug/g	ND	ND	ND	ND	0.0050	3294732
Anthracene	ug/g	ND	ND	ND	ND	0.0050	3294732
Benzo(a)anthracene	ug/g	ND	ND	ND	ND	0.0050	3294732
Benzo(a)pyrene	ug/g	ND	ND	ND	ND	0.0050	3294732
Benzo(b/j)fluoranthene	ug/g	ND	ND	ND	ND	0.0050	3294732
Benzo(g,h,i)perylene	ug/g	ND	ND	ND	ND	0.0050	3294732
Benzo(k)fluoranthene	ug/g	ND	ND	ND	ND	0.0050	3294732
Chrysene	ug/g	ND	ND	ND	ND	0.0050	3294732
Dibenz(a,h)anthracene	ug/g	ND	ND	ND	ND	0.0050	3294732
Fluoranthene	ug/g	0.0056	ND	0.0059	ND	0.0050	3294732
Fluorene	ug/g	ND	ND	ND	ND	0.0050	3294732
Indeno(1,2,3-cd)pyrene	ug/g	ND	ND	ND	ND	0.0050	3294732
1-Methylnaphthalene	ug/g	ND	ND	ND	ND	0.0050	3294732
2-Methylnaphthalene	ug/g	ND	ND	ND	ND	0.0050	3294732
Naphthalene	ug/g	ND	ND	ND	ND	0.0050	3294732
Phenanthrene	ug/g	ND	ND	ND	ND	0.0050	3294732
Pyrene	ug/g	ND	ND	ND	ND	0.0050	3294732
Surrogate Recovery (%)							
D10-Anthracene	%	85	89	96	91		3294732
D14-Terphenyl (FS)	%	86	87	94	90		3294732
D8-Acenaphthylene	%	76	83	89	106		3294732

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3949	SK3949		SK3950			SK3951		
Sampling Date		2013/07/23	2013/07/23		2013/07/23			2013/07/23		
	Units	**S-82415-072313-HS-20**	**S-82415-072313-HS-20 Lab-Dup**	**RDL**	**S-82415-072313-HS-21**	**RDL**	**QC Batch**	**S-82415-072313-HS-22**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	ND	ND	0.0050	ND(1)	0.010	3294732	ND	0.0050	3295243
Acenaphthylene	ug/g	ND	ND	0.0050	ND(1)	0.010	3294732	ND	0.0050	3295243
Anthracene	ug/g	ND	ND	0.0050	0.0086	0.0050	3294732	ND	0.0050	3295243
Benzo(a)anthracene	ug/g	ND	ND	0.0050	0.013	0.0050	3294732	ND	0.0050	3295243
Benzo(a)pyrene	ug/g	ND	ND	0.0050	0.033	0.0050	3294732	ND	0.0050	3295243
Benzo(b/j)fluoranthene	ug/g	0.0086	ND	0.0050	0.021	0.0050	3294732	ND	0.0050	3295243
Benzo(g,h,i)perylene	ug/g	0.0051	ND	0.0050	0.045	0.0050	3294732	ND	0.0050	3295243
Benzo(k)fluoranthene	ug/g	ND	ND	0.0050	ND	0.0050	3294732	ND	0.0050	3295243
Chrysene	ug/g	ND	ND	0.0050	0.016	0.0050	3294732	ND	0.0050	3295243
Dibenz(a,h)anthracene	ug/g	ND	ND	0.0050	ND	0.0050	3294732	ND	0.0050	3295243
Fluoranthene	ug/g	0.0083	ND	0.0050	0.029	0.0050	3294732	ND	0.0050	3295243
Fluorene	ug/g	ND	ND	0.0050	ND(1)	0.050	3294732	ND	0.0050	3295243
Indeno(1,2,3-cd)pyrene	ug/g	0.0052	ND	0.0050	0.014	0.0050	3294732	ND	0.0050	3295243
1-Methylnaphthalene	ug/g	ND	ND	0.0050	0.079	0.0050	3294732	ND	0.0050	3295243
2-Methylnaphthalene	ug/g	ND	ND	0.0050	0.13	0.0050	3294732	ND	0.0050	3295243
Naphthalene	ug/g	ND(1)	ND(1)	0.010	ND(1)	0.10	3294732	ND	0.0050	3295243
Phenanthrene	ug/g	0.0058	ND	0.0050	0.045	0.0050	3294732	ND	0.0050	3295243
Pyrene	ug/g	0.0077	ND	0.0050	0.054	0.0050	3294732	ND	0.0050	3295243
Surrogate Recovery (%)										
D10-Anthracene	%	87	86		88		3294732	90		3295243
D14-Terphenyl (FS)	%	87	85		89		3294732	90		3295243
D8-Acenaphthylene	%	75	77		76		3294732	83		3295243

ND = Not detected
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QC Batch = Quality Control Batch
(1) - Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B3C1829
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Client Project #: 82415-20

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SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3952		SK3953		SK3954	SK3955		
Sampling Date		2013/07/23		2013/07/23		2013/07/23	2013/07/23		
	Units	S-82415-072313-HS-23	RDL	S-82415-072313-HS-24-0.6	RDL	S-82415-072313-HS-24-1.6	S-82415-072313-HS-25	RDL	QC Batch
Polyaromatic Hydrocarbons									
Acenaphthene	ug/g	ND	0.0050	ND	0.025	ND	ND	0.0050	3295243
Acenaphthylene	ug/g	ND	0.0050	ND	0.025	ND	ND	0.0050	3295243
Anthracene	ug/g	ND	0.0050	ND	0.025	ND	ND	0.0050	3295243
Benzo(a)anthracene	ug/g	ND	0.0050	0.031	0.025	ND	ND	0.0050	3295243
Benzo(a)pyrene	ug/g	ND	0.0050	0.063	0.025	0.0054	ND	0.0050	3295243
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	0.10	0.025	0.0076	ND	0.0050	3295243
Benzo(g,h,i)perylene	ug/g	ND	0.0050	0.067	0.025	0.0056	ND	0.0050	3295243
Benzo(k)fluoranthene	ug/g	ND	0.0050	0.031	0.025	ND	ND	0.0050	3295243
Chrysene	ug/g	ND	0.0050	0.028	0.025	ND	ND	0.0050	3295243
Dibenz(a,h)anthracene	ug/g	ND	0.0050	ND	0.025	ND	ND	0.0050	3295243
Fluoranthene	ug/g	ND	0.0050	0.045	0.025	0.0068	ND	0.0050	3295243
Fluorene	ug/g	ND	0.0050	ND	0.025	ND	ND	0.0050	3295243
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	0.052	0.025	ND	ND	0.0050	3295243
1-Methylnaphthalene	ug/g	ND	0.0050	0.025	0.025	ND	ND	0.0050	3295243
2-Methylnaphthalene	ug/g	ND	0.0050	ND	0.025	ND	ND	0.0050	3295243
Naphthalene	ug/g	ND	0.0050	ND(1)	0.10	ND	ND	0.0050	3295243
Phenanthrene	ug/g	ND	0.0050	0.039	0.025	ND	ND	0.0050	3295243
Pyrene	ug/g	ND	0.0050	0.14	0.025	0.0098	ND	0.0050	3295243
Surrogate Recovery (%)									
D10-Anthracene	%	92		108		97	95		3295243
D14-Terphenyl (FS)	%	89		90		95	92		3295243
D8-Acenaphthylene	%	83		92		86	86		3295243

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Detection Limit was raised due to matrix interferences.

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
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Your P.O. #: 20-016130-1
Sampler Initials: HS

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3956	SK3957	SK3958	SK3959	SK3960		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-26**	**S-82415-072313-HS-27**	**S-82415-072313-HS-28**	**S-82415-072413-HS-29**	**S-82415-072313-HS-30**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Acenaphthylene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Anthracene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Benzo(a)anthracene	ug/g	ND	ND	ND	0.015	ND	0.0050	3295243
Benzo(a)pyrene	ug/g	ND	ND	ND	0.038	ND	0.0050	3295243
Benzo(b/j)fluoranthene	ug/g	ND	ND	ND	0.015	ND	0.0050	3295243
Benzo(g,h,i)perylene	ug/g	ND	ND	ND	0.071	ND	0.0050	3295243
Benzo(k)fluoranthene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Chrysene	ug/g	ND	ND	ND	0.020	ND	0.0050	3295243
Dibenz(a,h)anthracene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Fluoranthene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Fluorene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Indeno(1,2,3-cd)pyrene	ug/g	ND	ND	ND	0.018	ND	0.0050	3295243
1-Methylnaphthalene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
2-Methylnaphthalene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Naphthalene	ug/g	ND	ND	ND	ND	ND	0.0050	3295243
Phenanthrene	ug/g	ND	ND	ND	0.0061	ND	0.0050	3295243
Pyrene	ug/g	ND	ND	ND	0.044	ND	0.0050	3295243
Surrogate Recovery (%)								
D10-Anthracene	%	90	90	90	92	91		3295243
D14-Terphenyl (FS)	%	89	90	91	92	94		3295243
D8-Acenaphthylene	%	107	84	84	86	86		3295243

ND = Not detected
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QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3961		SK3962		SK3963		SK3964		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-31**	**RDL**	**S-82415-072413-HS-32**	**RDL**	**S-82415-072313-HS-LTU1**	**RDL**	**S-82415-072313-HS-LTU2**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons										
Acenaphthene	ug/g	ND	0.0050	ND	0.10	ND	0.0050	ND(1)	0.040	3295243
Acenaphthylene	ug/g	ND	0.0050	ND	0.10	ND	0.0050	ND(1)	0.050	3295243
Anthracene	ug/g	ND	0.0050	ND	0.10	0.0054	0.0050	0.038	0.025	3295243
Benzo(a)anthracene	ug/g	ND	0.0050	ND	0.10	0.011	0.0050	0.28	0.025	3295243
Benzo(a)pyrene	ug/g	ND	0.0050	ND	0.10	0.018	0.0050	0.31	0.025	3295243
Benzo(b/j)fluoranthene	ug/g	ND	0.0050	ND	0.10	0.031	0.0050	0.21	0.025	3295243
Benzo(g,h,i)perylene	ug/g	ND	0.0050	ND	0.10	0.016	0.0050	0.28	0.025	3295243
Benzo(k)fluoranthene	ug/g	ND	0.0050	ND	0.10	0.0089	0.0050	0.028	0.025	3295243
Chrysene	ug/g	ND	0.0050	ND	0.10	0.011	0.0050	0.39	0.025	3295243
Dibenz(a,h)anthracene	ug/g	ND	0.0050	ND	0.10	ND	0.0050	ND	0.025	3295243
Fluoranthene	ug/g	ND	0.0050	ND	0.10	0.011	0.0050	0.20	0.025	3295243
Fluorene	ug/g	ND	0.0050	ND	0.10	0.0082	0.0050	ND(1)	0.040	3295243
Indeno(1,2,3-cd)pyrene	ug/g	ND	0.0050	ND	0.10	0.012	0.0050	0.087	0.025	3295243
1-Methylnaphthalene	ug/g	ND	0.0050	0.14	0.10	ND(1)	0.020	ND(1)	0.050	3295243
2-Methylnaphthalene	ug/g	ND	0.0050	0.22	0.10	ND(1)	0.010	0.028	0.025	3295243
Naphthalene	ug/g	ND	0.0050	0.19	0.10	ND	0.0050	ND(1)	0.20	3295243
Phenanthrene	ug/g	ND	0.0050	ND	0.10	ND	0.0050	0.14	0.025	3295243
Pyrene	ug/g	ND	0.0050	ND	0.10	0.059	0.0050	1.3	0.025	3295243
Surrogate Recovery (%)										
D10-Anthracene	%	93		107		92		97		3295243
D14-Terphenyl (FS)	%	93		71		90		95		3295243
D8-Acenaphthylene	%	84		74		91		95		3295243

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Detection Limit was raised due to matrix interferences.

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

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Sampler Initials: HS

SEMI-VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		SK3965			SK3966	SK3966		
Sampling Date		2013/07/23			2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-LTU299**	**RDL**	**QC Batch**	**S-82415-072313-HS-ASP**	**S-82415-072313-HS-ASP Lab-Dup**	**RDL**	**QC Batch**
Polyaromatic Hydrocarbons								
Acenaphthene	ug/g	ND(1)	0.10	3295243	33	27	2	3295316
Acenaphthylene	ug/g	0.057	0.025	3295243	ND	ND	1	3295316
Anthracene	ug/g	0.35	0.025	3295243	ND	ND	1	3295316
Benzo(a)anthracene	ug/g	1.4	0.025	3295243	ND	ND	2	3295316
Benzo(a)pyrene	ug/g	1.6	0.025	3295243	ND	ND	1	3295316
Benzo(b/j)fluoranthene	ug/g	0.80	0.025	3295243	ND	ND	2	3295316
Benzo(g,h,i)perylene	ug/g	1.3	0.025	3295243	ND	ND	4	3295316
Benzo(k)fluoranthene	ug/g	0.059	0.025	3295243	ND	ND	2	3295316
Chrysene	ug/g	2.0	0.025	3295243	ND	ND	2	3295316
Dibenz(a,h)anthracene	ug/g	0.062	0.025	3295243	ND	ND	4	3295316
Fluoranthene	ug/g	0.85	0.025	3295243	ND	ND	1	3295316
Fluorene	ug/g	0.20	0.025	3295243	22	18	1	3295316
Indeno(1,2,3-cd)pyrene	ug/g	0.36	0.025	3295243	ND	ND	4	3295316
1-Methylnaphthalene	ug/g	0.36	0.025	3295243	390	320	1	3295316
2-Methylnaphthalene	ug/g	ND(1)	0.20	3295243	650	530	1	3295316
Naphthalene	ug/g	0.16	0.025	3295243	240	200	1	3295316
Phenanthrene	ug/g	3.2	0.025	3295243	10	7	1	3295316
Pyrene	ug/g	5.9	0.025	3295243	ND	ND	1	3295316
Surrogate Recovery (%)								
D10-Anthracene	%	104		3295243	NC(2)	NC(2)		3295316
D14-Terphenyl (FS)	%	110		3295243	NC(2)	NC(2)		3295316
D8-Acenaphthylene	%	109		3295243	NC(2)	NC(2)		3295316

ND = Not detected
NC = Non-calculable
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Detection Limit was raised due to matrix interferences.
(2) - Surrogate recovery was not calculated (NC) due to matrix interferences.

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3930	SK3930	SK3931	SK3932	SK3933		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-1**	**S-82415-072313-HS-1 Lab-Dup**	**S-82415-072313-HS-2**	**S-82415-072313-HS-3**	**S-82415-072313-HS-4**	**RDL**	**QC Batch**
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	ND	0.50	3294636
Benzene	ug/g	ND	ND	ND	ND	ND	0.0060	3294636
Bromodichloromethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Bromoform	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Bromomethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Chlorobenzene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Chloroform	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Dibromochloromethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	ND	0.030	3294636
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	ND	0.040	3294636
Ethylbenzene	ug/g	ND	ND	ND	ND	ND	0.010	3294636
Ethylene Dibromide	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Hexane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	ND	0.50	3294636
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	ND	0.50	3294636
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Styrene	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Tetrachloroethylene	ug/g	ND	ND	ND	ND	ND	0.050	3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3930	SK3930	SK3931	SK3932	SK3933		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-1**	**S-82415-072313-HS-1 Lab-Dup**	**S-82415-072313-HS-2**	**S-82415-072313-HS-3**	**S-82415-072313-HS-4**	**RDL**	**QC Batch**
Toluene	ug/g	ND	ND	ND	ND	ND	0.020	3294636
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Trichloroethylene	ug/g	ND	ND	ND	ND	ND	0.010	3294636
Vinyl Chloride	ug/g	ND	ND	ND	ND	ND	0.020	3294636
p+m-Xylene	ug/g	ND	ND	ND	ND	ND	0.020	3294636
o-Xylene	ug/g	ND	ND	ND	ND	ND	0.020	3294636
Xylene (Total)	ug/g	ND	ND	ND	ND	ND	0.020	3294636
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	ND	0.050	3294636
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	98	97	97	96	97		3294636
D10-o-Xylene	%	106	107	92	97	100		3294636
D4-1,2-Dichloroethane	%	98	102	102	100	102		3294636
D8-Toluene	%	98	97	97	97	97		3294636

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QC Batch = Quality Control Batch

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Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3934	SK3935	SK3936	SK3937		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/24		
	Units	**S-82415-072313-HS-5**	**S-82415-072313-HS-6**	**S-82415-072413-HS-7**	**S-82415-072413-HS-9**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Benzene	ug/g	ND	ND	ND	ND	0.0060	3294636
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
Bromoform	ug/g	ND	ND	ND	ND	0.050	3294636
Bromomethane	ug/g	ND	ND	ND	ND	0.050	3294636
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	3294636
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Chloroform	ug/g	ND	ND	ND	ND	0.050	3294636
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	3294636
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	3294636
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	3294636
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	3294636
Hexane	ug/g	ND	ND	ND	ND	0.050	3294636
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	3294636
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	3294636
Styrene	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
Toluene	ug/g	ND	ND	ND	ND	0.020	3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3934	SK3935	SK3936	SK3937		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/24		
	Units	**S-82415-072313-HS-5**	**S-82415-072313-HS-6**	**S-82415-072413-HS-7**	**S-82415-072413-HS-9**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	3294636
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	3294636
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
o-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
Xylene (Total)	ug/g	ND	ND	ND	ND	0.020	3294636
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	3294636
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	97	95	96	96		3294636
D10-o-Xylene	%	99	99	100	95		3294636
D4-1,2-Dichloroethane	%	101	103	102	103		3294636
D8-Toluene	%	97	95	97	97		3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3938	SK3939	SK3940	SK3941		
Sampling Date		2013/07/23	2013/07/24	2013/07/23	2013/07/24		
	Units	**S-82415-072313-HS-2-99**	**S-82415-072413-HS-10**	**S-82415-072313-HS-12**	**S-82415-072413-HS-13**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Benzene	ug/g	ND	ND	ND	ND	0.0060	3294636
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
Bromoform	ug/g	ND	ND	ND	ND	0.050	3294636
Bromomethane	ug/g	ND	ND	ND	ND	0.050	3294636
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	3294636
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Chloroform	ug/g	ND	ND	ND	ND	0.050	3294636
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	3294636
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	3294636
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	3294636
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	3294636
Hexane	ug/g	ND	ND	ND	ND	0.050	3294636
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	3294636
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	3294636
Styrene	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
Toluene	ug/g	ND	ND	ND	ND	0.020	3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3938	SK3939	SK3940	SK3941		
Sampling Date		2013/07/23	2013/07/24	2013/07/23	2013/07/24		
	Units	**S-82415-072313-HS-2-99**	**S-82415-072413-HS-10**	**S-82415-072313-HS-12**	**S-82415-072413-HS-13**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	3294636
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	3294636
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
o-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
Xylene (Total)	ug/g	ND	ND	ND	ND	0.020	3294636
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	3294636
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	97	97	95	98		3294636
D10-o-Xylene	%	92	99	100	103		3294636
D4-1,2-Dichloroethane	%	104	103	102	105		3294636
D8-Toluene	%	97	96	96	98		3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3942	SK3943	SK3944	SK3945		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-14**	**S-82415-072313-HS-15**	**S-82415-072313-HS-16**	**S-82415-072313-HS-17A**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Benzene	ug/g	ND	ND	ND	ND	0.0060	3294636
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
Bromoform	ug/g	ND	ND	ND	ND	0.050	3294636
Bromomethane	ug/g	ND	ND	ND	ND	0.050	3294636
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	3294636
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Chloroform	ug/g	ND	ND	ND	ND	0.050	3294636
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	3294636
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	3294636
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	3294636
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	3294636
Hexane	ug/g	ND	ND	ND	ND	0.050	3294636
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	3294636
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	3294636
Styrene	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
Toluene	ug/g	ND	ND	ND	ND	0.020	3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3942	SK3943	SK3944	SK3945		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-14**	**S-82415-072313-HS-15**	**S-82415-072313-HS-16**	**S-82415-072313-HS-17A**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	3294636
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	3294636
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
o-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
Xylene (Total)	ug/g	ND	ND	ND	ND	0.020	3294636
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	3294636
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	95	97	96	95		3294636
D10-o-Xylene	%	99	105	102	96		3294636
D4-1,2-Dichloroethane	%	104	99	105	103		3294636
D8-Toluene	%	95	99	96	96		3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3946	SK3947	SK3948	SK3949		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-18**	**S-82415-072313-HS-17B**	**S-82415-072313-HS-19**	**S-82415-072313-HS-20**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Benzene	ug/g	ND	ND	ND	ND	0.0060	3294636
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
Bromoform	ug/g	ND	ND	ND	ND	0.050	3294636
Bromomethane	ug/g	ND	ND	ND	ND	0.050	3294636
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	3294636
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Chloroform	ug/g	ND	ND	ND	ND	0.050	3294636
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294636
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	3294636
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	3294636
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	3294636
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	3294636
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	3294636
Hexane	ug/g	ND	ND	ND	ND	0.050	3294636
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	3294636
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	3294636
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	3294636
Styrene	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	3294636
Toluene	ug/g	ND	ND	ND	ND	0.020	3294636

ND = Not detected
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QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3946	SK3947	SK3948	SK3949		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-18**	**S-82415-072313-HS-17B**	**S-82415-072313-HS-19**	**S-82415-072313-HS-20**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294636
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	3294636
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	3294636
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
o-Xylene	ug/g	ND	ND	ND	ND	0.020	3294636
Xylene (Total)	ug/g	ND	ND	ND	ND	0.020	3294636
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	3294636
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	96	96	97	99		3294636
D10-o-Xylene	%	100	94	100	101		3294636
D4-1,2-Dichloroethane	%	101	103	103	103		3294636
D8-Toluene	%	97	96	97	98		3294636

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3950	SK3950	SK3951	SK3952		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-21**	**S-82415-072313-HS-21 Lab-Dup**	**S-82415-072313-HS-22**	**S-82415-072313-HS-23**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	3294639
Benzene	ug/g	ND	ND	ND	ND	0.0060	3294639
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	3294639
Bromoform	ug/g	ND	ND	ND	ND	0.050	3294639
Bromomethane	ug/g	ND	ND	ND	ND	0.050	3294639
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	3294639
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
Chloroform	ug/g	ND	ND	ND	ND	0.050	3294639
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	3294639
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	3294639
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	3294639
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	3294639
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	3294639
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	3294639
Hexane	ug/g	0.060	0.057	ND	ND	0.050	3294639
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	3294639
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	3294639
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	3294639
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	3294639
Styrene	ug/g	ND	ND	ND	ND	0.050	3294639
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639

ND = Not detected
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QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3950	SK3950	SK3951	SK3952		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-21**	**S-82415-072313-HS-21 Lab-Dup**	**S-82415-072313-HS-22**	**S-82415-072313-HS-23**	**RDL**	**QC Batch**
Toluene	ug/g	ND	ND	ND	ND	0.020	3294639
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	3294639
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	3294639
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	3294639
o-Xylene	ug/g	ND	ND	ND	ND	0.020	3294639
Xylene (Total)	ug/g	ND	ND	ND	ND	0.020	3294639
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	3294639
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	91	90	92	91		3294639
D10-o-Xylene	%	86	84	88	88		3294639
D4-1,2-Dichloroethane	%	117	116	117	117		3294639
D8-Toluene	%	97	96	96	97		3294639

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3953		SK3954	SK3955	SK3956		
Sampling Date		2013/07/23		2013/07/23	2013/07/23	2013/07/23		
	Units	S-82415-072313-HS-24-0.6	RDL	S-82415-072313-HS-24-1.6	S-82415-072313-HS-25	S-82415-072313-HS-26	RDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND	0.50	ND	ND	ND	0.50	3294639
Benzene	ug/g	ND	0.0060	ND	ND	ND	0.0060	3294639
Bromodichloromethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Bromoform	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Bromomethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Carbon Tetrachloride	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Chlorobenzene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Chloroform	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Dibromochloromethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,2-Dichlorobenzene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,3-Dichlorobenzene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,4-Dichlorobenzene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,1-Dichloroethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,2-Dichloroethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,1-Dichloroethylene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
cis-1,2-Dichloroethylene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
trans-1,2-Dichloroethylene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,2-Dichloropropane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
cis-1,3-Dichloropropene	ug/g	ND	0.030	ND	ND	ND	0.030	3294639
trans-1,3-Dichloropropene	ug/g	ND	0.040	ND	ND	ND	0.040	3294639
Ethylbenzene	ug/g	ND	0.010	ND	ND	ND	0.010	3294639
Ethylene Dibromide	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Hexane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Methyl Isobutyl Ketone	ug/g	ND	0.50	ND	ND	ND	0.50	3294639
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	ND	ND	ND	0.50	3294639
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Styrene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,1,2,2-Tetrachloroethane	ug/g	ND(1)	0.11	ND	ND	ND	0.050	3294639
Tetrachloroethylene	ug/g	ND	0.050	ND	ND	ND	0.050	3294639

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - VOC Analysis: Detection limit was raised due to matrix interferences.

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3953		SK3954	SK3955	SK3956		
Sampling Date		2013/07/23		2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-24-0.6**	**RDL**	**S-82415-072313-HS-24-1.6**	**S-82415-072313-HS-25**	**S-82415-072313-HS-26**	**RDL**	**QC Batch**
Toluene	ug/g	ND	0.020	ND	ND	ND	0.020	3294639
1,1,1-Trichloroethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
1,1,2-Trichloroethane	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Trichloroethylene	ug/g	ND	0.010	ND	ND	ND	0.010	3294639
Vinyl Chloride	ug/g	ND	0.020	ND	ND	ND	0.020	3294639
p+m-Xylene	ug/g	ND	0.020	ND	ND	ND	0.020	3294639
o-Xylene	ug/g	ND	0.020	ND	ND	ND	0.020	3294639
Xylene (Total)	ug/g	ND	0.020	ND	ND	ND	0.020	3294639
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	ND	ND	ND	0.050	3294639
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	89		98	94	90		3294639
D10-o-Xylene	%	87		95	91	90		3294639
D4-1,2-Dichloroethane	%	118		99	104	106		3294639
D8-Toluene	%	97		96	96	97		3294639

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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Your P.O. #: 20-016130-1
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VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3957	SK3958	SK3959	SK3960		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-27**	**S-82415-072313-HS-28**	**S-82415-072413-HS-29**	**S-82415-072313-HS-30**	**RDL**	**QC Batch**
Volatile Organics							
Acetone (2-Propanone)	ug/g	ND	ND	ND	ND	0.50	3294639
Benzene	ug/g	ND	ND	ND	ND	0.0060	3294639
Bromodichloromethane	ug/g	ND	ND	ND	ND	0.050	3294639
Bromoform	ug/g	ND	ND	ND	ND	0.050	3294639
Bromomethane	ug/g	ND	ND	ND	ND	0.050	3294639
Carbon Tetrachloride	ug/g	ND	ND	ND	ND	0.050	3294639
Chlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
Chloroform	ug/g	ND	ND	ND	ND	0.050	3294639
Dibromochloromethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,2-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
1,3-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
1,4-Dichlorobenzene	ug/g	ND	ND	ND	ND	0.050	3294639
Dichlorodifluoromethane (FREON 12)	ug/g	ND	ND	ND	ND	0.050	3294639
1,1-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,2-Dichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,1-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
cis-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
trans-1,2-Dichloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
1,2-Dichloropropane	ug/g	ND	ND	ND	ND	0.050	3294639
cis-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.030	3294639
trans-1,3-Dichloropropene	ug/g	ND	ND	ND	ND	0.040	3294639
Ethylbenzene	ug/g	ND	ND	ND	ND	0.010	3294639
Ethylene Dibromide	ug/g	ND	ND	ND	ND	0.050	3294639
Hexane	ug/g	ND	ND	ND	ND	0.050	3294639
Methylene Chloride(Dichloromethane)	ug/g	ND	ND	ND	ND	0.050	3294639
Methyl Isobutyl Ketone	ug/g	ND	ND	ND	ND	0.50	3294639
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	ND	ND	ND	0.50	3294639
Methyl t-butyl ether (MTBE)	ug/g	ND	ND	ND	ND	0.050	3294639
Styrene	ug/g	ND	ND	ND	ND	0.050	3294639
1,1,1,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,1,2,2-Tetrachloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
Tetrachloroethylene	ug/g	ND	ND	ND	ND	0.050	3294639
Toluene	ug/g	ND	ND	ND	ND	0.020	3294639

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3957	SK3958	SK3959	SK3960		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-27**	**S-82415-072313-HS-28**	**S-82415-072413-HS-29**	**S-82415-072313-HS-30**	**RDL**	**QC Batch**
1,1,1-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
1,1,2-Trichloroethane	ug/g	ND	ND	ND	ND	0.050	3294639
Trichloroethylene	ug/g	ND	ND	ND	ND	0.010	3294639
Vinyl Chloride	ug/g	ND	ND	ND	ND	0.020	3294639
p+m-Xylene	ug/g	ND	ND	ND	ND	0.020	3294639
o-Xylene	ug/g	ND	ND	ND	ND	0.020	3294639
Xylene (Total)	ug/g	ND	ND	ND	ND	0.020	3294639
Trichlorofluoromethane (FREON 11)	ug/g	ND	ND	ND	ND	0.050	3294639
Surrogate Recovery (%)							
4-Bromofluorobenzene	%	90	89	89	89		3294639
D10-o-Xylene	%	90	88	90	90		3294639
D4-1,2-Dichloroethane	%	108	108	109	112		3294639
D8-Toluene	%	98	97	98	97		3294639

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3961		SK3962		SK3963		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		
	Units	S-82415-072313-HS-31	RDL	S-82415-072413-HS-32	RDL	S-82415-072313-HS-LTU1	RDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND	0.50	ND	1.5	ND	0.50	3294639
Benzene	ug/g	ND	0.0060	ND	0.018	ND	0.0060	3294639
Bromodichloromethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Bromoform	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Bromomethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Carbon Tetrachloride	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Chlorobenzene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Chloroform	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Dibromochloromethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,2-Dichlorobenzene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,3-Dichlorobenzene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,4-Dichlorobenzene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,1-Dichloroethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,2-Dichloroethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,1-Dichloroethylene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
cis-1,2-Dichloroethylene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
trans-1,2-Dichloroethylene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,2-Dichloropropane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
cis-1,3-Dichloropropene	ug/g	ND	0.030	ND	0.090	ND	0.030	3294639
trans-1,3-Dichloropropene	ug/g	ND	0.040	ND	0.12	ND	0.040	3294639
Ethylbenzene	ug/g	ND	0.010	0.31	0.030	ND	0.010	3294639
Ethylene Dibromide	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Hexane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Methyl Isobutyl Ketone	ug/g	ND	0.50	ND	1.5	ND	0.50	3294639
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	ND	1.5	ND	0.50	3294639
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Styrene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,1,2,2-Tetrachloroethane	ug/g	ND	0.050	ND	0.15	ND(1)	0.060	3294639
Tetrachloroethylene	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639

ND = Not detected
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QC Batch = Quality Control Batch
(1) - VOC Analysis: Detection limit was raised due to matrix interferences.

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3961		SK3962		SK3963		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		
	Units	**S-82415-072313-HS-31**	**RDL**	**S-82415-072413-HS-32**	**RDL**	**S-82415-072313-HS-LTU1**	**RDL**	**QC Batch**
Toluene	ug/g	ND	0.020	0.22	0.060	ND	0.020	3294639
1,1,1-Trichloroethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
1,1,2-Trichloroethane	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Trichloroethylene	ug/g	ND	0.010	ND	0.030	ND	0.010	3294639
Vinyl Chloride	ug/g	ND	0.020	ND	0.060	ND	0.020	3294639
p+m-Xylene	ug/g	ND	0.020	2.3	0.060	ND	0.020	3294639
o-Xylene	ug/g	ND	0.020	1.2	0.060	ND	0.020	3294639
Xylene (Total)	ug/g	ND	0.020	3.5	0.060	ND	0.020	3294639
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	ND	0.15	ND	0.050	3294639
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	89		91		92		3294639
D10-o-Xylene	%	87		101		89		3294639
D4-1,2-Dichloroethane	%	114		114		114		3294639
D8-Toluene	%	98		98		97		3294639

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Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3964		SK3965		SK3966		
Sampling Date		2013/07/23		2013/07/23		2013/07/23		
	Units	S-82415-072313-HS-LTU2	RDL	S-82415-072313-HS-LTU299	RDL	S-82415-072313-HS-ASP	RDL	QC Batch
Volatile Organics								
Acetone (2-Propanone)	ug/g	ND	0.50	ND	0.50	ND	7.5	3294639
Benzene	ug/g	ND	0.0060	ND	0.0060	1.8	0.090	3294639
Bromodichloromethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Bromoform	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Bromomethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Carbon Tetrachloride	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Chlorobenzene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Chloroform	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Dibromochloromethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,2-Dichlorobenzene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,3-Dichlorobenzene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,4-Dichlorobenzene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Dichlorodifluoromethane (FREON 12)	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,1-Dichloroethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,2-Dichloroethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,1-Dichloroethylene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
cis-1,2-Dichloroethylene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
trans-1,2-Dichloroethylene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,2-Dichloropropane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
cis-1,3-Dichloropropene	ug/g	ND	0.030	ND	0.030	ND	0.45	3294639
trans-1,3-Dichloropropene	ug/g	ND	0.040	ND	0.040	ND	0.60	3294639
Ethylbenzene	ug/g	ND	0.010	ND	0.010	69	0.15	3294639
Ethylene Dibromide	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Hexane	ug/g	ND	0.050	ND	0.050	19	0.75	3294639
Methylene Chloride(Dichloromethane)	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Methyl Isobutyl Ketone	ug/g	ND	0.50	ND	0.50	ND	7.5	3294639
Methyl Ethyl Ketone (2-Butanone)	ug/g	ND	0.50	ND	0.50	ND	7.5	3294639
Methyl t-butyl ether (MTBE)	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Styrene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,1,1,2-Tetrachloroethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,1,2,2-Tetrachloroethane	ug/g	ND(1)	0.35	ND(1)	0.23	ND	0.75	3294639
Tetrachloroethylene	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - VOC Analysis: Detection limit was raised due to matrix interferences.

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Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

VOLATILE ORGANICS BY GC/MS (SOIL)

Maxxam ID		SK3964		SK3965		SK3966		
Sampling Date		2013/07/23		2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-LTU2**	**RDL**	**S-82415-072313-HS-LTU299**	**RDL**	**S-82415-072313-HS-ASP**	**RDL**	**QC Batch**
Toluene	ug/g	ND	0.020	ND	0.020	25	0.30	3294639
1,1,1-Trichloroethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
1,1,2-Trichloroethane	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Trichloroethylene	ug/g	ND	0.010	ND	0.010	ND	0.15	3294639
Vinyl Chloride	ug/g	ND	0.020	ND	0.020	ND	0.30	3294639
p+m-Xylene	ug/g	ND	0.020	ND	0.020	380	0.30	3294639
o-Xylene	ug/g	ND	0.020	ND	0.020	130	0.30	3294639
Xylene (Total)	ug/g	ND	0.020	ND	0.020	520	0.30	3294639
Trichlorofluoromethane (FREON 11)	ug/g	ND	0.050	ND	0.050	ND	0.75	3294639
Surrogate Recovery (%)								
4-Bromofluorobenzene	%	97		99		98		3294639
D10-o-Xylene	%	93		104		91		3294639
D4-1,2-Dichloroethane	%	109		96		94		3294639
D8-Toluene	%	95		101		101		3294639

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3930	SK3931	SK3932	SK3932	SK3933		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-1**	**S-82415-072313-HS-2**	**S-82415-072313-HS-3**	**S-82415-072313-HS-3 Lab-Dup**	**S-82415-072313-HS-4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/g	ND	ND	ND	ND	ND	10	3295233
F1 (C6-C10) - BTEX	ug/g	ND	ND	ND	ND	ND	10	3295233
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	107	103	104	104	103		3295233
4-Bromofluorobenzene	%	100	97	96	97	96		3295233
D10-Ethylbenzene	%	94	86	87	85	87		3295233
D4-1,2-Dichloroethane	%	104	103	102	102	103		3295233

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QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3934	SK3935	SK3936	SK3937	SK3938		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-5**	**S-82415-072313-HS-6**	**S-82415-072413-HS-7**	**S-82415-072413-HS-9**	**S-82415-072313-HS-2-99**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/g	ND	ND	ND	ND	ND	10	3295233
F1 (C6-C10) - BTEX	ug/g	ND	ND	ND	ND	ND	10	3295233
F2-F4 Hydrocarbons								
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g			610			100	3297720
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	103	104	105	103	105		3295233
4-Bromofluorobenzene	%	99	97	97	96	97		3295233
D10-Ethylbenzene	%	88	90	86	86	85		3295233
D4-1,2-Dichloroethane	%	103	104	103	100	103		3295233

Maxxam ID		SK3939	SK3940	SK3941	SK3942		
Sampling Date		2013/07/24	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072413-HS-10**	**S-82415-072313-HS-12**	**S-82415-072413-HS-13**	**S-82415-072313-HS-14**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/g	ND	ND	ND	ND	10	3295233
F1 (C6-C10) - BTEX	ug/g	ND	ND	ND	ND	10	3295233
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g			2800		100	3297720
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	104	103	106		3295233
4-Bromofluorobenzene	%	97	98	96	100		3295233
D10-Ethylbenzene	%	88	85	85	91		3295233
D4-1,2-Dichloroethane	%	100	102	102	104		3295233

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3943	SK3944	SK3945	SK3946		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-15**	**S-82415-072313-HS-16**	**S-82415-072313-HS-17A**	**S-82415-072313-HS-18**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/g	ND	ND	ND	ND	10	3295233
F1 (C6-C10) - BTEX	ug/g	ND	ND	ND	ND	10	3295233
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102	105	104	105		3295233
4-Bromofluorobenzene	%	95	99	97	98		3295233
D10-Ethylbenzene	%	85	90	88	86		3295233
D4-1,2-Dichloroethane	%	101	104	102	104		3295233

Maxxam ID		SK3947	SK3948	SK3949		SK3950		
Sampling Date		2013/07/23	2013/07/23	2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-17B**	**S-82415-072313-HS-19**	**S-82415-072313-HS-20**	**QC Batch**	**S-82415-072313-HS-21**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/g	ND	ND	10	3295233	ND	10	3295234
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	3295233	ND	10	3295234
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	104	105	106	3295233	100		3295234
4-Bromofluorobenzene	%	99	98	97	3295233	103		3295234
D10-Ethylbenzene	%	88	87	88	3295233	89		3295234
D4-1,2-Dichloroethane	%	103	103	103	3295233	96		3295234

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3950	SK3951	SK3952		
Sampling Date		2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-21 Lab-Dup**	**S-82415-072313-HS-22**	**S-82415-072313-HS-23**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
F1 (C6-C10)	ug/g	ND	ND	ND	10	3295234
F1 (C6-C10) - BTEX	ug/g	ND	ND	ND	10	3295234
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	100	100		3295234
4-Bromofluorobenzene	%	104	102	101		3295234
D10-Ethylbenzene	%	91	91	87		3295234
D4-1,2-Dichloroethane	%	96	97	97		3295234

Maxxam ID		SK3953		SK3954	SK3955	SK3956		
Sampling Date		2013/07/23		2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-24-0.6**	**RDL**	**S-82415-072313-HS-24-1.6**	**S-82415-072313-HS-25**	**S-82415-072313-HS-26**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/g	ND	50	ND	ND	ND	10	3295234
F1 (C6-C10) - BTEX	ug/g	ND	50	ND	ND	ND	10	3295234
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	99		102	103	102		3295234
4-Bromofluorobenzene	%	102		106	105	104		3295234
D10-Ethylbenzene	%	82		91	90	88		3295234
D4-1,2-Dichloroethane	%	97		100	99	99		3295234

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QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3957	SK3958	SK3959	SK3960		
Sampling Date		2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-27**	**S-82415-072313-HS-28**	**S-82415-072413-HS-29**	**S-82415-072313-HS-30**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/g	ND	ND	ND	ND	10	3295234
F1 (C6-C10) - BTEX	ug/g	ND	ND	ND	ND	10	3295234
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g			400		100	3297720
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102	102	101	100		3295234
4-Bromofluorobenzene	%	104	105	101	102		3295234
D10-Ethylbenzene	%	90	88	89	90		3295234
D4-1,2-Dichloroethane	%	102	100	98	98		3295234

Maxxam ID		SK3961		SK3962		SK3963		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		
	Units	**S-82415-072313-HS-31**	**RDL**	**S-82415-072413-HS-32**	**RDL**	**S-82415-072313-HS-LTU1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
F1 (C6-C10)	ug/g	ND	10	ND	30	17	10	3295234
F1 (C6-C10) - BTEX	ug/g	ND	10	ND	30	17	10	3295234
F2-F4 Hydrocarbons								
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g		100	2700	100			3297720
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	102		99		99		3295234
4-Bromofluorobenzene	%	102		103		106		3295234
D10-Ethylbenzene	%	87		95		88		3295234
D4-1,2-Dichloroethane	%	99		97		98		3295234

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

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Sampler Initials: HS

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		SK3964	SK3965		SK3966		
Sampling Date		2013/07/23	2013/07/23		2013/07/23		
	Units	S-82415-072313-HS-LTU2	S-82415-072313-HS-LTU299	RDL	S-82415-072313-HS-ASP	RDL	QC Batch
BTEX & F1 Hydrocarbons							
F1 (C6-C10)	ug/g	ND	59	50	8200	500	3295234
F1 (C6-C10) - BTEX	ug/g	ND	59	50	7800	500	3295234
F2-F4 Hydrocarbons							
F4G-sg (Grav. Heavy Hydrocarbons)	ug/g				500000	100	3297720
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	99	99		99		3295234
4-Bromofluorobenzene	%	105	105		109		3295234
D10-Ethylbenzene	%	83	87		85		3295234
D4-1,2-Dichloroethane	%	95	94		95		3295234

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		SK3930		SK3931	SK3932	SK3933	SK3934		
Sampling Date		2013/07/23		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	S-82415-072313-HS-1	RDL	S-82415-072313-HS-2	S-82415-072313-HS-3	S-82415-072313-HS-4	S-82415-072313-HS-5	RDL	QC Batch
PCBs									
Total PCB	ug/g	ND	0.020	ND	ND	ND	ND	0.010	3295205
Surrogate Recovery (%)									
Decachlorobiphenyl	%	70		86	78	80	76		3295205

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Conestoga-Rovers and Associates Ltd
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Sampler Initials: HS

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		SK3935	SK3936	SK3937	SK3938	SK3939		
Sampling Date		2013/07/23	2013/07/24	2013/07/24	2013/07/23	2013/07/24		
	Units	**S-82415-072313-HS-6**	**S-82415-072413-HS-7**	**S-82415-072413-HS-9**	**S-82415-072313-HS-2-99**	**S-82415-072413-HS-10**	**RDL**	**QC Batch**
PCBs								
Total PCB	ug/g	ND	ND	ND	ND	ND	0.010	3295205
Surrogate Recovery (%)								
Decachlorobiphenyl	%	84	61	71	76	85		3295205

Maxxam ID		SK3939	SK3940	SK3941	SK3942	SK3943		
Sampling Date		2013/07/24	2013/07/23	2013/07/24	2013/07/23	2013/07/23		
	Units	**S-82415-072413-HS-10 Lab-Dup**	**S-82415-072313-HS-12**	**S-82415-072413-HS-13**	**S-82415-072313-HS-14**	**S-82415-072313-HS-15**	**RDL**	**QC Batch**
PCBs								
Total PCB	ug/g	ND	ND	0.015	ND	ND	0.010	3295205
Surrogate Recovery (%)								
Decachlorobiphenyl	%	84	78	63	64	66		3295205

Maxxam ID		SK3944	SK3945	SK3946	SK3947	SK3948		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-16**	**S-82415-072313-HS-17A**	**S-82415-072313-HS-18**	**S-82415-072313-HS-17B**	**S-82415-072313-HS-19**	**RDL**	**QC Batch**
PCBs								
Total PCB	ug/g	ND	ND	ND	ND	ND	0.010	3295205
Surrogate Recovery (%)								
Decachlorobiphenyl	%	73	74	77	72	80		3295205

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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Conestoga-Rovers and Associates Ltd
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POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		SK3949	SK3949		SK3950		SK3951		
Sampling Date		2013/07/23	2013/07/23		2013/07/23		2013/07/23		
	Units	**S-82415-072313-HS-20**	**S-82415-072313-HS-20 Lab-Dup**	**QC Batch**	**S-82415-072313-HS-21**	**QC Batch**	**S-82415-072313-HS-22**	**RDL**	**QC Batch**
PCBs									
Total PCB	ug/g	ND	ND	3295206	0.016	3295205	ND	0.010	3295206
Surrogate Recovery (%)									
Decachlorobiphenyl	%	96	96	3295206	72	3295205	82		3295206

Maxxam ID		SK3952	SK3953	SK3954	SK3955		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/23		
	Units	**S-82415-072313-HS-23**	**S-82415-072313-HS-24-0.6**	**S-82415-072313-HS-24-1.6**	**S-82415-072313-HS-25**	**RDL**	**QC Batch**
PCBs							
Total PCB	ug/g	ND	ND	ND	ND	0.010	3295206
Surrogate Recovery (%)							
Decachlorobiphenyl	%	92	74	73	74		3295206

Maxxam ID		SK3956	SK3957	SK3958	SK3959	SK3960		
Sampling Date		2013/07/23	2013/07/23	2013/07/23	2013/07/24	2013/07/23		
	Units	**S-82415-072313-HS-26**	**S-82415-072313-HS-27**	**S-82415-072313-HS-28**	**S-82415-072413-HS-29**	**S-82415-072313-HS-30**	**RDL**	**QC Batch**
PCBs								
Total PCB	ug/g	ND	ND	ND	ND	ND	0.010	3295206
Surrogate Recovery (%)								
Decachlorobiphenyl	%	83	80	82	78	79		3295206

ND = Not detected
RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B3C1829
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Conestoga-Rovers and Associates Ltd
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Sampler Initials: HS

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		SK3961		SK3962		SK3963		
Sampling Date		2013/07/23		2013/07/24		2013/07/23		
	Units	S-82415-072313-HS-31	RDL	S-82415-072413-HS-32	RDL	S-82415-072313-HS-LTU1	RDL	QC Batch
PCBs								
Total PCB	ug/g	ND	0.010	ND	0.030	ND	0.010	3295206
Surrogate Recovery (%)								
Decachlorobiphenyl	%	84		85		71		3295206

Maxxam ID		SK3964	SK3965			SK3966		
Sampling Date		2013/07/23	2013/07/23			2013/07/23		
	Units	S-82415-072313-HS-LTU2	S-82415-072313-HS-LTU299	RDL	QC Batch	S-82415-072313-HS-ASP	RDL	QC Batch
PCBs								
Aroclor 1262	ug/g					ND	1	3296626
Aroclor 1016	ug/g					ND	1	3296626
Aroclor 1221	ug/g					ND	1	3296626
Aroclor 1232	ug/g					ND	1	3296626
Aroclor 1242	ug/g					ND	1	3296626
Aroclor 1248	ug/g					ND	1	3296626
Aroclor 1254	ug/g					ND	1	3296626
Aroclor 1260	ug/g					ND	1	3296626
Aroclor 1268	ug/g					ND	1	3296626
Total PCB	ug/g	0.046	0.044	0.010	3295206	ND	1	3296626
Surrogate Recovery (%)								
Decachlorobiphenyl	%	80	76		3295206	77		3296626

MISCELLANEOUS (SOIL)

Maxxam ID		SK3966	SK3966		
Sampling Date		2013/07/23	2013/07/23		
	Units	S-82415-072313-HS-ASP	S-82415-072313-HS-ASP Lab-Dup	RDL	QC Batch
Inorganics					
Ignitability	N/A	NF/NI	NF/NI		3296347

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

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3930 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-1 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/26	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/27	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/29	Ron Corkum

Maxxam ID SK3930 Dup **Collected** 2013/07/23
Sample ID S-82415-072313-HS-1 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3931 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-2 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai

Maxxam Job #: B3C1829
Report Date: 2013/08/07

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Test Summary

Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/26	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3931 Dup
Sample ID S-82415-072313-HS-2
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel

Maxxam ID SK3932
Sample ID S-82415-072313-HS-3
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Client Project #: 82415-20

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Test Summary

Maxxam ID SK3932 Dup
Sample ID S-82415-072313-HS-3
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri

Maxxam ID SK3933
Sample ID S-82415-072313-HS-4
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Sampler Initials: HS

Test Summary

Maxxam ID SK3934
Sample ID S-82415-072313-HS-5
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3935
Sample ID S-82415-072313-HS-6
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Client Project #: 82415-20

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Sampler Initials: HS

Test Summary

Maxxam ID SK3936
Sample ID S-82415-072413-HS-7
Matrix Soil

Collected 2013/07/24
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
F4G (CCME Hydrocarbons Gravimetric)	BAL	3297720	2013/07/30	2013/07/30	Raheela Usmani
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3937
Sample ID S-82415-072413-HS-9
Matrix Soil

Collected 2013/07/24
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3938 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-2-99 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3938 Dup **Collected** 2013/07/23
Sample ID S-82415-072313-HS-2-99 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh

Maxxam ID SK3939 **Collected** 2013/07/24
Sample ID S-82415-072413-HS-10 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3939 Dup
Sample ID S-82415-072413-HS-10
Matrix Soil

Collected 2013/07/24
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng

Maxxam ID SK3940
Sample ID S-82415-072313-HS-12
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3941
Sample ID S-82415-072413-HS-13
Matrix Soil

Collected 2013/07/24
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
F4G (CCME Hydrocarbons Gravimetric)	BAL	3297720	2013/07/30	2013/07/30	Raheela Usmani
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/27	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3942
Sample ID S-82415-072313-HS-14
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Report Date: 2013/08/07

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Client Project #: 82415-20

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Sampler Initials: HS

Test Summary

Maxxam ID SK3943
Sample ID S-82415-072313-HS-15
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3944
Sample ID S-82415-072313-HS-16
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
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Test Summary

Maxxam ID SK3945 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-17A **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3945 Dup **Collected** 2013/07/23
Sample ID S-82415-072313-HS-17A **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3946 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-18 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3947 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-17B **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3948 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-19 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3948 Dup **Collected** 2013/07/23
Sample ID S-82415-072313-HS-19 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha

Maxxam ID SK3949 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-20 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295233	2013/07/26	2013/07/27	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3294661	2013/07/26	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai

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Test Summary

Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/26	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294636	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3949 Dup
Sample ID S-82415-072313-HS-20
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/26	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/27	2013/07/29	Li Peng

Maxxam ID SK3950
Sample ID S-82415-072313-HS-21
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3294732	2013/07/26	2013/07/27	Darryl Tiller
Polychlorinated Biphenyl in Soil	GC/ECD	3295205	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

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Sampler Initials: HS

Test Summary

Maxxam ID SK3950 Dup
Sample ID S-82415-072313-HS-21
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3951
Sample ID S-82415-072313-HS-22
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3952 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-23 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3953 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-24-0.6 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

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Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3953 Dup
Sample ID S-82415-072313-HS-24-0.6
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai

Maxxam ID SK3954
Sample ID S-82415-072313-HS-24-1.6
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/29	Ron Corkum

Maxxam ID SK3955
Sample ID S-82415-072313-HS-25
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3956 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-26 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3957 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-27 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3958 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-28 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3959 **Collected** 2013/07/24
Sample ID S-82415-072413-HS-29 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
F4G (CCME Hydrocarbons Gravimetric)	BAL	3297720	2013/07/30	2013/07/30	Raheela Usmani

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

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Sampler Initials: HS

Test Summary

Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3960
Sample ID S-82415-072313-HS-30
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3961
Sample ID S-82415-072313-HS-31
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3961 Dup
Sample ID S-82415-072313-HS-31
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli

Maxxam ID SK3962
Sample ID S-82415-072413-HS-32
Matrix Soil

Collected 2013/07/24
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
F4G (CCME Hydrocarbons Gravimetric)	BAL	3297720	2013/07/30	2013/07/30	Raheela Usmani
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3963 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-LTU1 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295304	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3295272	2013/07/27	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295273	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3964 **Collected** 2013/07/23
Sample ID S-82415-072313-HS-LTU2 **Shipped**
Matrix Soil **Received** 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3294623	N/A	2013/07/29	Louise Harding
Hexavalent Chromium in Soil by IC	IC/SPEC	3294631	2013/07/26	2013/07/26	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294986	N/A	2013/07/26	Chamika Deeyagaha
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295796	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

Maxxam ID SK3965
Sample ID S-82415-072313-HS-LTU299
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Hot Water Extractable Boron	ICP	3295510	2013/07/27	2013/07/27	Azita Fazaeli
Free (WAD) Cyanide	TECH	3295393	N/A	2013/07/29	Xuanhong Qiu
Hexavalent Chromium in Soil by IC	IC/SPEC	3294738	2013/07/26	2013/07/29	Yogesh Patel
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/26	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
Total Metals Analysis by ICP	ICP	3296030	2013/07/29	2013/07/29	Suban Kanapathippllai
Acid Extr. Metals (aqua regia) by ICPMS	ICP/MS	3295302	2013/07/27	2013/07/27	Viviana Canzonieri
Moisture	BAL	3294965	N/A	2013/07/26	Thoai Truyen Huynh
PAH Compounds in Soil by GC/MS (SIM)	GC/MS	3295243	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Soil	GC/ECD	3295206	2013/07/26	2013/07/29	Li Peng
pH CaCl2 EXTRACT		3295794	2013/07/29	2013/07/29	Surinder Rai
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/27	Ron Corkum

Maxxam ID SK3966
Sample ID S-82415-072313-HS-ASP
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Semivolatile Organic Compounds (TCLP)	GC/MS	3296624	2013/07/29	2013/07/30	Wendy Zhao
Petroleum Hydro. CCME F1 & BTEX in Soil	HSGC/MSFD	3295234	2013/07/27	2013/07/27	Sung Ho Kim
Petroleum Hydrocarbons F2-F4 in Soil	GC/FID	3295281	2013/07/27	2013/07/29	Biljana Lazovic
F4G (CCME Hydrocarbons Gravimetric)	BAL	3297720	2013/07/30	2013/07/30	Raheela Usmani
Mercury (TCLP Leachable) (mg/L)	CVAA	3295817	N/A	2013/07/29	Magdalena Carlos
Total Metals in TCLP Leachate by ICPMS	ICP1/MS	3295902	2013/07/29	2013/07/29	Arefa Dabhad
Ignitability of a Sample	BAL	3296347	2013/07/29	2013/07/29	Min Yang
PAH Compounds by GC/MS (SIM)	GC/MS	3295316	2013/07/27	2013/07/27	Lingyun Feng
Polychlorinated Biphenyl in Solids	GC/ECD	3296626	2013/07/29	2013/07/30	Sarah Huang
TCLP - % Solids	BAL	3294794	2013/07/26	2013/07/27	Jian (Ken) Wang
TCLP - Extraction Fluid		3294796	N/A	2013/07/27	Jian (Ken) Wang
TCLP - Initial and final pH	PH	3294797	N/A	2013/07/27	Jian (Ken) Wang
TCLP Zero Headspace Extraction		3293875	2013/07/26	2013/07/26	Walt Wang
Volatile Organic Compounds in Soil	GC/MS	3294639	2013/07/26	2013/07/29	Ron Corkum

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

Test Summary

VOCs in ZHE Leachates	GC/MS	3295867	2013/07/29	2013/07/29	Jagruti Tailor

Maxxam ID SK3966 Dup
Sample ID S-82415-072313-HS-ASP
Matrix Soil

Collected 2013/07/23
Shipped
Received 2013/07/26

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Ignitability of a Sample	BAL	3296347	2013/07/29	2013/07/29	Min Yang
PAH Compounds by GC/MS (SIM)	GC/MS	3295316	2013/07/27	2013/07/27	Lingyun Feng

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
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Sampler Initials: HS

Package 1	9.0°C
Package 2	9.3°C
Package 3	7.3°C
Package 4	7.0°C

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

GENERAL COMMENTS

F1-BTEX Analysis: The BTEX results used for the F1-BTEX calculation were obtained from Headspace-GC analysis.

Revised Report (2013/08/07): Sampling date has been changed as per client request.

Sample SK3930-01: PCB Analysis: Detection limits were adjusted for high moisture content.
Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3932-01: PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3936-01: PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3941-01: PAH analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3953-01: F1-BTEX Analysis: Due to high amount of late eluting hydrocarbons, sample required dilution. Reporting limits were adjusted accordingly.
PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3962-01: VOC Analysis: Detection limits were raised due to high moisture content.

F2-F4 Analysis & F1-BTEX Analysis:Detection limits were adjusted for high moisture content and sample weight.

PCB Analysis: Detection limits were adjusted for high moisture content.

PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly. Detection limits were also adjusted for hight moisture content.

Sample SK3964-01: F1-BTEX Analysis: Due to high amount of late eluting hydrocarbons, sample required dilution. Reporting limits were adjusted accordingly.

PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3965-01: F1-BTEX Analysis: Due to high amount of late eluting hydrocarbons, sample required dilution. Reporting limits were adjusted accordingly.

PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample SK3966-01: Due to the nature of the sample (TAR), a smaller amount was used for the analysis.

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NF/NI = Non Flammable and Non Ignitable
Sample produced sparking during the ignite test.

F2-F4 Analysis & F1-BTEX Analysis:Due to limited amount of sample available, moisture content was not available. Results were calculated on wet weight basis. Detection limits were adjusted sample weight.

VOC Analysis: A portion of sample was added to methanol and the extract analysed by head & space gas chromatography/mass spectrometry using US EPA Method 8260C (modified). The DLs were adjusted accordingly. No moisture correction was applied.

ABNMS-LC ANALYSIS: Due to the nature of the sample, a smaller amount was used for the analysis. Detection limits were adjusted accordingly.

PCB Analysis: Results were not moisture corrected
PAH Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly. Results were not moisture corrected

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3294623	Free Cyanide	2013/07/29	97(1)	75 - 125	90	80 - 120	ND, RDL=0.01	ug/g	NC(2)	35		
3294631	Chromium (VI)	2013/07/26	108(1)	75 - 125	110	80 - 120	ND, RDL=0.2	ug/g	NC(2)	35	116	75 - 125
3294636	4-Bromofluorobenzene	2013/07/27	101	60 - 140	103	60 - 140	99	%				
3294636	D10-o-Xylene	2013/07/27	110	60 - 130	107	60 - 130	99	%				
3294636	D4-1,2-Dichloroethane	2013/07/27	100	60 - 140	104	60 - 140	106	%				
3294636	D8-Toluene	2013/07/27	102	60 - 140	102	60 - 140	95	%				
3294636	Acetone (2-Propanone)	2013/07/27	103(3)	60 - 140	107	60 - 140	ND, RDL=0.50	ug/g	NC(4)	50		
3294636	Benzene	2013/07/27	96(3)	60 - 140	96	60 - 130	ND, RDL=0.0060	ug/g	NC(4)	50		
3294636	Bromodichloromethane	2013/07/27	96(3)	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Bromoform	2013/07/27	94(3)	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Bromomethane	2013/07/27	95(3)	60 - 140	96	60 - 140	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Carbon Tetrachloride	2013/07/27	104(3)	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Chlorobenzene	2013/07/27	97(3)	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Chloroform	2013/07/27	96(3)	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Dibromochloromethane	2013/07/27	95(3)	60 - 140	97	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,2-Dichlorobenzene	2013/07/27	93(3)	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,3-Dichlorobenzene	2013/07/27	92(3)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,4-Dichlorobenzene	2013/07/27	92(3)	60 - 140	90	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Dichlorodifluoromethane (FREON 12)	2013/07/27	82(3)	60 - 140	81	60 - 140	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,1-Dichloroethane	2013/07/27	104(3)	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,2-Dichloroethane	2013/07/27	99(3)	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,1-Dichloroethylene	2013/07/27	104(3)	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	cis-1,2-Dichloroethylene	2013/07/27	96(3)	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	trans-1,2-Dichloroethylene	2013/07/27	95(3)	60 - 140	94	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,2-Dichloropropane	2013/07/27	101(3)	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	cis-1,3-Dichloropropene	2013/07/27	85(3)	60 - 140	88	60 - 130	ND, RDL=0.030	ug/g	NC(4)	50		
3294636	trans-1,3-Dichloropropene	2013/07/27	88(3)	60 - 140	91	60 - 130	ND, RDL=0.040	ug/g	NC(4)	50		
3294636	Ethylbenzene	2013/07/27	95(3)	60 - 140	92	60 - 130	ND, RDL=0.010	ug/g	NC(4)	50		
3294636	Ethylene Dibromide	2013/07/27	97(3)	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Hexane	2013/07/27	110(3)	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Methylene Chloride(Dichloromethane)	2013/07/27	107(3)	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Methyl Isobutyl Ketone	2013/07/27	92(3)	60 - 140	101	60 - 130	ND, RDL=0.50	ug/g	NC(4)	50		
3294636	Methyl Ethyl Ketone (2-Butanone)	2013/07/27	94(3)	60 - 140	101	60 - 140	ND, RDL=0.50	ug/g	NC(4)	50		
3294636	Methyl t-butyl ether (MTBE)	2013/07/27	98(3)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Styrene	2013/07/27	97(3)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,1,1,2-Tetrachloroethane	2013/07/27	97(3)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,1,2,2-Tetrachloroethane	2013/07/27	94(3)	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Tetrachloroethylene	2013/07/27	101(3)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Toluene	2013/07/27	95(3)	60 - 140	93	60 - 130	ND, RDL=0.020	ug/g	NC(4)	50		

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QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3294636	1,1,1-Trichloroethane	2013/07/27	100(3)	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	1,1,2-Trichloroethane	2013/07/27	96(3)	60 - 140	98	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Trichloroethylene	2013/07/27	98(3)	60 - 140	97	60 - 130	ND, RDL=0.010	ug/g	NC(4)	50		
3294636	Vinyl Chloride	2013/07/27	91(3)	60 - 140	90	60 - 130	ND, RDL=0.020	ug/g	NC(4)	50		
3294636	p+m-Xylene	2013/07/27	91(3)	60 - 140	88	60 - 130	ND, RDL=0.020	ug/g	NC(4)	50		
3294636	o-Xylene	2013/07/27	91(3)	60 - 140	90	60 - 130	ND, RDL=0.020	ug/g	NC(4)	50		
3294636	Trichlorofluoromethane (FREON 11)	2013/07/27	98(3)	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC(4)	50		
3294636	Xylene (Total)	2013/07/27					ND, RDL=0.020	ug/g	NC(4)	50		
3294639	4-Bromofluorobenzene	2013/07/26	93	60 - 140	95	60 - 140	92	%				
3294639	D10-o-Xylene	2013/07/26	90	60 - 130	95	60 - 130	89	%				
3294639	D4-1,2-Dichloroethane	2013/07/26	113	60 - 140	122	60 - 140	122	%				
3294639	D8-Toluene	2013/07/26	105	60 - 140	107	60 - 140	96	%				
3294639	Acetone (2-Propanone)	2013/07/27	90(5)	60 - 140	127	60 - 140	ND, RDL=0.50	ug/g	NC(6)	50		
3294639	Benzene	2013/07/27	106(5)	60 - 140	101	60 - 130	ND, RDL=0.0060	ug/g	NC(6)	50		
3294639	Bromodichloromethane	2013/07/27	107(5)	60 - 140	112	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Bromoform	2013/07/27	91(5)	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Bromomethane	2013/07/27	115(5)	60 - 140	106	60 - 140	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Carbon Tetrachloride	2013/07/27	116(5)	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Chlorobenzene	2013/07/27	94(5)	60 - 140	95	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Chloroform	2013/07/27	110(5)	60 - 140	108	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Dibromochloromethane	2013/07/27	99(5)	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,2-Dichlorobenzene	2013/07/27	93(5)	60 - 140	96	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,3-Dichlorobenzene	2013/07/27	93(5)	60 - 140	91	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,4-Dichlorobenzene	2013/07/27	89(5)	60 - 140	89	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Dichlorodifluoromethane (FREON 12)	2013/07/27	113(5)	60 - 140	95	60 - 140	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,1-Dichloroethane	2013/07/27	126(5)	60 - 140	119	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,2-Dichloroethane	2013/07/27	109(5)	60 - 140	113	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,1-Dichloroethylene	2013/07/27	121(5)	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	cis-1,2-Dichloroethylene	2013/07/27	100(5)	60 - 140	99	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	trans-1,2-Dichloroethylene	2013/07/27	109(5)	60 - 140	100	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,2-Dichloropropane	2013/07/27	111(5)	60 - 140	112	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	cis-1,3-Dichloropropene	2013/07/27	86(5)	60 - 140	90	60 - 130	ND, RDL=0.030	ug/g	NC(6)	50		
3294639	trans-1,3-Dichloropropene	2013/07/27	91(5)	60 - 140	100	60 - 130	ND, RDL=0.040	ug/g	NC(6)	50		
3294639	Ethylbenzene	2013/07/27	88(5)	60 - 140	88	60 - 130	ND, RDL=0.010	ug/g	NC(6)	50		
3294639	Ethylene Dibromide	2013/07/27	97(5)	60 - 140	107	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Hexane	2013/07/27	113(5)	60 - 140	104	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Methylene Chloride(Dichloromethane)	2013/07/27	122(5)	60 - 140	116	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Methyl Isobutyl Ketone	2013/07/27	77(5)	60 - 140	107	60 - 130	ND, RDL=0.50	ug/g	NC(6)	50		
3294639	Methyl Ethyl Ketone (2-Butanone)	2013/07/27	74(5)	60 - 140	109	60 - 140	ND, RDL=0.50	ug/g	NC(6)	50		

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			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3294639	Methyl t-butyl ether (MTBE)	2013/07/27	95(5)	60 - 140	92	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Styrene	2013/07/27	87(5)	60 - 140	93	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,1,1,2-Tetrachloroethane	2013/07/27	107(5)	60 - 140	111	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,1,2,2-Tetrachloroethane	2013/07/27	101(5)	60 - 140	120	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Tetrachloroethylene	2013/07/27	108(5)	60 - 140	102	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Toluene	2013/07/27	97(5)	60 - 140	96	60 - 130	ND, RDL=0.020	ug/g	NC(6)	50		
3294639	1,1,1-Trichloroethane	2013/07/27	121(5)	60 - 140	112	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	1,1,2-Trichloroethane	2013/07/27	103(5)	60 - 140	111	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Trichloroethylene	2013/07/27	101(5)	60 - 140	96	60 - 130	ND, RDL=0.010	ug/g	NC(6)	50		
3294639	Vinyl Chloride	2013/07/27	119(5)	60 - 140	106	60 - 130	ND, RDL=0.020	ug/g	NC(6)	50		
3294639	p+m-Xylene	2013/07/27	84(5)	60 - 140	83	60 - 130	ND, RDL=0.020	ug/g	NC(6)	50		
3294639	o-Xylene	2013/07/27	85(5)	60 - 140	86	60 - 130	ND, RDL=0.020	ug/g	NC(6)	50		
3294639	Trichlorofluoromethane (FREON 11)	2013/07/27	120(5)	60 - 140	106	60 - 130	ND, RDL=0.050	ug/g	NC(6)	50		
3294639	Xylene (Total)	2013/07/27					ND, RDL=0.020	ug/g	NC(6)	50		
3294661	o-Terphenyl	2013/07/29	84	50 - 130	87	50 - 130	90	%				
3294661	F2 (C10-C16 Hydrocarbons)	2013/07/29	86(7)	50 - 130	83	80 - 120	ND, RDL=10	ug/g	NC(8)	30		
3294661	F3 (C16-C34 Hydrocarbons)	2013/07/29	92(7)	50 - 130	101	80 - 120	ND, RDL=50	ug/g	NC(8)	30		
3294661	F4 (C34-C50 Hydrocarbons)	2013/07/29	76(7)	50 - 130	81	80 - 120	ND, RDL=50	ug/g	NC(8)	30		
3294732	D10-Anthracene	2013/07/26	83	50 - 130	88	50 - 130	88	%				
3294732	D14-Terphenyl (FS)	2013/07/26	85	50 - 130	89	50 - 130	84	%				
3294732	D8-Acenaphthylene	2013/07/26	78	50 - 130	84	50 - 130	80	%				
3294732	Acenaphthene	2013/07/26	84(9)	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Acenaphthylene	2013/07/26	81(9)	50 - 130	105	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Anthracene	2013/07/26	87(9)	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Benzo(a)anthracene	2013/07/26	92(9)	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Benzo(a)pyrene	2013/07/26	91(9)	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Benzo(b/j)fluoranthene	2013/07/26	86(9)	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Benzo(g,h,i)perylene	2013/07/26	90(9)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Benzo(k)fluoranthene	2013/07/26	86(9)	50 - 130	95	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Chrysene	2013/07/26	91(9)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Dibenz(a,h)anthracene	2013/07/26	92(9)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Fluoranthene	2013/07/26	87(9)	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Fluorene	2013/07/26	85(9)	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Indeno(1,2,3-cd)pyrene	2013/07/26	92(9)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	1-Methylnaphthalene	2013/07/26	79(9)	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	2-Methylnaphthalene	2013/07/26	77(9)	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Naphthalene	2013/07/26	79(9)	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC(11, 10)	40		
3294732	Phenanthrene	2013/07/26	84(9)	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		
3294732	Pyrene	2013/07/26	86(9)	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC(10)	40		

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QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3294738	Chromium (VI)	2013/07/29	65(12, 13, 14)	75 - 125	101	80 - 120	ND, RDL=0.2	ug/g	NC(15)	35	106	75 - 125
3294965	Moisture	2013/07/26							NC(16)	20		
3294986	Moisture	2013/07/26							NC(17)	20		
3295205	Decachlorobiphenyl	2013/07/29	89	60 - 130	82	60 - 130	91	%				
3295205	Total PCB	2013/07/29	98(18)	60 - 130	97	60 - 130	ND, RDL=0.010	ug/g	NC(19)	50		
3295206	Decachlorobiphenyl	2013/07/29	96	60 - 130	92	60 - 130	98	%				
3295206	Total PCB	2013/07/29	101(9)	60 - 130	100	60 - 130	ND, RDL=0.010	ug/g	NC(10)	50		
3295233	1,4-Difluorobenzene	2013/07/27	104	60 - 140	105	60 - 140	102	%				
3295233	4-Bromofluorobenzene	2013/07/27	98	60 - 140	100	60 - 140	97	%				
3295233	D10-Ethylbenzene	2013/07/27	89	60 - 140	85	60 - 140	82	%				
3295233	D4-1,2-Dichloroethane	2013/07/27	101	60 - 140	102	60 - 140	99	%				
3295233	F1 (C6-C10)	2013/07/27	98(7)	60 - 140	90	80 - 120	ND, RDL=10	ug/g	NC(8)	50		
3295233	F1 (C6-C10) - BTEX	2013/07/27					ND, RDL=10	ug/g	NC(8)	50		
3295234	1,4-Difluorobenzene	2013/07/27	100	60 - 140	99	60 - 140	102	%				
3295234	4-Bromofluorobenzene	2013/07/27	106	60 - 140	104	60 - 140	106	%				
3295234	D10-Ethylbenzene	2013/07/27	90	60 - 140	83	60 - 140	87	%				
3295234	D4-1,2-Dichloroethane	2013/07/27	96	60 - 140	93	60 - 140	97	%				
3295234	F1 (C6-C10)	2013/07/27	91(20)	60 - 140	94	80 - 120	ND, RDL=10	ug/g	NC(21)	50		
3295234	F1 (C6-C10) - BTEX	2013/07/27					ND, RDL=10	ug/g	NC(21)	50		
3295243	D10-Anthracene	2013/07/27	90	50 - 130	90	50 - 130	94	%				
3295243	D14-Terphenyl (FS)	2013/07/27	91	50 - 130	90	50 - 130	90	%				
3295243	D8-Acenaphthylene	2013/07/27	85	50 - 130	85	50 - 130	85	%				
3295243	Acenaphthene	2013/07/27	88(18)	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Acenaphthylene	2013/07/27	85(18)	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Anthracene	2013/07/27	89(18)	50 - 130	93	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Benzo(a)anthracene	2013/07/27	95(18)	50 - 130	97	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Benzo(a)pyrene	2013/07/27	93(18)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Benzo(b/j)fluoranthene	2013/07/27	87(18)	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Benzo(g,h,i)perylene	2013/07/27	82(18)	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Benzo(k)fluoranthene	2013/07/27	88(18)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Chrysene	2013/07/27	93(18)	50 - 130	96	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Dibenz(a,h)anthracene	2013/07/27	84(18)	50 - 130	87	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Fluoranthene	2013/07/27	91(18)	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Fluorene	2013/07/27	87(18)	50 - 130	89	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Indeno(1,2,3-cd)pyrene	2013/07/27	85(18)	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	1-Methylnaphthalene	2013/07/27	85(18)	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	2-Methylnaphthalene	2013/07/27	82(18)	50 - 130	85	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Naphthalene	2013/07/27	84(18)	50 - 130	88	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295243	Phenanthrene	2013/07/27	87(18)	50 - 130	90	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		

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QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3295243	Pyrene	2013/07/27	89(18)	50 - 130	91	50 - 130	ND, RDL=0.0050	ug/g	NC(19)	40		
3295272	Acid Extractable Sulphur (S)	2013/07/29	103(22)	75 - 125	103	80 - 120	ND, RDL=50	ug/g	NC(23)	30		
3295273	Acid Extractable Antimony (Sb)	2013/07/27	92(22)	75 - 125	94	80 - 120	ND, RDL=0.20	ug/g	NC(23)	30		
3295273	Acid Extractable Arsenic (As)	2013/07/27	97(22)	75 - 125	97	80 - 120	ND, RDL=1.0	ug/g	NC(23)	30		
3295273	Acid Extractable Barium (Ba)	2013/07/27	NC(22)	75 - 125	92	80 - 120	ND, RDL=0.50	ug/g	21.2(23)	30		
3295273	Acid Extractable Beryllium (Be)	2013/07/27	95(22)	75 - 125	97	80 - 120	ND, RDL=0.20	ug/g	NC(23)	30		
3295273	Acid Extractable Cadmium (Cd)	2013/07/27	97(22)	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	NC(23)	30		
3295273	Acid Extractable Chromium (Cr)	2013/07/27	100(22)	75 - 125	93	80 - 120	ND, RDL=1.0	ug/g	15.3(23)	30		
3295273	Acid Extractable Cobalt (Co)	2013/07/27	97(22)	75 - 125	99	80 - 120	ND, RDL=0.10	ug/g	16.6(23)	30		
3295273	Acid Extractable Copper (Cu)	2013/07/27	96(22)	75 - 125	97	80 - 120	ND, RDL=0.50	ug/g	12.6(23)	30		
3295273	Acid Extractable Lead (Pb)	2013/07/27	108(22)	75 - 125	100	80 - 120	ND, RDL=1.0	ug/g	13.9(23)	30		
3295273	Acid Extractable Molybdenum (Mo)	2013/07/27	91(22)	75 - 125	96	80 - 120	ND, RDL=0.50	ug/g	NC(23)	30		
3295273	Acid Extractable Nickel (Ni)	2013/07/27	99(22)	75 - 125	102	80 - 120	ND, RDL=0.50	ug/g	9.8(23)	30		
3295273	Acid Extractable Selenium (Se)	2013/07/27	99(22)	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	NC(23)	30		
3295273	Acid Extractable Silver (Ag)	2013/07/27	101(22)	75 - 125	104	80 - 120	ND, RDL=0.20	ug/g	NC(23)	30		
3295273	Acid Extractable Thallium (Tl)	2013/07/27	93(22)	75 - 125	96	80 - 120	ND, RDL=0.050	ug/g	NC(23)	30		
3295273	Acid Extractable Tin (Sn)	2013/07/27	95(22)	75 - 125	100	80 - 120	ND, RDL=5.0	ug/g	NC(23)	30		
3295273	Acid Extractable Uranium (U)	2013/07/27	97(22)	75 - 125	100	80 - 120	ND, RDL=0.050	ug/g	8.4(23)	30		
3295273	Acid Extractable Vanadium (V)	2013/07/27	NC(22)	75 - 125	93	80 - 120	ND, RDL=5.0	ug/g	1.6(23)	30		
3295273	Acid Extractable Zinc (Zn)	2013/07/27	NC(22)	75 - 125	103	80 - 120	ND, RDL=5.0	ug/g	10.2(23)	30		
3295273	Acid Extractable Mercury (Hg)	2013/07/27	111(22)	75 - 125	99	80 - 120	ND, RDL=0.050	ug/g	NC(23)	30		
3295281	o-Terphenyl	2013/07/29	79	50 - 130	78	50 - 130	67	%				
3295281	F2 (C10-C16 Hydrocarbons)	2013/07/29	92(20)	50 - 130	87	80 - 120	ND, RDL=10	ug/g	18.6(21)	30		
3295281	F3 (C16-C34 Hydrocarbons)	2013/07/29	110(20)	50 - 130	104	80 - 120	ND, RDL=50	ug/g	16.7(21)	30		
3295281	F4 (C34-C50 Hydrocarbons)	2013/07/29	79(20)	50 - 130	82	80 - 120	ND, RDL=50	ug/g	NC(21)	30		
3295302	Acid Extractable Antimony (Sb)	2013/07/27	96(24)	75 - 125	96	80 - 120	ND, RDL=0.20	ug/g	NC(25)	30		
3295302	Acid Extractable Arsenic (As)	2013/07/27	95(24)	75 - 125	98	80 - 120	ND, RDL=1.0	ug/g	NC(25)	30		
3295302	Acid Extractable Barium (Ba)	2013/07/27	86(24)	75 - 125	93	80 - 120	ND, RDL=0.50	ug/g	12.5(25)	30		
3295302	Acid Extractable Beryllium (Be)	2013/07/27	96(24)	75 - 125	97	80 - 120	ND, RDL=0.20	ug/g	NC(25)	30		
3295302	Acid Extractable Cadmium (Cd)	2013/07/27	99(24)	75 - 125	100	80 - 120	ND, RDL=0.10	ug/g	NC(25)	30		
3295302	Acid Extractable Chromium (Cr)	2013/07/27	92(24)	75 - 125	96	80 - 120	ND, RDL=1.0	ug/g	4.4(25)	30		
3295302	Acid Extractable Cobalt (Co)	2013/07/27	96(24)	75 - 125	101	80 - 120	ND, RDL=0.10	ug/g	0.8(25)	30		
3295302	Acid Extractable Copper (Cu)	2013/07/27	98(24)	75 - 125	100	80 - 120	ND, RDL=0.50	ug/g	3.7(25)	30		
3295302	Acid Extractable Lead (Pb)	2013/07/27	98(24)	75 - 125	101	80 - 120	ND, RDL=1.0	ug/g	NC(25)	30		
3295302	Acid Extractable Molybdenum (Mo)	2013/07/27	94(24)	75 - 125	95	80 - 120	ND, RDL=0.50	ug/g	NC(25)	30		
3295302	Acid Extractable Nickel (Ni)	2013/07/27	96(24)	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	1(25)	30		
3295302	Acid Extractable Selenium (Se)	2013/07/27	98(24)	75 - 125	103	80 - 120	ND, RDL=0.50	ug/g	NC(25)	30		
3295302	Acid Extractable Silver (Ag)	2013/07/27	104(24)	75 - 125	106	80 - 120	ND, RDL=0.20	ug/g	NC(25)	30		
3295302	Acid Extractable Thallium (Tl)	2013/07/27	96(24)	75 - 125	98	80 - 120	ND, RDL=0.050	ug/g	NC(25)	30		

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3295302	Acid Extractable Tin (Sn)	2013/07/27	97(24)	75 - 125	98	80 - 120	ND, RDL=5.0	ug/g	NC(25)	30		
3295302	Acid Extractable Uranium (U)	2013/07/27	100(24)	75 - 125	100	80 - 120	ND, RDL=0.050	ug/g	NC(25)	30		
3295302	Acid Extractable Vanadium (V)	2013/07/27	NC(24)	75 - 125	97	80 - 120	ND, RDL=5.0	ug/g	5.3(25)	30		
3295302	Acid Extractable Zinc (Zn)	2013/07/27	NC(24)	75 - 125	103	80 - 120	ND, RDL=5.0	ug/g	6.4(25)	30		
3295302	Acid Extractable Mercury (Hg)	2013/07/27	103(24)	75 - 125	102	80 - 120	ND, RDL=0.050	ug/g	NC(25)	30		
3295304	Hot Water Ext. Boron (B)	2013/07/27	96(26)	75 - 125	97	75 - 125	ND, RDL=0.050	ug/g	NC(27)	35		
3295316	D10-Anthracene	2013/07/27	NC(28)	30 - 130	101	30 - 130	116	%				
3295316	D14-Terphenyl (FS)	2013/07/27	NC(28)	30 - 130	93	30 - 130	98	%				
3295316	D8-Acenaphthylene	2013/07/27	NC(28)	30 - 130	76	30 - 130	66	%				
3295316	Acenaphthene	2013/07/27	NC(29)	50 - 130	101	50 - 130	ND, RDL=0.01	ug/g	21.6(30)	50		
3295316	Acenaphthylene	2013/07/27	78(29)	50 - 130	80	50 - 130	ND, RDL=0.005	ug/g	NC(30)	50		
3295316	Anthracene	2013/07/27	74(29)	50 - 130	100	50 - 130	ND, RDL=0.005	ug/g	NC(30)	50		
3295316	Benzo(a)anthracene	2013/07/27	78(29)	50 - 130	92	50 - 130	ND, RDL=0.01	ug/g	NC(30)	50		
3295316	Benzo(a)pyrene	2013/07/27	83(29)	50 - 130	91	50 - 130	ND, RDL=0.005	ug/g	NC(30)	50		
3295316	Benzo(b/j)fluoranthene	2013/07/27	70(29)	50 - 130	97	50 - 130	ND, RDL=0.01	ug/g	NC(30)	50		
3295316	Benzo(g,h,i)perylene	2013/07/27	100(29)	50 - 130	94	50 - 130	ND, RDL=0.02	ug/g	NC(30)	50		
3295316	Benzo(k)fluoranthene	2013/07/27	65(29)	50 - 130	103	50 - 130	ND, RDL=0.01	ug/g	NC(30)	50		
3295316	Chrysene	2013/07/27	97(29)	50 - 130	97	50 - 130	ND, RDL=0.01	ug/g	NC(30)	50		
3295316	Dibenz(a,h)anthracene	2013/07/27	69(29)	50 - 130	88	50 - 130	ND, RDL=0.02	ug/g	NC(30)	50		
3295316	Fluoranthene	2013/07/27	69(29)	50 - 130	98	50 - 130	ND, RDL=0.005	ug/g	NC(30)	50		
3295316	Fluorene	2013/07/27	NC(29)	50 - 130	90	50 - 130	ND, RDL=0.005	ug/g	19.8(30)	50		
3295316	Indeno(1,2,3-cd)pyrene	2013/07/27	71(29)	50 - 130	96	50 - 130	ND, RDL=0.02	ug/g	NC(30)	50		
3295316	1-Methylnaphthalene	2013/07/27	NC(29)	50 - 130	90	50 - 130	ND, RDL=0.005	ug/g	22.2(30)	50		
3295316	2-Methylnaphthalene	2013/07/27	NC(29)	50 - 130	85	50 - 130	ND, RDL=0.005	ug/g	21.2(30)	50		
3295316	Naphthalene	2013/07/27	NC(31, 29)	50 - 130	85	50 - 130	ND, RDL=0.005	ug/g	20.8(30)	50		
3295316	Phenanthrene	2013/07/27	NC(29)	50 - 130	87	50 - 130	ND, RDL=0.005	ug/g	28.1(30)	50		
3295316	Pyrene	2013/07/27	85(29)	50 - 130	98	50 - 130	ND, RDL=0.005	ug/g	NC(30)	50		
3295393	Free Cyanide	2013/07/29	98(14)	75 - 125	91	80 - 120	ND, RDL=0.01	ug/g	NC(15)	35		
3295510	Hot Water Ext. Boron (B)	2013/07/27	98(32)	75 - 125	97	75 - 125	ND, RDL=0.050	ug/g	NC(16)	35		
3295817	Leachable Mercury (Hg)	2013/07/29	109	80 - 120	100	80 - 120	ND, RDL=0.001	mg/L	NC	25		
3295867	Leachable 4-Bromofluorobenzene	2013/07/29	102	70 - 130	101	70 - 130	98	%				
3295867	Leachable D4-1,2-Dichloroethane	2013/07/29	93	70 - 130	96	70 - 130	95	%				
3295867	Leachable D8-Toluene	2013/07/29	99	70 - 130	100	70 - 130	99	%				
3295867	Leachable Benzene	2013/07/29	94	70 - 130	95	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable Carbon Tetrachloride	2013/07/29	92	70 - 130	95	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable Chlorobenzene	2013/07/29	91	70 - 130	93	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable Chloroform	2013/07/29	88	70 - 130	88	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable 1,2-Dichlorobenzene	2013/07/29	87	70 - 130	91	70 - 130	ND, RDL=0.050	mg/L	NC	30		
3295867	Leachable 1,4-Dichlorobenzene	2013/07/29	86	70 - 130	93	70 - 130	ND, RDL=0.050	mg/L	NC	30		

Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3295867	Leachable 1,2-Dichloroethane	2013/07/29	89	70 - 130	90	70 - 130	ND, RDL=0.050	mg/L	NC	30		
3295867	Leachable 1,1-Dichloroethylene	2013/07/29	99	70 - 130	98	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable Methylene Chloride(Dichloromethane)	2013/07/29	86	70 - 130	86	70 - 130	ND, RDL=0.20	mg/L	NC	30		
3295867	Leachable Methyl Ethyl Ketone (2-Butanone)	2013/07/29	85	60 - 140	84	60 - 140	ND, RDL=1.0	mg/L	NC	30		
3295867	Leachable Tetrachloroethylene	2013/07/29	89	70 - 130	96	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable Trichloroethylene	2013/07/29	94	70 - 130	98	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295867	Leachable Vinyl Chloride	2013/07/29	97	70 - 130	85	70 - 130	ND, RDL=0.020	mg/L	NC	30		
3295902	Leachable Arsenic (As)	2013/07/29	104	75 - 125	107	75 - 125	ND, RDL=0.2	mg/L	NC	35		
3295902	Leachable Barium (Ba)	2013/07/29	NC(33)	75 - 125	106	75 - 125	ND, RDL=0.2	mg/L	NC	35		
3295902	Leachable Boron (B)	2013/07/29	97	75 - 125	102	75 - 125	ND, RDL=0.1	mg/L	NC	35		
3295902	Leachable Cadmium (Cd)	2013/07/29	104	75 - 125	107	75 - 125	ND, RDL=0.05	mg/L	NC	35		
3295902	Leachable Chromium (Cr)	2013/07/29	106	75 - 125	105	75 - 125	ND, RDL=0.1	mg/L	NC	35		
3295902	Leachable Lead (Pb)	2013/07/29	103	75 - 125	109	75 - 125	ND, RDL=0.1	mg/L	NC	35		
3295902	Leachable Selenium (Se)	2013/07/29	105	75 - 125	107	75 - 125	ND, RDL=0.1	mg/L	NC	35		
3295902	Leachable Silver (Ag)	2013/07/29	101	75 - 125	105	75 - 125	ND, RDL=0.01	mg/L	NC	35		
3295902	Leachable Uranium (U)	2013/07/29	107	75 - 125	111	75 - 125	ND, RDL=0.01	mg/L	NC	35		
3296030	Acid Extractable Sulphur (S)	2013/07/29	101(24)	75 - 125	100	80 - 120	ND, RDL=50	ug/g	NC(25)	30		
3296624	Leachable 2,4,6-Tribromophenol	2013/07/30	87	10 - 130	86	10 - 130	76	%				
3296624	Leachable 2-Fluorobiphenyl	2013/07/30	79	30 - 130	76	30 - 130	69	%				
3296624	Leachable 2-Fluorophenol	2013/07/30	31	10 - 130	30	10 - 130	26	%				
3296624	Leachable D14-Terphenyl (FS)	2013/07/30	87	30 - 130	87	30 - 130	80	%				
3296624	Leachable D5-Nitrobenzene	2013/07/30	78	30 - 130	76	30 - 130	69	%				
3296624	Leachable D5-Phenol	2013/07/30	39	10 - 130	37	10 - 130	29	%				
3296624	Leachable Benzo(a)pyrene	2013/07/30	97	30 - 130	96	30 - 130	ND, RDL=0.1	ug/L	NC	40		
3296624	Leachable m/p-Cresol	2013/07/30	56	10 - 130	68	10 - 130	ND, RDL=2.5	ug/L	NC	40		
3296624	Leachable o-Cresol	2013/07/30	75	10 - 130	76	10 - 130	ND, RDL=2.5	ug/L	NC	40		
3296624	Leachable 2,4-Dichlorophenol	2013/07/30	81	10 - 130	80	10 - 130	ND, RDL=2.5	ug/L	NC	40		
3296624	Leachable Hexachlorobenzene	2013/07/30	94	30 - 130	94	30 - 130	ND, RDL=10	ug/L	NC	40		
3296624	Leachable Hexachloroethane	2013/07/30	73	30 - 130	71	30 - 130	ND, RDL=10	ug/L	NC	40		
3296624	Leachable Nitrobenzene	2013/07/30	78	30 - 130	77	30 - 130	ND, RDL=10	ug/L	NC	40		
3296624	Leachable Pentachlorophenol	2013/07/30	93	30 - 130	91	30 - 130	ND, RDL=2.5	ug/L	NC	40		
3296624	Leachable Pyridine	2013/07/30	27(12, 34)	30 - 130	25(12, 34)	30 - 130	ND, RDL=10	ug/L	NC	40		
3296624	Leachable 2,3,4,6-Tetrachlorophenol	2013/07/30	94	10 - 130	93	10 - 130	ND, RDL=2.5	ug/L	NC	40		
3296624	Leachable 2,4,5-Trichlorophenol	2013/07/30	89	10 - 130	88	10 - 130	ND, RDL=0.5	ug/L	NC	40		
3296624	Leachable 2,4,6-Trichlorophenol	2013/07/30	87	10 - 130	85	10 - 130	ND, RDL=2.5	ug/L	NC	40		
3296624	Leachable Cresol Total	2013/07/30					ND, RDL=2.5	ug/L	NC	40		
3296626	Decachlorobiphenyl	2013/07/30	73	40 - 130	87	40 - 130	92	%				
3296626	Aroclor 1260	2013/07/30	67(29)	60 - 130	112	60 - 130	ND, RDL=0.01	ug/g	1.8	50		
3296626	Total PCB	2013/07/30	67(29)	60 - 130	112	60 - 130	ND, RDL=0.01	ug/g	1.8	50		

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Maxxam Job #: B3C1829
Report Date: 2013/08/07

Conestoga-Rovers and Associates Ltd
Client Project #: 82415-20

Your P.O. #: 20-016130-1
Sampler Initials: HS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3296626	Aroclor 1262	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1016	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1221	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1232	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1242	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1248	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1254	2013/07/30					ND, RDL=0.01	ug/g				
3296626	Aroclor 1268	2013/07/30					ND, RDL=0.01	ug/g				
3297720	F4G-sg (Grav. Heavy Hydrocarbons)	2013/07/30	98	65 - 135	96	65 - 135	ND, RDL=100	ug/g	11.8	50		

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QUALITY ASSURANCE REPORT

			Leachate Blank	
QC Batch	Parameter	Date	Value	Units
3295817	Leachable Mercury (Hg)	2013/07/29	ND	mg/L
3295902	Leachable Arsenic (As)	2013/07/29	ND	mg/L
3295902	Leachable Barium (Ba)	2013/07/29	ND	mg/L
3295902	Leachable Boron (B)	2013/07/29	ND	mg/L
3295902	Leachable Cadmium (Cd)	2013/07/29	ND	mg/L
3295902	Leachable Chromium (Cr)	2013/07/29	ND	mg/L
3295902	Leachable Lead (Pb)	2013/07/29	ND	mg/L
3295902	Leachable Selenium (Se)	2013/07/29	ND	mg/L
3295902	Leachable Silver (Ag)	2013/07/29	ND	mg/L
3295902	Leachable Uranium (U)	2013/07/29	ND	mg/L

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QUALITY ASSURANCE REPORT

			Leachate Blank	
QC Batch	Parameter	Date	Value	Units

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Leachate Blank: A blank matrix containing all reagents used in the leaching procedure. Used to determine any process contamination.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Matrix Spike Parent ID [SK3931-01]
(10) - Duplicate Parent ID [SK3949-02]
(11) - Detection Limit was raised due to matrix interferences.
(12) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(13) - The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.
(14) - Matrix Spike Parent ID [SK3945-01]
(15) - Duplicate Parent ID [SK3945-01]
(16) - Duplicate Parent ID [SK3938-01]
(17) - Duplicate Parent ID [SK3948-01]
(18) - Matrix Spike Parent ID [SK3939-02]
(19) - Duplicate Parent ID [SK3939-02]
(2) - Duplicate Parent ID [SK3931-01]
(20) - Matrix Spike Parent ID [SK3950-02]
(21) - Duplicate Parent ID [SK3950-02]
(22) - Matrix Spike Parent ID [SK3932-01]
(23) - Duplicate Parent ID [SK3932-01]
(24) - Matrix Spike Parent ID [SK3939-01]
(25) - Duplicate Parent ID [SK3939-01]
(26) - Matrix Spike Parent ID [SK3961-01]
(27) - Duplicate Parent ID [SK3961-01]
(28) - Surrogate recovery was not calculated (NC) due to matrix interferences.
(29) - Matrix Spike Parent ID [SK3966-03]
(3) - Matrix Spike Parent ID [SK3930-03]
(30) - Duplicate Parent ID [SK3966-03]

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Sampler Initials: HS

(31) - The recovery in the matrix spike was not calculated (NC). Because of the high concentration of this analyte in the parent sample, the relative difference between the spiked and unspiked concentrations is not sufficiently significant to permit a reliable recovery calculation.
(32) - Matrix Spike Parent ID [SK3938-01]
(33) - The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.
(34) - The recovery was below the lower control limit. This may represent a low bias in some results for this specific analyte.
(4) - Duplicate Parent ID [SK3930-03]
(5) - Matrix Spike Parent ID [SK3950-03]
(6) - Duplicate Parent ID [SK3950-03]
(7) - Matrix Spike Parent ID [SK3932-02]
(8) - Duplicate Parent ID [SK3932-02]
(9) - Matrix Spike Parent ID [SK3949-02]

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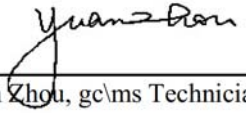
Validation Signature Page

Maxxam Job #: B3C1829

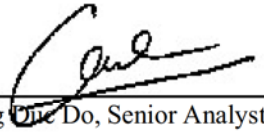
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Ewa Pranjic, M.Sc., C.Chem, Scientific Specialist

Mahmudul Khan, GC Analysts



Yuan Zhou, gc\ms Technician



Cuong Duc Do, Senior Analyst, Semi-Volatiles

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Validation Signature Page

Maxxam Job #: B3C1829

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

Suzana Popovic, Supervisor, Hydrocarbons

Charles Ancker, B.Sc., M.Sc., C.Chem, Senior Analyst

Floyd Mayede, Senior Analyst

Medhat Riskallah, Manager, Hydrocarbon Department

==========

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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RUSH

26-Jul-13 09:40
Nure Tamanna
B3C1829
SEL ENV-567

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		PROJECT INFORMATION:		Laboratory Use Only:
Company Name:	#3000 Conestoga-Rovers and Associates Ltd	Quotation #:	B20265	BOTTLE ORDER #: 428136
Contact Name:	Jennifer Balkwill	P.O. #:		
Address:	651 Colby Dr Waterloo ON N2V 1C2	Project #:		PROJECT MANAGER: Nure Tamanna
Phone:	(519)884-7780 x355 Fax: (519)725-1394	Project Name:		
Email:	jbalkwill@craworld.com	Site #:	Iqaluit, Nunavut	C#428136-01-01
		Sampled By:	H Steinberg	

Regulation 153 (2011): ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table ___ ☐ Res/Park ☐ Ind/Comm ☐ Agri/Other ☐ Medium/Fine ☐ Coarse ☐ For RSC

Other Regulations: ☑ CCME ☐ Reg. 558 ☐ MISA ☐ PWQO ☐ Other ☐ Sanitary Sewer Bylaw ☐ Storm Sewer Bylaw Municipality ___

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: 1 day TAT Time Required: ___ ☑
Rush Confirmation Number: NTA201307NUN1 (call lab for #)

	* Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	OGME Petroleum Hydrocarbons	pH, Mercury (Low Level) Inorganics	BTEX, PHC F1 organics	Volatile Organic Compounds in Water SOIL	CCME Low Level PHC Cyanide - ALBERTA	CCME Dissolved Metals (low) - ALBERTA	CCME PAHs - Low - ALBERTA	Low level Hexavalent Chromium - ALBERTA	# of Bottles	Comments
1		S-82415-072313-HS-1	7/23/2013		soil	NA			X	X	X					4	
2		S-82415-072313-HS-2	7/23/13						X	X	X					4	
3		S-82415-072313-HS-3	7/23/13						X	X	X					4	
4		S-82415-072313-HS-4	7/23/13						X	X	X					4	
5		S-82415-072313-HS-5	7/23/13						X	X	X					4	
6		S-82415-072313-HS-6	7/23/13						X	X	X					4	S82415-072313-HS-Asp
7		S-82415-072313-HS-7	7/23/13						X	X	X					4	
8		S-82415-072313-HS-8	7/23/13						X	X	X					4	
9		S-82415-072313-HS-2-DUP	7/23/13						X	X	X					4	
10																	

Samples on ice.

CAUTION
Reason: "TAR" smelly.

9/9/9°C
9/9/10°C
7/7/7°C

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
H Steinberg	13/07/24	1440	SHRUTI PATEL	2013/07/26	09:40	

Laboratory Use Only: Time Sensitive | Temperature (°C) on Receipt: 7 / 7 / 8°C | Custody Seal: Present ☑ Yes, intact ☑ Yes | No

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam

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CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#3000 Conestoga-Rovers and Associates Ltd	Company Name:		Quotation #:	B20265	MAXXAM JOB #:	BOTTLE ORDER #: 428136
Contact Name:	Jennifer Balkwill	Contact Name:		P.O. #:			
Address:	651 Colby Dr Waterloo ON N2V 1C2	Address:		Project #:			
				Project Name:		CHAIN OF CUSTODY #: C#428136-02-01	PROJECT MANAGER: Nure Tamanna
Phone:	(519)884-7780 x359 Fax: (519)725-1394	Phone:	Fax:	Site #:	Iqaluit, Nunavut		
Email:	jbalkwill@craworld.com	Email:		Sampled By:	H Steinberg		

Regulation 153 (2011)	Other Regulations	SPECIAL INSTRUCTIONS
☐ Table 1 ☐ Res/Park ☐ Medium/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table ___ ☐ For RSC	☑ CCME ☐ Sanitary Sewer Bylaw ☐ Reg. 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Other ___	

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (Please be specific):

TURNAROUND TIME (TAT) REQUIRED:

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS

Regular (Standard) TAT: ☐
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: 1 day TAT Time Required: ___ ☑
Rush Confirmation Number: NTA 20130 7NUN A *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	CCME Petroleum Hydrocarbons	pH, Mercury (low level), Inorganics	PCBs (low), organics	Volatile Organic Compounds in Water, Soil	CCME Low Level Free Cyanide - ALBERTA	CCME Dissolved Metals (low) - ALBERTA	CCME PAHs - Low - ALBERTA	Low level Hexavalent Chromium - ALBERTA			# of Bottles	Comments
1		S-82415-072313-HS-10	7/23/13		Soil	NA			X	X	X							4	
2		S-82415-072313-HS-12							X	X	X								samples on ice
3		-13							X	X	X								
4		-14							X	X	X								
5		-15							X	X	X								
6		-16							X	X	X								
7		-17A							X	X	X								
8		-18							X	X	X								
9		-17B							X	X	X								
10		-19							X	X	X								9/9/9°C

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
H Steinberg	13/07/24	1240	Shruti SHRUTI PATEL	2013/07/26	09:40	

Laboratory Use Only				
Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	9/9/10°C	Present	✓	
		Intact		

7/7/8°C
7/7/7°C

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

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CHAIN OF CUSTODY RECORD

Page 1 of 1

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Company Name:	#3000 Conestoga-Rovers and Associates Ltd	Company Name:		Quotation #:	B20265	MAXXAM JOB #:	BOTTLE ORDER #: 428136
Contact Name:	Jennifer Balkwill	Contact Name:		P.O. #:			
Address:	651 Colby Dr Waterloo ON N2V 1C2	Address:		Project #:			
				Project Name:		CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(519)884-7780 x359 Fax: (519)725-1394	Phone:	Fax:	Site #:	Iqaluit, Nūnavut	C#428136-03-01	Nure Tamanna
Email:	jbalkwill@craworld.com	Email:		Sampled By:	H Steinberg		

Regulation 153 (2011): ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table ___ ☐ Res/Park ☐ Ind/Comm ☐ Agri/Other ☐ Medium/Fine ☐ Coarse ☐ For RSC

Other Regulations: ☐ CCME ☐ Reg. 558 ☐ MISA ☐ PWQO ☐ Other ___ ☐ Sanitary Sewer Bylaw ☐ Storm Sewer Bylaw Municipality ___

SPECIAL INSTRUCTIONS

Include Criteria on Certificate of Analysis (Y/N)? ___

Note: For MOE regulated drinking water samples - please use the Drinking Water Chain of Custody Form

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

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Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: 1 day TAT Time Required: ___ ☑
Rush Confirmation Number: NTA20130 7NUN1 (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	~~CCME Petroleum Hydrocarbons~~	pH, ~~Mercury (low level)~~ (norganics)	~~PCBs (low)~~ organics	Volatile Organic Compounds in ~~Water~~ Soil	~~CCME Low-Level Free Cyanide - ALBERTA~~	~~CCME Dissolved Metals (low) - ALBERTA~~	~~CCME PAHs - Low - ALBERTA~~	~~Low-level Hexavalent Chromium - ALBERTA~~			# of Bottles	Comments
1		S-82415-07231 3-~~SED~~ HS-20	7/23/13		soil				X	X	X							4	
2		-21							X	X	X								Samples on ice
3		-22							X	X	X								
4		-23							X	X	X								
5		-24-0.6							X	X	X								
6		-24-1.6							X	X	X								
7		-25							X	X	X								
8		-26							X	X	X								
9		-27							X	X	X								
10		-28							X	X	X								9/9/9°C

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
H Steinberg	13/07/~~24~~ 26	1330	Shruti SHRUTI PATEL	2013/07/26	09:40	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
	9/9/10°C	Present	✓	
		Intact	✓	

7/7/8°C
7/7/7°C

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CHAIN OF CUSTODY RECORD

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Company Name:	#3000 Conestoga-Rovers and Associates Ltd	Company Name:		Quotation #:	B20265	MAXXAM JOB #:	BOTTLE ORDER #: 428136
Contact Name:	Jennifer Balkwill	Contact Name:		P.O. #:			
Address:	651 Colby Dr Waterloo ON N2V 1C2	Address:		Project #:			
				Project Name:		CHAIN OF CUSTODY #:	PROJECT MANAGER:
Phone:	(519)884-7780 x355 Fax: (519)725-1394	Phone:	Fax:	Site #:	Iqaluit, Nunavut	C#428136-04-01	Nure Tamanna
Email:	jbalkwill@craworld.com	Email:		Sampled By:	H. Steinberg		

Regulation 153 (2011)
☐ Table 1 ☐ Res/Park ☐ Medium/Fine
☐ Table 2 ☐ Ind/Comm ☐ Coarse
☐ Table 3 ☐ Agri/Other
☐ Table ___ ☐ For RSC

Other Regulations
☑ CCME ☐ Sanitary Sewer Bylaw
☐ Reg. 558 ☐ Storm Sewer Bylaw
☐ MISA Municipality ___
☐ PWQO
☐ Other ___

SPECIAL INSTRUCTIONS

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Job Specific Rush TAT (if applies to entire submission)
Date Required: 1 day TAT Time Required: ___
Rush Confirmation Number: NTA201307NUN1 (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water? (Y/N)	Metals Field Filtered? (Y/N)	ANALYSIS REQUESTED (Please be specific): GCME Petroleum Hydrocarbons	pH, Mercury (Low Level) inorganics	PCBs (low) organics	Volatile Organic Compounds in Water soil	CCME Low Level Free Cyanide - ALBERTA	GCME Dissolved Metals (low) - ALBERTA	CCME PAHs - Low - ALBERTA	Low level Hexavalent Chromium - ALBERTA	TCLP (vocs, svocs metals, ignit, corr)	# of Bottles	Comments
1		S-82415-072313-HS-29	7/23/13		Soil				X	X	X						4	Samples on ice
2		-30							X	X	X							
3		-31							X	X	X							
4		-32							X	X	X							
5		-LTU1							X	X	X							
6		-LTU2							X	X	X							
7		-LTU299							X	X	X							
8		-ASP							X	X	X					X		
9																		
10																		9/9/9°C

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal	Yes	No
H Steinberg	13/07/24	1330	SHRUTI PATEL	2013/07/26	09:40			9/9/10°C	Present	✓	
									Intact	✓	

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7/7/8°C
7/7/7°C