SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

Old Town Site, Clyde River, Nunavut

FINAL REPORT

Prepared for:

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Government of Nunavut
Pond Inlet, NU

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EXECUTIVE SUMMARY

Nunami Stantec Limited (NSL) was retained by the Department of Community and Government Services (CGS) of the Government of Nunavut (GN) to conduct a Supplemental Phase III Environmental Site Assessment (ESA) and a Human Health and Ecological Risk Assessment (HHERA) for the Old Town Site in Clyde River, Nunavut (NU). The work was completed in accordance with the proposal dated April 8, 2010 titled "Remediation of Old Town Site, Clyde River, Nunavut*", and Contract Change Order #3 for contract CGSHQ-08027-01, dated April 29, 2010.*

The community of Clyde River was originally established on the east side of Patricia Bay, approximately 5 km east of the present day community. Known locally as "Old Town", the original settlement was occupied from 1923 until 1970 when the new community was established. Residents of Clyde River continue to camp in the Old Town area during the summer and collect drinking water from streams running through the area. The Old Town Site consists of several building foundations, four bulk fuel aboveground storage tanks (ASTs) and several dump sites for hazardous and non-hazardous waste. The area surrounding the Old Town Site is undeveloped. The Site is divided into key areas including the Hudson Bay Company (HBC) Area, the Department of Transportation (DOT) Area, the Department of Northern Affairs and Natural Resources (DNANR) Area, the Site Dump, and other areas (including an area north of the HBC Area, the DNANR Upper Plateau Residential Area and the structure southeast of the Beach Dump).

Previous investigations at the Site have been undertaken by the Environmental Sciences Group (1995), Jacques Whitford Limited (2003) and Nunami Jacques Whitford Limited (2008). A preliminary Remedial Action Plan, prepared in 2009, recommended a supplemental Phase III ESA and HHERA be conducted to inform a detailed remedial design for the Site. This report documents the activities and results of the Supplementary Phase III ESA. The HHERA was conducted to inform the ESA and is reported under separate cover.

Supplementary Phase III ESA Field Program

The field component of the Phase III ESA was conducted between August 3rd and 18th, 2010 and involved:

- A site overview to confirm areas of concern identified during the previous environmental investigations and identify any additional areas of concern. Findings of the site overview included two areas of un-marked graves, several areas of surficial and partially buried debris, remaining waste oil drums and confirmation of areas of surficial aluminum and hydrocarbon staining.
- A geophysical survey to assess the presence/absence of buried debris at select areas of the Site
- The excavation of 134 test pits
- Installation of 14 drive-point monitoring wells

- Collection of 525 test pit soil samples for field screening for headspace vapour concentrations and potential laboratory analysis
- Collection of 12 surface soil, 7 surface water, 9 groundwater (melt water), 11 sediment, 4 waste characterization and 7 drum content samples for laboratory analysis
- Confirmation of waste volumes recorded during previous investigations
- GPS survey of site features and photographic documentation.

Post site visit activities included laboratory analysis of samples, data processing and analysis and reporting. Laboratory analytical results were compared to screening criteria adopted by the GN where available. For media and/or parameters where the GN has not established guidelines, NSL has evaluated the data using other applicable screening criteria from the Canadian Council of Ministers of the Environment (CCME), and in cases where CCME guidelines do not exist; guidelines from other Canadian and international jurisdictions have been applied.

Human Health and Ecological Risk Assessment

In addition to the Phase III ESA, an HHERA was undertaken to determine whether or not on-site concentrations of contaminants pose unacceptable risk to human or ecological receptors given current and future land uses. Site specific target levels (SSTLs) were developed to be used in conjunction with the generic screening criteria to estimate the location and volumes of soil on-site requiring remediation. The SSTL for aluminum was calculated to be 180,000 mg/kg. A lead SSTL of 474 mg/kg was calculated for the Site. PHC F1, F2 and F3 SSTLs were calculated as roughly 240 mg/kg, 3700 mg/kg and 1800 mg/kg, respectively. The HHERA is summarized in this report and the full report has been submitted under separate cover.

ESA Results

The results of the current investigation were evaluated in conjunction with results from the 2008 investigation to provide a comprehensive description of site conditions as summarized below.

Geophysical Investigation

Only one buried subsurface feature, a series of heavy gauge copper wires between the former DOT Radiosonde and DOT Power House was detected during the survey. The results of the geophysical survey did not identify any previously unknown areas of potential buried debris.

Soil

Three areas of significant surficial staining have been identified at the Site: the spillways containing aluminum powder down-gradient of the former hydrogen generating buildings; the black hydrocarbon staining west of the DOT Powerhouse; and, intermittent staining in the area of the former Fuel Dump along the beach. In keeping with the remedial objectives for the Site NSL has identified that these areas would be remediated.

One hundred and thirty two (132) samples were submitted for analysis of BTEX and PHC fractions F1-F4. Thirty five (35) samples exhibited concentrations of one or more of PHC Fractions F1-F3 above the

screening criteria. Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, soil PHC impacts in excess of the screening criteria were encountered at several areas across the Site including throughout the DOT portion of the Main Site (Fuel Tanks, spillways down-gradient of HGB1 and HGB2, Radiosonde, Washhouse, and Powerhouse), and at the Site Dump, Southern Powerhouse and Garage, Fuel Dump and at buried barrels along the beach.

A total of 75 soil samples collected from across the Site were submitted for laboratory analysis of metals. Concentrations of one or more of copper, hexavalent chromium, lead, selenium, silver and zinc exceeded the screening criteria in 8 of the soil samples analyzed. Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, soil metals impacts in excess of the screening criteria were encountered in soil samples analyzed from several areas across the Site including the Beach Dump, DOT HGB3 Spillway, Site Dump, the location of uncovered buried burnt debris, the area of ash uncovered north of the buried barrels along the beach, and three locations of surficial debris located at the residential plateau.

Nineteen (19) soil samples collected from across the Site were submitted for laboratory analysis of PAHs. Concentrations of phenanthrene and/or naphthalene exceeded the screening criteria in 5 of the soil samples analyzed. Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, soil PAH impacts in excess of the screening criteria were encountered at several areas across the Main Site including the spillway down-gradient of HGB1, a test pit down-gradient of the Washhouse, Radiosonde, DOT Powerhouse, Southern Powerhouse and Garage and at the area of ash uncovered north of the buried barrels along the beach.

One soil sample collected from a test pit at the southern powerhouse and garage was submitted for laboratory analysis of PCBs. PCBs were not detected in the soil sample submitted for analysis. The 5 samples analyzed for PCBs during the 2008 Phase III ESA did not contain detectable concentrations of PCBs.

Two areas of significant hydrocarbon impacts (“hot spots”) were identified during the field program. One was the area of buried burnt debris located along the pathway east of the DOT Post Office which contained a heavy hydrocarbon sheen. The second area was at the southwest corner of the Site Dump where waste sludge, likely from a drum, had spilled onto the ground. Because these two areas of the Site contained significant product, the areas should be remediated and are included in the volume estimates identified below.

The HHERA calculated SSTLs for all contaminants of concern (COC) for which an unacceptable human health or ecological risk were identified including, aluminum, lead, PHC fractions F1 to F3, copper and nickel. After comparison of the soil results to the calculated SSTLs, 18 soil samples exceed the SSTLs for PHC Fractions F1, F2 and/or F3 (TP2-M-2, TP3.5-E-3, TP3.5-F-2, TP4-L-4, TP5-L-2, TP5.5-MN-5, TP6.5-MN-2, SS10-1, FD-TP2-SA3, WPH-TP1-SA2, WPH-TP2-SA4, FT-TP2-SA2, HGB2-TP1-SA2, R-TP1-SA2, SD-TP2-SA1, SW-TP1-SA3, WH-TP2-SA3 and WH-TP5-SA2) and 5 soil samples exceed the SSTLs for metals (TP7-MN-1 and TP7-MN-2 for aluminum and TP6.5-FG-1, TP12.5-E-1, and HGB3-TP-SA1 for lead). These results are summarized as follows:

- Soil hydrocarbon impacts in excess of the SSTLs exist at several areas across the Main Site including throughout the DOT portion of the Main Site (Fuel Tanks, spillways down-gradient of HGB1 and HGB2, Radiosonde, Washhouse, and Powerhouse), and at the Site Dump, and Southern Powerhouse and Garage.
- Soil metals impacts in excess of the SSTLs exist at several areas across the Site including the DOT HGB3 spillway, a portion of the main spillway immediately downgradient of DOT HGB1, and two locations of surficial debris located at the residential plateau.

Groundwater

A total of 9 drive-point groundwater (melt water) samples were submitted for analysis of BTEX and PHC fraction F1. Five (5) drive-point samples were also submitted for analysis of PHC fraction F2. BTEX and PHC fractions F1 and F2 were either not detected or were detected at concentrations below the screening criteria in all samples. All melt water samples collected during the test-pitting in 2008 contained concentrations of PHCs in excess of the screening criteria.

Five groundwater samples were submitted for laboratory analysis of dissolved or total metals. In all 5 samples, concentrations of one or more of aluminum, arsenic, chromium, copper, iron, lead, manganese, nickel, thallium and zinc exceeded the screening criteria. All groundwater samples collected the test pits in 2008 contained concentrations of one or more metals parameters that exceeded the screening criteria.

Groundwater remediation will be required during the site remediation (excavation water) and quality should be re-assessed following soil remediation (i.e. source removal) to establish post remediation contaminant concentrations.

Surface Water

A total of 7 surface water samples collected from across the Site were submitted for laboratory analysis of BTEX and PHC fractions F1 and F2. BTEX and PHC fractions F1 and F2 were either not detected or were detected at concentrations below the screening criteria in all samples.

A total of 7 surface water samples collected from across the Site were submitted for laboratory analysis of total metals. Metals parameters were either not detected or were detected at concentrations below the screening criteria in three samples collected from Creek 1.
The concentration of copper exceeded the screening criteria in the samples collected from Creek 2 and 3. In the remaining two samples collected on the Site (CW-4 collected from the drainage path running through the DOT portion of the Main Site and SW-DUMP collected from the ponded water in the Site Dump), concentrations of one or more of aluminum, antimony, arsenic, copper, iron, lead, manganese, nickel, thallium, uranium and zinc exceeded the applicable screening criteria

A total of 6 surface water samples collected from across the Site were submitted for laboratory analysis of general chemistry parameters. Five (5) of the samples exhibited concentrations of one or more of total dissolved solids (TDS), ammonia, color, pH, and sodium in excess of the applicable screening criteria.

A total of 5 surface water samples collected from across the Site were submitted for laboratory analysis of PAHs. In 4 of the 5 samples, PAHs were not detected and therefore met the screening criteria. In the remaining sample, detected concentrations of naphthalene and pyrene exceeded the screening criteria.

Surface water samples CW-4 and SW-DUMP are located in areas which will require remediation. A post-remediation assessment of the surface water quality in these areas would be required to determine future treatment requirements.

Sediment

A total of 11 sediment samples collected from across the Site were submitted for laboratory analysis of BTEX, PHC fractions F1 to F4, PAHs and metals. In all 11 samples, BTEX, PHC fractions F1 to F4, PAHs and metals were either not detected or were detected at concentrations below the screening criteria.

Drum Contents

Samples of contents from 7 drum were collected and submitted for analyses of PCBs; total and absorbable organic halogens; total and dissolved cadmium, chromium and lead; flashpoint; and, ash content. The results of the analysis of drum samples indicate that concentrations of total and absorbable organic halogens; dissolved chromium; dissolved cadmium; and, dissolved lead were either not detected or were detected at concentrations below the screening criteria. Concentrations of PCBs were not detected in the 7 drum samples. With the exception of sample DRUM-3, the ash contents detected in the samples collected were below the screening criteria.

Waste Characterization

Four samples of waste materials were collected and submitted for waste characterization analysis to determine the suitability of the wastes for disposal.

Hazardous and Non – Hazardous Wastes

During the 2010 field program, hazardous and non-hazardous waste, petroleum product waste, and special wastes were re-assessed as compared to the quantities identified during the 2008 field program. No additional waste appears to have been added to the Site since the 2008 study and the volume of petroleum waste has been reduced.

Conclusions

Analysis and interpretation of data collected during the 2010 Site visit and subsequent laboratory analytical reports, completion of the HHERA and review of the results of the 2008 site investigation have resulted in the identification of the following contaminants and wastes present on-site:

- 575 m^3 of impacted soil containing concentrations of metals in excess of the SSTLs
- 4,900 m^3 of impacted soil containing concentrations of petroleum hydrocarbons in excess of the SSTLs

- 640 m^3 of surficial soil containing significant petroleum hydrocarbon or aluminum staining
- 17 m^3 of hazardous wastes
- 187 m^3 of special wastes
- 1,254 m^3 of non-hazardous wastes
- 1,854 litres of waste petroleum products.

The statements made in this Executive Summary text are subject to the limitations included in Section 11, and are to be read in conjunction with the remainder of this report.

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1 INTRODUCTION

Nunami Stantec Limited (NSL) was retained by the Department of Community and Government Services (CGS) of the Government of Nunavut (GN) to conduct a Supplemental Phase III Environmental Site Assessment (ESA) and a Human Health and Ecological Risk Assessment (HHERA) for the Old Town Site in Clyde River, Nunavut (NU). The work was completed in accordance with the proposal dated April 8, 2010 titled "*Remediation of Old Town Site, Clyde River, Nunavut*".

This report is organized in twelve sections. Section 1 presents an introduction and the purpose of the assessment. Section 2 provides background information for the Site. Section 3 presents a summary review of previous work completed at the Site. Section 4 explains the regulatory guidelines and their applicability. Section 5 documents the methodologies used to conduct the Site investigation. Section 6 presents the results of the site assessment. Section 7 discusses the Quality Assurance/Quality Control (QA/QC) program. Section 8 presents the summary findings from the HHERA. Section 9 presents a discussion of the results of the investigation. Section 10 outlines the conclusions of the investigation while Section 11 includes the report closure. Finally, section 12 includes references. Supporting information is provided in the appendices. The HHERA is provided under separate cover.

1.1 Objectives

The objectives of this project were to complete delineation of on-site contamination and wastes. The HHERA was prepared to inform the analysis of contamination presented in this report.

1.2 Scope of Work

The field portion of the site assessment was completed by Melissa Nicholson, Patricia Coyne, Maurice Romanick, Rob McCullough and Jared Saunders of NSL during the period from August 3rd and 18th, 2010. The scope of this Supplemental Phase III ESA consisted of the following:

- Background information review
- Data gap analyses of the available background information
- Geophysical survey to identify/confirm the presence of buried material present on-site
- Excavation of test pits to delineate the extent of contaminated soils previously detected on-site
- Confirmation of the presence/absence of impacted groundwater (melt water) through installation and sampling of drive-point monitor wells across the Site
- Assessment of the presence/absence of impacts to surface water
- Assessment of the presence/absence of impacts to sediment
- Analyses of select samples for previously identified contaminants of concern (COCs) by an accredited laboratory

- Interpretation of information gathered, including the comparison of analytical results to applicable regulatory screening criteria
- Confirmation of waste inventories previously completed on-site
- Completion of a HHERA, (provided under separate cover)]
- Presentation of this information in a structured report documenting the work completed and appropriate conclusions.

This report includes information gathered during the background information review, the results of the intrusive investigation, a detailed waste inventory, discusses the findings of the HHERA and provides conclusions for the Site.

2 BACKGROUND

2.1 General

The community of Clyde River was originally established on the east side of Patricia Bay, approximately 5 km east of the present day community. A general site location plan is provided on Figure 1, **Appendix A**. Known locally as “Old Town”, the original settlement was occupied from 1923 until 1970 when residents were moved to the current community. The Old Town formerly included a weather station, school, electrical generating plants and residences. Residents of Clyde River currently camp in the Old Town area during summer and collect drinking water from streams running through the area. The general layout of the Site is presented on the site plan (Drawing 123600017-1, **Appendix A).**

2.2 Geology

Based on surficial geology information available for the Site, soils consist of mainly glacial deposits partially reworked by fluvial, lacustrine, marine and frost action. Regionally, the bedrock in Clyde River or more generally central and northern Baffin Island is comprised of Archean aged Mary River Group rock underlain by Archean aged basement orthogneiss units of the Rae Craton. Bedrock was not encountered in the test pits excavated on-site but does outcrop to the north, south and west. It is anticipated that the bedrock layer will be found at a shallow depth and in some areas on-site the bedrock surface may be encountered once excavation to depth is completed. Clyde River is in the zone of continuous permafrost.

2.3 Topography and Drainage

The Site is located on a hillside with an average grade of approximately 6% sloping from east to west towards Patricia Bay. The Site is located at sea level at the beach areas and extends to the east to a height of approximately 20 m above sea level in the area of the Site Dump. Based on local topography, regional surface drainage (anticipated groundwater flow direction) appears to be to the west towards Patricia Bay, located immediately adjacent to the Site.

No engineered controls for drainage or runoff were observed at the Site. Several natural drainage channels were observed flowing east to west. Precipitation at the Site would tend to runoff via overland flow or be absorbed by infiltration into the surface soils. Perched groundwater (melt water) located above permafrost was encountered at several locations.

Three cross section of the Site through lines “E”, “L” and “N” have been presented on Drawing 123600017-4, **Appendix A** and indicate the surficial profile and approximate permafrost level through the test pits on each of those lines.

2.4 Site Description

The Old Town Site consists of several remaining building foundations and footprints, four bulk fuel aboveground storage tanks (ASTs) and several dumping sites for hazardous and non-hazardous waste. The area surrounding the Old Town Site is undeveloped. The Site is divided into key areas including the Hudson Bay Company (HBC) Area, the Department of Transportation (DOT) Area, the Site Dump, the Fuel Dump, and other areas (including the Southern Powerhouse and Garage, Residential Plateau, the Extreme South Beach Dump, the Beach Dump (north of the Main Site) and the structure southeast of the Beach Dump). Two graves are also located on the Site. Remaining features from the former town are presented on Drawing 123600017-1, **Appendix A.**

3 DOCUMENT REVIEW

3.1 Previous Environmental Reports

A review of previous environmental reports to identify Site conditions and data gaps was completed. Each of the five reports reviewed are summarized below.

Environmental Sciences Group - Royal Military College. 1997. "*An Environmental Assessment of the Former Site of the Town of Clyde River, NWT*".

The Environmental Sciences Group (ESG) of the Royal Military College conducted an environmental investigation of the Clyde River Old Town Site in the late 1990s. The three key objectives for the project were to identify the extent of contamination at the Site, assess its impact on the environment, and to identify cleanup strategies. During the field work component a total of 105 soil, four insulation, one paint, and four water samples were collected and submitted for analysis of several parameters including total petroleum hydrocarbons (TPH), metals and polychlorinated biphenyls (PCBs). The results were compared to Distant Early Warning (DEW) Line Clean-up Criteria. The results indicated that no PCBs exceeding the applicable guidelines were detected at the Site. Elevated concentrations of TPH were identified in stained soil areas on the beach on the west side of the Site. Other concerns identified included the presence of non hazardous and hazardous debris scattered throughout the Site.

Jacques Whitford Limited. 2004. "*Old Town Clyde River Site Visit and Assessment of Current Conditions*". Prepared for the GN Department of Community and Government Services.

Jacques Whitford was contracted by CGS in 2003 to complete an engineered design for the decommissioning and restoration of the Old Town Site. Jacques Whitford completed a site visit in the fall of 2003 to determine volumes of hazardous and non-hazardous materials and delineate the extent of contaminated soils present. The January 2004 report provides a synopsis of the activities of the fall 2003 site visit.

Due to weather constraints, Jacques Whitford was unable to delineate the areas of contaminated soil at the Site. However, a large amount of the hazardous and non-hazardous waste was quantified. Jacques Whitford estimated that approximately 1,400 m^3 of non-hazardous waste; 300 m^3 of metal contaminated and 260 m^3 of PHC contaminated soil were present on-site. The hazardous waste present on the Site was believed to be limited to asbestos containing materials [ACMs, (approximately 35 m^3)], batteries (approximately 5 m^3), sludge inside of the DOT Fuel Tanks (approximately 4 m^3) and petroleum based liquids in 23 drums (205 L) on-site.

Jacques Whitford Limited. 2004. "*Government of Nunavut Conceptual Remediation Plan, Old Town Clyde River, Clyde River, Nunavut*". Prepared for the GN Department of Community and Government Services.

As part of the 2003 program, Jacques Whitford examined several remedial options and provided conceptual remedial recommendations for the Site. The report concluded that domestic waste (comprising of the non-hazardous waste) should be disposed of at the Clyde River Landfill. Liquid

petroleum products would be incinerated in a waste oil burner in Clyde River and petroleum hydrocarbon impacted soils would be placed in a containment cell constructed at the community landfill. Special wastes including the ACMs, metal contaminated soils, and electrical equipment would also be placed in the containment cell. All hazardous wastes (including two drums of ethylene glycol and PCB liquids) would be transported to the south for disposal.

Jacques Whitford concluded that additional assessment activities (i.e., a Phase III ESA) would be required to confirm waste quantities present at the Site.

Nunami Jacques Whitford Limited. 2009. "*Phase III Environmental Site Assessment, Old Town Clyde River, Clyde River, Nunavut*". Prepared for the GN Department of Community and Government Services.

Nunami Jacques Whitford was contracted by CGS in 2008 to conduct a Phase III ESA at the Old Town Site. Nunami Jacques Whitford completed a site visit in the summer of 2008 to confirm volumes of hazardous and non-hazardous materials and to delineate the extent of contaminated soils present. An updated Remedial Action Plan (RAP) was also completed in conjunction with the Phase III ESA as a standalone document (summarized below).

The Phase III ESA included the excavation of 42 test pits across the Site. The test pits were excavated by hand in the main areas of concern to the depth where effective refusal or significant groundwater influx occurred. Without the aid of mechanical equipment, many of the areas of impact were not able to be delineated vertically or horizontally. Of the 114 soil samples and 5 melt water samples collected during the investigation, 22 soil samples and 5 melt water samples were submitted for laboratory analysis of the on-site COCs including petroleum hydrocarbons (PHCs), metals, PCBs and polycyclic aromatic hydrocarbons (PAHs). One (1) insulation, one shingle, 4 paint, one drywall/particle board and 6 floor tile samples were collected and submitted for analysis of lead, mercury, asbestos containing materials (ACMs), PCBs and/or PHCs.

The results indicated that PHC impacted soil was present at several areas of the Site including the DOT Powerhouse, DOT Fuel Tanks, Hydrogen Generating Building #2, DOT Radiosonde, DOT Spillway, DOT Washhouse, Site Dump and Fuel Dump. In addition, PHC impacted melt water was identified at the Radiosonde, Spillway, Powerhouse and Fuel Dump. Metals impacted soil was identified at the DOT Hydrogen Generating Building #3 and metals impacted melt water was identified at the Radiosonde, Spillway and Powerhouse. PAH impacted soil was also identified at the Radiosonde, Spillway and Powerhouse. Because the identified soil and melt water impacts were not fully delineated, volumes of contaminated soil and melt water could not be accurately calculated. However, the hazardous and non-hazardous waste quantities were confirmed during the 2008 field program.

Nunami Jacques Whitford recommended that additional delineation of identified impacted soil and melt water be conducted prior to or in conjunction with future remedial activities. An HHERA was also recommended to assess risks posed to human and ecological receptors at the Site.

Nunami Jacques Whitford Limited. 2009. "*Remedial Action Plan, Old Town Site, Clyde River, Nunavut*". Prepared for the GN Department of Community and Government Services.

Following completion of the Phase III ESA in 2008, Nunami Jacques Whitford was requested by CGS to complete a Remedial Action Plan (RAP) for the Old Town Site. The purpose of this RAP is to identify potential remedial alternatives, evaluate remediation options and provide recommendations for remediation. Remedial options were developed for each waste stream and the potential risks, advantages and disadvantages of each option were examined.

The RAP was based on removing contaminants in excess of applicable guidelines and removing risks to public safety. Existing guidelines are conservative as they are based on generic site conditions, exposure pathways and receptors. An HHERA which would evaluate site specific contaminant levels, exposure pathways and receptors to determine risk level and could be used to establish Site Specific Threshold Levels (SSTLs) which may be less stringent than the existing guidelines was recommended. Remedial options and recommendations were offered for each waste stream found on-site, including: hazardous and non- hazardous waste, special wastes, contaminated soils and contaminated water. Remediation would involve a combination of on-site treatment, disposal in the municipal landfill and shipment of hazardous wastes to disposal facilities in southern Canada.

The draft RAP received support during a public meeting in the community in June 2009, attended by Nunami Jacques Whitford and CGS.

4 REGULATORY FRAMEWORK

The assessment and remediation of the Old Town Site is under the jurisdiction of the GNs Department of Environment.

The current assessment has included the collection of samples from various environmental media including soil, sediment, surface water and groundwater; and, analytical testing for a range of contaminant parameters (PHCs, metals, PAHs, etc).

For the purposes of evaluating soil quality, the GN has adopted the Canadian Council of the Minister of the Environment (CCME) Canadian Soil Quality Guidelines (CSQGs) and the Canada Wide Standards for Petroleum Hydrocarbons in Soil (CWS PHC).

Where the GN has not established guidelines for any other environmental media, NSL has screened the data using other applicable guidelines from the CCME, where available. In cases where CCME guidelines do not exist, NSL has used environmental quality guidelines and standards from other Canadian and international jurisdictions.

Table 4.1 below provides a summary of the guidelines / criteria / standards used during the Supplemental Phase III ESA program. The following sections provide details on the guidelines which have been used to screen each of the environmental media at the Site.

Table 4.1: Regulatory Framework Matrix

Sample Type	Parameter	Regulatory Criteria								
		GN Guidelines	CCME CSQGs	CCME CWS	CCME CWQG (FAL & MAL)	CCME CSQG (PELs) (FAL and MAL)	GCDWQs	AENV Tier 2 Guidelines	Oakridge Guidelines	GNWT Used Oil and Waste Fuel Guidelines
Soil	Benzene, Toluene, Ethylbenzene and Xylenes	✓	✓[1]							
	Petroleum Hydrocarbons F1 to F4	✓		✓						
	Metals	✓	✓							
	Polycyclic Aromatic Hydrocarbons (PAHs)	✓	✓[2]							
	Polychlorinated Biphenyl's (PCBs)	✓	✓					✓[3]		
	pH	✓	✓							
Groundwater / Meltwater/ Surface Water	Benzene, Toluene, Ethyl benzene				✓		✓[4]			
	Xylenes						✓[4]	✓[5]		
	Petroleum Hydrocarbon (Fractions F1 – F2)							✓[5]		
	Total and Dissolved Metals				✓		✓[4]			
	General Chemistry				✓		✓[4]			
	PAHs				✓		✓[4]			
	PCBs									
Sediment	Benzene, Toluene, Ethylbenzene and Xylenes		✓						✓[6]	
	Petroleum Hydrocarbon (F1 to F4)			✓						
	Metals		✓[7]			✓				
	PAHs		✓[7]			✓				
Fuel / Waste Oil	Cd, Cr, Pb, Total Organic Halogens, PCBs, Flashpoint									✓

NOTE:
GN Guidelines = Environmental Guideline for Contaminated Site Remediation (March 2009).
CCME CSQGs = Canadian Council of the Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999, last update 2007).
CCME CWS = Canadian Council of the Ministers of the Environment Canada Wide Standards for Petroleum Hydrocarbons in Soil (2008), Tier 2 Pathway Specific Guidelines.
CCME CWQG FAL = Canadian Council of the Ministers of the Environment Canadian Water Quality Guidelines for the Protection of Freshwater Aquatic Life (1999, last update 2007).
CCME CWQG MAL = Canadian Council of the Ministers of the Environment Canadian Water Quality Guidelines for the Protection of Marine Aquatic Life (1999, last update 2007).
CCME CSQG (PELs) = Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (1999; last update 2002); Probable Effect Levels (PELs)
GCDWQs = Health Canada Guidelines for Canadian Drinking Water Quality, May 2008
AENV Tier 2 Guidelines – Alberta Environment Tier 2 Guidelines (2009).
Oakridge Guidelines = Sediment Quality Guidelines, 1997

1. Pathway specific (soil ingestion and eco soil contact) CCME CSQGs were used for comparison of BTEX concentrations in soil.
2. Guidelines (soil ingestion and eco soil contact pathways) were obtained from the CCME CSQGs Factsheet for Polycyclic Aromatic Hydrocarbons, 2010.
3. Alberta Tier 2 Guidelines for Ecological Health were presented for Total PCBs in the absence of CCME guidelines for Ecological Health.
4. Health Canada GCDWQ were used where no CCME Human Health guidelines were available.
5. AENV Tier 2 Guidelines used in the absence of CCME CWQGs and/or GCDWQGs
6. Oakridge Guidelines were used in the absence of CCME Ecological guidelines
7. CCME Soil Guidelines used for Human Health and Sediment Guidelines used for Ecological Health

4.1 Soil

The Environmental Guideline for Site Remediation (GN Guidelines) was issued under the authority of the territorial *Environmental Protection Act* (EPA) in 2002 and was last updated in March, 2009. The guideline contains remediation standards for soil including benzene, toluene, ethyl benzene, xylenes, PHCs F1 to F4, metals, PAHs and PCBs. Guidelines are provided for each of four CCME defined land uses including agricultural, residential/parkland, commercial and industrial.

The GN guidelines are based on both ecological and human health effects. Where both values are available, the GN selects the lower value as the final recommended guideline. In cases where no GN Guidelines are available (e.g. ecological guideline for PCBs), the Alberta Environment Soil Remediation Guidelines have been used (AENV, 2009).

Based on the current land use at the Site, NSL has screened the soil data using the guidelines for a residential/parkland site with coarse-grained soil.

4.2 Surface Water and Groundwater (melt water)

The CCME Canadian Water Quality Guidelines (CWQGs) for the Protection Aquatic Life (1999, updated 2007) are risk-based, and are typically used as a preliminary means of evaluating surface water. Given the Site location (bordered by a marine ecosystem with several potable creeks distributed throughout the Site) concentrations of benzene, toluene, ethyl-benzene, metals, general chemistry and PAHs present in surface water have been compared to the CWQGs for the Protection of Aquatic Life considering both freshwater and marine environments.

The CCME CWQGs for the Protection Aquatic Life have also used as a preliminary means of evaluating groundwater (or melt water) where sample locations are near a perennial surface water body and have been developed for both freshwater and marine receptors.

As noted above, existing surface water quality guidelines are based on protection of freshwater or marine aquatic life, rather than human health. It is understood that surface water at the Site is used as a drinking water source for campers (mainly Creek 1). In the absence of human health based guidelines for exposure to surface water, the Guidelines for Canadian Drinking Water Quality (GCDWQ), Health Canada, 2008, have been used to evaluate surface water and groundwater (melt water) at the Site. Health Canada has published Guidelines for Canadian Drinking Water Quality (GCDWQ) since 1968. The guidelines are prepared by the Federal-Provincial-Territorial Committee on Drinking Water; the Committee is made up of representatives from each province and territory, as well as from Health Canada. The guidelines are updated periodically; the guidelines presented in this document are from the most recent version (May, 2008). Guidelines are presented as either maximum acceptable concentrations (MAC), interim maximum acceptable concentrations (IMAC) or aesthetic objectives (AO). In general, parameters with an aesthetic objective do not pose a health risk, but rather, may impart an objectionable taste or odour to drinking water above a certain concentration.

In cases where no CCME or Health Canada Guidelines are available (xylenes and PHC fractions F1 and F2) Alberta Environment Groundwater Remediation Guidelines have been used (AENV, 2009).

4.3 Sediment

The hierarchy used for the selection of ecological health based environmental quality standards for sediment (freshwater and marine) is as follows:

- Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (CCME, 2002).
- Suter et al 1996 Toxicological Screening Benchmarks for Sediment and Aquatic Biota Oakridge National Lab
- Atlantic Eco-Risk Based Corrective Action Guidelines, Draft 2010.

At most sites however, sediment contamination is largely an ecological concern. At the present time, there are no human health based guidelines for sediment exposure, although it is recognized that Health Canada is presently exploring the potential need for human health-based sediment quality guidelines, and possible derivation approaches. Given the absence of human health based guidelines for sediment, human health based standards for soil (ingestion pathway only) are used to screen potential contaminants of concern in sediment.

4.4 Used Oil and Waste Fuel Management Guidelines

The GN does not currently have guidelines or regulations addressing the storage and disposal of used oil and/or waste fuel products, such as those found in storage vessels on-site. As such, analysis of drum content samples collected on site are compared with the Government of the Northwest Territories' *Used Oil and Waste Fuel Management Regulations*, issued under authority of the NWT *Environmental Protection Act.* Waste fuels complying with Schedule A of the regulation, outlining the maximum concentrations of impurities (Lead, PCBs, Total Organic Halogens, % Ash Content, Chromium and Cadmium) can be incinerated in an approved incinerator. Waste fuels with concentrations of substances in excess of those specified in Schedule A must be transported to an approved off-site disposal facility.

5 SITE INVESTIGATION

The site assessment was completed from August 3rd to 18th, 2010 by Melissa Nicholson, Patricia Coyne, Maurice Romanick, Rob McCullough and Jared Saunders of NSL.

5.1 Site Overview

The 2010 Phase III ESA field program included the excavation of test pits at various locations to facilitate the collection of soil samples. In addition, groundwater, surface water, sediment, drum and waste samples were also collected to further investigate the identified areas of concern and/or to identify disposal requirements for hazardous materials.

Upon arrival at the Site, the NSL field crew conducted a site overview to confirm areas of concern identified during the previous environmental investigations and identify any additional areas of concern. To complement our site overview, a local elder accompanied NSL to identify areas of cultural / historical importance, including several un-marked graves.

The following findings were made during the site overview:

- Two areas of un-marked graves were identified, including one south of the Fuel Dump, and one southeast of Creek 3
- Several additional areas of surficial and partially buried debris were identified (including several areas located between the Fuel Dump and the Extreme South Beach Dump; and others located in the Residential Plateau area)
- One burn pile was observed adjacent to the concrete block located north of Creek 2. The burn pile included glass, batteries, molten metal and other charred waste. The concrete block adjacent to this area appeared heavily stained
- Six drums (205 L) containing waste oil product were observed in the vicinity of the Site Dump
- The areas of significant surficial staining (aluminum powder in the area of the former DOT Hydrogen Generating Buildings, and petroleum hydrocarbon staining west of the DOT Powerhouse and intermittently throughout the Fuel Dump area) were confirmed.

The location of the un-marked graves and the identified areas of surficial debris and staining were recorded during the GPS survey and are provided on Drawing 123600017-1, **Appendix A**. Photographs are provided in **Appendix B**.

5.2 Geophysical Investigation

As part of the supplemental assessment of the Old Town Site, a geophysical survey was carried out at selected areas on the Site. The work was proposed based on anecdotal evidence from elders in the community about areas of buried debris on Site. Visual observations of the areas during the 2008 Phase III ESA did not reveal obvious buried material and a method to investigate the subsurface was proposed. To that end multiView Locates Inc. from Mississauga, Ontario were

retained to carry out a limited geophysics program on the Site to determine the presence/absence of buried material in the 3 outer areas noted by the elders and in the Main Site area itself.
An electromagnetic survey (apparent conductivity and in-phase) was conducted across the Site in four locations:

- Area 1 - The area surrounding the main Site Dump
- Area 2 - North-east of the fuel tank area, north of Area 1
- Area 3 – 1 km south of Main Site area referred to as the Extreme South Beach Dump
- Area 4 – Main Site area or abandoned hamlet portion of the Site.

The results of the electromagnetic survey are shown on the figures included in the geophysical report in **Appendix C**. The figures have been incorporated onto NSL's site plan and are presented as Drawings 123600017-5 and 123600017-6, **Appendix A**.The figures display the color contoured apparent conductivity data and in-phase data. In the data sets, background electromagnetic values are denoted by the green to yellow-green color contours while elevated responses are denoted by orange, red or deep blue color contours. These data sets were analyzed on-site and compared to site conditions and surface features. Any elevated reading or target that was determined not to be caused by a surface feature was determined to be an anomaly.

Results of the survey indicate that no anomalies were detected in Area 1, Area 2 and Area 3. Elevated readings in these areas were determined to be caused by surface features and to a lesser extent, salt content in the soil (beach) and the varying depth to the permafrost layer. Area 4 indicated only one linear anomaly which was later determined to be a buried series of heavy gauge copper wires running between the former DOT Radiosonde structure and the DOT Power House.

5.3 Test Pit Program

In order to capture the widespread impacts previously identified, NSL completed a test-pitting program utilizing a 30 m grid extending throughout the central portion of the Site (referred to as the Main Site-north of Creek #1) and in the vicinity of the Fuel Dump (immediately south of the Main Site along the beach). The test pits were labeled using south to north grid line references (B thru P) and west to east grid line references (0.5 to 13). Test pits were generally excavated to the depth where frozen soil was encountered. Soil samples collected from each test pit were field screened for headspace vapour concentrations. The results of the vapour screening, along with observations made during the test-pitting and historical environmental findings, were utilized to determine areas of additional test pits to ensure horizontal delineation was achieved.

Due to the size of the Site, not all areas were assessed using the 30 m grid. In some areas (including the Upper Residential Plateau Area, the Beach Dump and the Extreme South Beach Dump), test pits were advanced in identified areas of environmental concern.

Several additional areas of concern were identified during the test pit program. These areas included:

- An area of buried burnt debris, including a heavy hydrocarbon sheen on the groundwater, was uncovered along the pathway east of the DOT Post Office during the test pit program
- Several buried drums were removed along the beach (northwest of the DOT Garage [1966]). The drums were found to be mostly empty with the exception of two of the drums that were found to contain rust colored oily water
- An area containing an ash material was uncovered during testpitting north of the former DOT Garage (1966).

One hundred and thirty four (134) test pits were excavated on-site. Test pit logs are provided in **Appendix D**. A description of the test pitting location rationale is provided in Table 5.1 in the following section.

Specific information regarding field investigation methodologies is summarized in **Appendix E**.

5.4 Field Investigation and Sample Location Rationale

The field investigation was comprised of the following:

- Collection of 525 soil samples from test pits (named according to test-pit reference grid);
- field screening of soil samples for headspace vapour concentrations;
- Installation of fourteen drive-point monitoring wells (MW1 to MW14)[1];
- Collection of nine (9) groundwater (melt water) samples, including one (1) sample collected during excavation of burnt buried debris east of the DOT Post Office (WS-10-1) and eight (8) from drive-points with sufficient water (MWs1, 3, 5, 7, 11, 12, 13 and 14);
- Collection of seven (7) surface water samples from across the Site and background location. Three of these samples were collected from Creek 1 (CW-1, CW-5 and CW-BG). CW-BG was collected from Creek 1 at the background location up-gradient of the Site. Sample CW-2 was collected from Creek 2 and CW-3 was collected from Creek 3. Sample CW-4 was collected from a drainage path that ran adjacent to the spillway through the middle of the Main Site and SW-DUMP was collected from the ponded water located in the centre of the Site Dump;
- Collection of twelve (12) surface soil samples. Of these samples, six (6) were collected from across the Main Site (SS-10 [from the uncovered area of burried burnt debris], OCR-S1, OCR-SE2, OCR-S9, OCR-S12 and OCR-S20 [collected as part of the HHERA]). Three (3) samples were collected just north of the Main Site from the area of the structure southeast of the beach dump (SE BEACH DUMP-1 to -3) and three (3)

[1] Due to insufficient sample volume in six of the drive points, only eight groundwater samples were able to be collected from the drive points.

were collected from a background location (BCR-S21, BCR-S24 and BCR-S26 as part of the HHERA);

- Collection of 11 sediment samples, including 4 from marine sediment across the Site (SED-1 to SED-4), one from Creek 1 (SED-10), one from Creek 2 (SED-9), one from Creek 3 (SED-8), and four from background locations (SED-BG collected from Creek 1, and SED-5 to SED-7 collected from marine sediment south of the Site);
- Collection of seven (7) drum content samples; three samples (DRUM1 thru DRUM3) obtained from buried drums located in vicinity of TP-BRLBCH and four samples (DRUM4 thru DRUM 7) obtained from drums located in the Site Dump.
- Collection of four (4) waste samples for characterization, including:
    - WASTE-1 - Surficial sample of the white aluminum powder located in the spill way down gradient from HGB1
    - WASTE-2 – Surfical soil sample from the buried burnt debris located along the pathway, east of the DOT Post Office
    - WASTE-3 – Surficial soil sample from the burn pile located north of the concrete block (north of Creek 2)
    - WASTE-4 – Surficial soil sample from the area containing ash material north of the former DOT Garage (1966)
- Confirmation of waste volumes recorded during previous investigations.

All sample locations were recorded by GPS and are illustrated on Drawings 123600017-2 and 123600017-3 provided in **Appendix A**. A description of the test pitting location rationale is provided in Table 5.1 below.

Specific information regarding field investigation methodologies is summarized in **Appendix E**.

Table 5.1: Test Pit Location Rationale.

Grid Line	Parameter	Rationale
B	Metals, PHCs	One test pit (TP5-B) advanced to determine the background concentrations of metals and PHCs.
C / CD	PHCs (all) Metals (all), PAHs (TP9-CD)	Three test pits (TP7-C, TP9-C and TP9-CD) advanced to confirm the presence / absence of potential impacts associated with the burnt garbage debris pile located south of Creek 3.
D	PHCs	One test pit (TP3-D) advanced to confirm the presence / absence of potential impacts associated with the gravel building footprint, located south of Creek 3.
DE	PHCs	One test pit (TP2-DE) advanced to delineate the southern extent of the previously identified impacts at the Fuel Dump.
	PHCs (all) Metals (TP3.5-DE)	Three test pits (TP3-DE, TP3.5-DE and TP4-DE) advanced to delineate the southern extent of the potential impacts associated with the former power house and garage located south of Creek 2.
E	PHCs (all)	Two test pits (TP1.5-E and TP2-E) advanced to delineate the southern extent of impacts previously identified at the Fuel Dump.
	PHCs (all) Metals (TP3.5-E) PAHs (TP3.5-E)	Three test pits (TP3-E, TP3.5-E, TP4-E) advanced to confirm the presence / absence of potential impacts associated with the former power house and garage located south of Creek 2.
	PHCs	One test pit (TP5.5-E) advanced to confirm the presence / absence of impacts associated with the former Hostel.
	PHCs (all) Metals (all)	Two test pits (TP10-E and TP12.5-E) advanced to confirm the presence / absence of potential impacts associated with the former residential plateau debris area located south of Creek 2.
EF	PHCs (all) Metals (TP2-EF) PAHs (TP2-EF) Sub-fractionation (TP2-EF)	Two test pits (TP1.5-EF and TP2-EF) advanced to delineate the southern extent of the previously identified impacts associated with the Fuel Dump.
	PHCs Metals	One test pit (TP8.5-EF) advanced to confirm the presence / absence of potential impacts associated with the former residential plateau debris area located south of Creek 2.

Grid Line	Parameter	Rationale
F	PHCs	One test pit (TP1-F) advanced to vertically delineate the previously identified impacts present at the Fuel Dump.
	PHCs (all) pH (TP2-F)	Two test pits (TP1.5-F and TP2-F) advanced to delineate the eastern extent of the previously identified impacts associated with the Fuel Dump.
	PHCs (all) PAHs (TP3.5-F), PCBs (TP3.5-F) Metals (TP3.5-F) Sub-fractionation (TP3.5-F)	Three test pits (TP3-F, TP3.5-F and TP4-F) advanced to confirm the presence / absence of potential impacts associated with the former powerhouse / garage located south of Creek 2.
FG	PHCs (all)	Two test pits (TP1-FG and TP1.5-FG) advanced to delineate the northern extent of the previously identified impacts associated with the Fuel Dump.
	PHCs (all)	Two test pits (TP3-FG and TP3.5-FG) advanced to delineate the northern extent of potential impacts associated with the former powerhouse / garage located south of Creek 2.
	PHCs (all) Metals (TP6.5-FG)	Two test pits (TP6.5-FG and TP7.5-FG) advanced to confirm the presence / absence of potential impacts associated with surface debris located south of Creek 2.
G	PHCs (all) pH (TP0.5-G)	Two test pits (TP0.5-G and TP1-G) advanced to delineate the northern extent of the previously identified impacts associated with the Fuel Dump.
GH	PHCs	One test pit (TP2-GH) advanced to confirm the presence / absence of potential impacts associated with the HBC residence.
	PHCs (all) Metals (TP3.5-GH), PAHs (TP3.5-GH)	Two test pits (TP3-GH and TP3.5-GH) to confirm the presence / absence of potential impacts associated with the burn pile located in vicinity of the concrete block, north of Creek 2.
H	PHCs	One test pit (TP1-H) advanced to confirm the presence / absence of potential impacts associated with a former structure located northwest of the HBC Residence.
	PHCs	One test pit (TP8-H) advanced to confirm the presence / absence of potential impacts associated with a debris pile located north of Creek 2.
	PHCs (all) Metals (all)	Two test pits (TP7-H and TP10.5-H) advanced to delineate the potential impacts associated with a debris pile located north of Creek 2 (TP10.5-H), and an antennae base located north of Creek 2 (TP7-H)

Grid Line	Parameter	Rationale
I	PHCs	One test pit (TP3.5-I) advanced to delineate the presence / absence of potential impacts near the former medical building, south of Creek 1 (TP3.5-I).
	PHCs Metals (TP9.5-I)	One test pit (TP9.5-I) advanced to delineate the potential impacts associated with a debris pile located north of Creek 2.
J	PHCs, Metals	One test pit (TP1-J) advanced to confirm the presence / absence of potential impacts associated with a drum storage area northwest of the HBC Store.
	PHCs, Metals	One test pit (TP2-J) advanced to confirm the presence / absence of potential impacts associated with the HBC Store.
JK	PHCs (all)	Two test pits (TP4.5-JK and TP5.5-JK) advanced to delineate the southern extent of impacts identified in the vicinity of the DOT Wash House.
K	PHCs (TP2-K, TP3-K, TP4-K, TP5-K, TP6-K) pH (TP5-K-2)	Six test pits (TP2-K thru TP7-K) advanced to delineate the southern extent of impacts located in the vicinity of the DOT Wash House / Radiosonde area.
KL	PHCs (all) Metals (TP3.5-KL) PAHs (TP3.5-KL)	Five test pits (TP3.5-KL, TP4.5-KL, TP5.5-KL, TP6.5-KL, TP7.5-KL) advanced to delineate the extent of impacts located in the vicinity of the DOT Wash House / Radiosonde area.
L	PHCs (all) Metals (TP3-L, TP8-L) PAHs (TP4-L, TP5-L) pH (TP7-L)	Nine test pits (TP1.5-L, TP2-L thru TP9-L) advanced to delineate the previously identified impacts located in the DOT portion of the Main Site.
LM	PHCs (all) Metals (all, except TP3.5-LM)	Five test pits (TP3.5-LM, TP4.5-LM, TP5.5-LM, TP6.5-LM, TP7.5-LM) advanced to delineate the previously identified impacts located in the DOT portion of the Main Site (south of the spill way).
	PHCs (all) Metals (all) pH (TP11.6-LM)	Three test pits (TP11-LM, TP11.6-LM and TP12.3-LM) advanced to delineate the southern extent of the previously identified impacts associated with the Site Dump.

Grid Line	Parameter	Rationale
M	PHCs (all) Metals (TP1.5-M, TP3-M thru TP9-M) PAHs (TP1.5-M) Sub-fractionation (TP1.5-M)	Nine test pits (TP1.5-M, and TP2-M thru TP9-M) advanced to delineate the impacts located in the DOT portion of the Main Site (including the surface staining west of the DOT Powerhouse and the three spillways).
	PHCs, Metals, PAHs	One pit (TP11.6-M) advanced to vertically delineate the previously identified impacts present at the Site Dump.
	PHCs (all) Metals (all)	Two test pits (TP11-M and TP12.3-M) advanced to delineate the northern extent of the previously identified impacts associated with the Site Dump.
MN	PHCs (all, except TP7.5-MN) Metals (TP4.5-MN, TP6.5-MN, TP7-MN, TP7.5-MN) PAHs (TP5.5-MN) pH (TP5.5-MN, TP7-MN)	Seven test pits (TP2.5-MN, TP3.5-MN, TP4.5-MN, TP5.5-MN, TP6.5-MN, TP7-MN, TP7.5-MN) advanced to delineate the impacts located in the DOT portion of the Main Site (including the surface staining west of the DOT Powerhouse and the three spillways).
	PHCs	Two test pits (TP9.5-MN and TP10.5-MN) advanced to delineate the southern extent of the previously identified impacts associated with the DOT Fuel Tanks.
N	PHCs (all, except TP8-N) Metals (TP6-N, TP7-N) PAHs (TP3-N)	Eight test pits (TP1.5-N, TP2-N thru TP8-N) advanced to delineate the northern extent of the previously identified impacts located in the DOT area ((including the surface staining west of the DOT Powerhouse and the main spillway).
	PHCs, Metals, PAHs	One test pit (TP10-N) advanced to vertically delineate the previously identified impacts present at the DOT Fuel Tanks.
	PHCs (all)	Two test pits (TP9-N and TP11-N) advanced to delineate the west and eastern extents of the previously identified impacts associated with the DOT Fuel Tanks.
	PHCs, Metals	One test pit (TP12-N) to horizontally delineate the previously identified impacts associated with the Site Dump.
	Metals	One test pit (TP13-N) as a background test pit location.

Grid Line	Parameter	Rationale
NO	PHCs (all) Metals (TP2.5-NO)	Two test pits (TP2.5-NO and TP3.5-NO) advanced to assess the area surrounding the DOT Garage and delineate impacts identified south of DOT Garage (1966).
	PHCs (all) Metals (all)	Two test pits (TP6.5-NO, TP7.5-NO) advanced to delineate the previously identified impacts located at TP7-N, located north of main spillway.
	PHCs (all)	Two test pits (TP9.5-NO and TP10.5-NO) advanced to delineate the northern extent of the previously identified impacts associated with the DOT Fuel Tanks.
O	Not submitted for analyses	Two test pits (TP1.5-O and TP2-0) advanced to delineate the southern extent of the previously identified impacts associated with the partially buried drums on the beach.
	PHCs	One test pit (TP3-0) advanced to delineate the northern extent of the previously identified impacts associated with the DOT Garage (1966).
	PHCs (TP10-O), pH (TP10-O)	Four test pits (TP9-O thru TP12-0) advanced to delineate the northern extent of the previously identified impacts associated with the DOT Fuel Tanks.
P	PHCs, Metals	One test pit (TP1.5-P) advanced to delineate the northern extent of the previously identified impacts associated with the partially buried drums on the beach.
	PHCs, Metals, PAHs, pH	One test pit (TP2.5-P) advanced to assess the area of ash containing material, north of the former DOT Garage (1966).
Other Test Pits or surface soil samples	Not submitted for analyses	One test pit (TP-BARRELBCH) advanced to vertically delineate the previously identified impacts associated with the partially buried drums on the beach. Soil samples collected from underneath the drums.
	PAHs (all)	Three surface soil samples (SE-BEACHDUMP to SE-BEACHDUMP-3) advanced to confirm the presence / absence of potential impacts associated with the Structure Southeast of Beach Dump.
	PHCs (all) Metals (all)	Four test pits (TP-NBDump-1 thru TP-NBDump-4) advanced to confirm the presence / absence of potential impacts associated with the Beach Dump north of the Main Site.
	PHCs (TP-DUMP-2) Metals (all)	Three test pits (TP-DUMP-1, TP-DUMP-2 and TP-DUMP-5) advanced to confirm the presence / absence of potential impacts associated with small areas of surface debris located south of Creek 3.
	PHCs(TP-DUMP-4) Metals (TP-DUMP-4)	Two test pits (TP-DUMP-3 and TP-DUMP-4) advanced to confirm the presence / absence of potential impacts associated with the Extreme South Beach Dump.
	Metals, PAHs	One surface soil sample (SS10-1), collected after exposing the buried burnt debris, was advanced to confirm the presence / absence of potential impacts associated with the buried burnt debris located along the pathway east of the DOT Post Office.

5.5 Laboratory Analyses

Based on soil vapour screening results, field observations and the findings of previous investigations, select samples were submitted to Maxxam Analytics Ltd. (Maxxam) in Ottawa, Ontario for analysis of one or more of the on-site COCs as summarized in Table 5.2 below:

Table 5.2: Summary of samples collected during the 2010 Phase III ESA Field Program.

Sample Type	Parameters																		
	PHCs (BTEX / F1- F4)	Metals	PAHs	PCBs	pH	PHCs (BTEX / F1-F2)	Metals*	PAHs	General Chemistry	Leachable Metals	Leachable BTEX	Flashpoint	Paint Filter Test	pH	PCBs	Total Organic Halogens	Ash Content	Flashpoint	Cd, Cr, Pb
Soil	132	75	19	1	9														
Sediment	11	11	11																
Groundwater						9	5												
Surface Water						7	7	5	6										
Waste										4	4	4	4	4					
Drum															7	7	7	7	7

NOTE:
* Either total or dissolved metals depending on quantity of water available.

5.6 Waste Inventory

During the 2008 Phase III ESA field program, four main types of waste were noted throughout the Site, including:

- Non-hazardous Waste including construction materials (e.g. wood, concrete, piping, roofing products, machine and equipment parts), miscellaneous metal debris and residential wastes (e.g. cans, wiring, appliances).
- PHC Product Waste including drums of petroleum product waste and four 6,000 L above ground storage tanks (ASTs).
- Hazardous Waste including several drums of waste oil potentially containing ethylene glycol and several potentially PCB bearing capacitors.

- Special Waste including asbestos containing materials [ACMs; including tiles, shingles and insulation], lead contaminated waste (lead based paint constituents), aluminum waste (by-product of the hydrogen generation process), some types of electrical equipment (e.g. batteries, wiring) and sanitary wastes.

As part of the 2010 Phase III ESA field program, NSL conducted a review of the 2008 waste inventory. Upon completion of the review, NSL updated the waste inventory tables.

6 RESULTS

6.1 Stratigraphy

The Site stratigraphy generally consists of a surficial layer of fibrous organic root mat approximately 0.1 m in thickness. The organics were underlain by a relatively thick layer of sand to silty sand with varying amounts of gravel and some cobbles. This layer generally becomes grey in colour and the moisture content increases with depth. The sand to silty-sand layer for the most part extended to permafrost which was encountered at a depth ranging from 0.5 m (in TP's TP7-H, TP4-F, TP10-O and TP11-O) to 1.40 m in TP1.5-EF and TPDump-1. A layer of semi-frozen soil was encountered in most test locations generally 0.1 m above the permanently frozen soil. Bedrock was not encountered in any of the test pits excavated on-site. Refusal on probable boulders was encountered at seven test locations at depths ranging from 0.75 m (TP3-O) to 2.2 m (TP1-FG). Further details regarding the individual stratigraphy encountered at each test location may be found in the Test Pit Logs, **Appendix D**.

6.2 Soil Vapour Concentrations

Field screening for the presence of combustible and ionisable soil vapour concentrations (CSV and ISV) was conducted on all soil samples collected during test-pitting. Specific information regarding the soil vapour screening methodology is included in **Appendix E**.

The soil vapour concentration measured in each of the soil samples is provided on the Test Pit Logs in **Appendix D**. The CSV concentrations measured in the test pit soil samples ranged from 0 ppm_v to 570 ppm_v (in TP3.5-F-2) and the ISV concentrations ranged from 0 ppm_v to 1152 ppm_v (in TP3.5-F-2).

There are no regulatory criteria for combustible or ionisable soil vapours, however, elevated vapour concentrations are generally indicative of the presence of volatile petroleum products (i.e. gasoline, and, to a lesser extent, diesel and fuel oil). Concentrations vary with both hydrocarbon type and age, and it should be noted that the readings are intended as a field screening tool to provide only a qualitative indication of hydrocarbon levels and are not directly equivalent to soil analytical results. For this assessment, ISV concentrations greater than 10 ppm_v and CSV concentrations greater than 100 ppm_v were considered to be elevated and additional test pitting and soil sampling was conducted to delineate areas of the Site that contained ISV or CSV concentrations in excess of these concentrations.

6.3 Analytical Results

6.3.1 Grain-size Testing

As discussed in Section 6.1, the stratigraphy at the Site generally consists of a minor surficial layer of fibrous organics underlain by a relatively thick layer of sand to silty sand with varying amounts of gravel and some cobbles. Six soil samples were submitted for grain size analyses; the laboratory results are presented in Table 6.5 below.

Table 6.5 Grain Size Results

Sample ID	Seive (<0.075 mm) %	Sieve (> 0.075 mm) %	Grain Size
TP1.5-L-3	4.1	96	Coarse
TP4-L-4	20	80	Coarse
TP6-L-2	44	56	Coarse
TP7-K-3	53	47	Fine
TP9-L-3	65	36	Fine
TP11.6-LM-3	72	28	Fine

The results showed that grain size varied widely on-site, ranging from 28 % to 96 % coarse-grained material. Considering the laboratory grain size results and observed on-site soil stratigraphy, NSL has selected the coarse grain size as the predominant soil type on-site. Detailed descriptions of stratigraphy are included on the Test Pit Logs in **Appendix D**.

6.3.2 Soil Analytical Results

6.3.2.1 Petroleum Hydrocarbons

A total of 132 soil samples (131 test pit samples and one surface soil sample) collected from across the Site were submitted for laboratory analysis of BTEX and PHC fractions F1 to F4. In all 132 samples, BTEX and PHC fraction F4 were either not detected or were detected at concentrations below the screening criteria. Concentrations of one or more of PHC fractions F1 to F3 detected in 35 of the 132 samples exceeded the screening criteria as summarized below:

- Concentrations of PHC fraction F1 detected in 4 soil samples (ranging from 240 to 1,400 mg/kg) exceeded the CCME CWS guideline of 210 mg/kg;
- Concentrations of PHC fraction F2 detected in 34 soil samples (ranging from 190 to 17,000 mg/kg) exceeded the CCME CWS guideline of 150 mg/kg; and
- Concentrations of PHC fraction F3 detected in 17 soil samples (ranging from 310 to 22,000 mg/kg) exceeded the CCME CWS guideline of 2,800 mg/kg.

The soil PHC laboratory analytical results are presented in Table G-1 in **Appendix G**. The analytical results from the 2008 Phase III ESA are also included in this table for reference.

Four soil samples were also submitted for PHC sub-fractionation for the HHERA. Results are included in Table G-2 in **Appendix G** and are discussed in the HHERA report.

Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, soil petroleum hydrocarbon impacts in excess of the screening criteria were encountered at several areas across the Main Site including the DOT Fuel Tanks, Site Dump, Spillways down-gradient of HGB1 and HGB2, Radiosonde, Washhouse, DOT Powerhouse,

Southern Powerhouse and Garage, Fuel Dump and at buried barrels along the beach. The areas of soil petroleum hydrocarbon concentrations in excess of the screening criteria are presented in Drawing 123600017-7, **Appendix A**.

6.3.2.2 Metals

A total of 75 soil samples collected from across the Site (66 test pit samples and 6 surface soil samples) and background location (3 surface soil samples) were submitted for laboratory analysis of metals. Concentrations of metals parameters detected in 67 of the analyzed soil samples met the screening criteria. Concentrations of one or more of copper, hexavalent chromium, lead, selenium, silver and zinc exceeded the screening criteria in 8 of the soil samples analyzed as summarized below:

- Concentrations of copper detected in 6 soil samples (ranging from 65 to 230 mg/kg) exceeded the CCME CSQG of 63 mg/kg;
- Concentrations of hexavalent chromium detected in 2 soil samples (both 0.5 mg/kg) exceeded the CCME CSQG of 0.4 mg/kg;
- Concentrations of lead detected in 4 soil samples (ranging from 180 to 1,300 mg/kg) exceeded the CCME CSQG of 140 mg/kg;
- Concentrations of selenium detected in 2 soil samples (1.2 and 2.7 mg/kg) exceeded the CCME CSQG of 1 mg/kg;
- Concentrations of silver detected in 1 soil sample (36 mg/kg) exceeded the CCME CSQG of 20 mg/kg; and
- Concentrations of zinc detected in 4 soil samples (ranging from 210 to 1,500 mg/kg) exceeded the CCME CSQG of 200 mg/kg.

The soil metals laboratory analytical results are presented in Table G-3 in **Appendix G**. The results from the 2008 Phase III ESA are also included in this table for reference.

Nine soil samples were also submitted for pH analysis for the HHERA. Results are included in Table G-4 in **Appendix G** and are discussed in the HHERA report.

Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, soil metals impacts in excess of the screening criteria were encountered at several areas across the Site including the Beach Dump, DOT HGB3 spillway, Site Dump, the location of uncovered buried burnt debris, the area of ash uncovered north of the buried barrels along the beach, and three locations of surficial debris located at the residential plateau. The areas of soil metals concentrations in excess of the screening criteria are presented in Drawing 123600017-7, **Appendix A**.

6.3.2.3 Polycyclic Aromatic Hydrocarbons (PAHs)

A total of 19 soil samples (15 test pit samples and 4 surface soil samples) collected from across the Site were submitted for laboratory analysis of PAHs. Concentrations of PAHs detected in 14 of the

analyzed soil samples met the screening criteria. Concentrations of phenanthrene and/or naphthalene exceeded the screening criteria in 5 of the soil samples analyzed as summarized below:

- Concentrations of phenanthrene detected in 1 soil sample (9.5 mg/kg) exceeded the CCME CSQG of 5 mg/kg
- Concentrations of naphthalene detected in 5 soil samples (ranging from 0.71 to 88 mg/kg) exceeded the CCME CSQG of 0.6 mg/kg.

The soil PAH laboratory analytical results are presented in Table G-5 in **Appendix G**. The historical results from the 2008 Phase III ESA are also included in this table for reference. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, soil PAH impacts in excess of the screening criteria were encountered at several areas across the Main Site including the spillway down-gradient of HGB1, a test pit down-gradient of the Washhouse, Radiosonde, DOT Powerhouse, Southern Powerhouse and Garage and at a test pit north of the DOT Garage (1966) near the ATV trail. The areas of soil PAH concentrations in excess of the screening criteria are presented in Drawing 123600017-7, **Appendix A**.

6.3.2.4 Polychlorinated Biphenyls (PCBs)

One soil sample collected from a test pit at the Southern Powerhouse and Garage was submitted for laboratory analyses of PCBs. PCBs were not detected in the soil sample submitted for analysis.

The soil PCB laboratory analytical results are presented in Table G-6 in **Appendix G**. The results from the 2008 Phase III ESA (PCBs not detected in the 5 soil samples analyzed) are also included in this table for reference. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.3 Groundwater Analytical Results

6.3.3.1 Petroleum Hydrocarbons

A total of 8 groundwater (melt water) samples were obtained from the drive points that contained sufficient water for sample collection (MWs1, 3, 5, 7, 11, 12, 13 and 14). One additional sample (WS-10-1) was collected while excavating an area of buried burnt debris (same location as surface soil sample SS-10). All 9 samples were submitted for analysis of BTEX and PHC fraction F1. Four of the wells and WS-10-1 contained sufficient water to collect a sample for PHC fraction F2 analysis. In all samples, BTEX and PHC fractions F1 and F2 were either not detected or were detected at concentrations below the screening criteria.

The groundwater PHC laboratory analytical results are presented in Table G-7 in **Appendix G**. The results from the 2008 Phase III ESA sample analysis are also included in this table for reference. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

Based on the combined laboratory results and field observations from the 2008 Phase III ESA and 2010 Supplementary Phase III ESA, groundwater PHC impacts in excess of the screening criteria

were encountered at several areas of soil PHC impacts across the Main Site including the spillway down-gradient of HGB1, Radiosonde, Fuel Dump and DOT Powerhouse.

6.3.3.2 Metals

Five groundwater samples were submitted for laboratory analysis of dissolved or total metals. Dissolved metals were analyzed at wells containing enough water for field filtering (MWs7 and 13). Samples that could not be filtered were analyzed for total metals (MWs1, 11 and 14). In all 5 samples, concentrations of one or more of aluminum, arsenic, chromium, copper, iron, lead, manganese, nickel, thallium and zinc exceeded the screening criteria as summarized below:

- Concentrations of total aluminum detected in MWs1, 11 and 14 (ranging from 5,500 to 70,000 µg/L) and dissolved aluminum detected in MW7 (300 µg/L) exceeded the CCME CWQG of 100 µg/L
- Concentrations of total arsenic detected in MW14 (12 µg/L) exceeded the CCME CWQG of 5 µg/L
- Concentrations of total chromium detected in MWs11 and 14 (37 and 110 µg/L) and dissolved chromium detected in MW13 (12 µg/L) exceeded the CCME CWQG of 8.9 µg/L
- Concentrations of total copper detected in MWs1, 11 and 14 (ranging from 110 to 220 µg/L) and dissolved copper detected in MWs 7 and 13 (42 and 58 µg/L) exceeded the CCME CWQG of 2 µg/L
- Concentrations of total iron detected in MWs1, 11 and 14 (ranging from 13,000 to 290,000 µg/L) and dissolved iron detected in MW13 (26,000 µg/L) exceeded the CCME CWQG and GCDWQ of 300 µg/L
- Concentrations of total lead detected in MWs1, 11 and 14 (ranging from 8 to 78 µg/L) and dissolved lead detected in MW7 (4.8 µg/L) exceeded the CCME CWQG of 1 µg/L
- Concentrations of total manganese detected in MWs1, 11 and 14 (ranging from 390 to 3,500 µg/L) and dissolved manganese detected in MWs7 and 13 (580 and 820 µg/L) exceeded the GCDWQ of 50 µg/L
- Concentrations of total nickel detected in MWs1, 11 and 14 (ranging from 33 to 120 µg/L) exceeded the CCME CWQG of 25 µg/L
- Concentrations of total thallium detected in MW14 (1.7 µg/L) exceeded the CCME CWQG of 0.8 µg/L
- Concentrations of total zinc detected in MWs1, 11 and 14 (ranging from 200 to 320 µg/L) and dissolved zinc in MWs7 and 13 (70 and 320 µg/L) exceeded the CCME CWQG of 30 µg/L.

The groundwater metals laboratory analytical results are presented in Table G-8 in **Appendix G**. The results from the 2008 Phase III ESA samples are also included in this table for reference. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.4 Surface Water Analytical Results

6.3.4.1 Petroleum Hydrocarbons

A total of 7 surface water samples collected from across the Site (CW-1 to CW-5 and SW-DUMP) and a background location (CW-BG) were submitted for laboratory analysis of BTEX and PHC fractions F1 and F2. In all 7 samples, BTEX and PHC fractions F1 and F2 were either not detected or were detected at concentrations below the screening criteria.

The surface water PHC laboratory analytical results are presented in Table G-9 in **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.4.2 Metals

A total of 7 surface water samples collected from across the Site (CW-1 to CW-5 and SW-DUMP) and a background location (CW-BG) were submitted for laboratory analysis of total metals. Results are as follows:

- In the 3 samples collected from Creek 1 (CW-BG, CW-1, and CW-5) concentrations of metals parameters were either not detected or were detected at concentrations below the screening criteria
- In the samples collected from Creek 2 and Creek 3 (CW-2 and CW-3) concentrations of metals parameters were below the screening criteria with the exception of concentrations of copper (6 µg/L in CW-2 and 3 µg/L in CW-3) which exceeded the CCME CWQG of 2 µg/L
- In the remaining 2 samples (CW-4 and SW-DUMP) concentrations of one or more of aluminum, antimony, arsenic, copper, iron, lead, manganese, nickel, thallium, uranium and zinc exceeded the applicable screening criteria as follows:
    - Concentrations of aluminum (27,000 µg/L in CW-5 and 16,000 µg/L in SW-DUMP) exceeded the CCME CWQG of 100 µg/L
    - Concentrations of antimony (27 µg/L in SW-DUMP) exceeded the GCDWQ of 6 µg/L
    - Concentrations of arsenic (28 µg/L in CW-5 and 6 µg/L in SW-DUMP) exceeded the CCME CWQG of 5 µg/L
    - Concentrations of copper (420 µg/L in CW-5 and 170 µg/L in SW-DUMP) exceeded the CCME CWQG of 2 µg/L
    - Concentrations of iron (21,000 µg/L in CW-5 and 53,000 µg/L in SW-DUMP) exceeded the CCME CWQG and GCDWQ of 300 µg/L
    - Concentrations of lead (83 µg/L in CW-5 and 830 µg/L in SW-DUMP) exceeded the CCME CWQG of 1 µg/L
    - Concentrations of manganese (350 µg/L in CW-5 and 560 µg/L in SW-DUMP) exceeded the GCDWQ of 50 µg/L

- Concentrations of nickel (65 µg/L in CW-5 and 41 µg/L in SW-DUMP) exceeded the CCME CWQG of 25 µg/L
- Concentrations of thallium (1.1 µg/L in CW-5) exceeded the CCME CWQG of 0.8 µg/L
- Concentrations of uranium (26 µg/L in CW-5) exceeded the GCDWQ of 20 µg/L
- Concentrations of zinc (96 µg/L in CW-5 and 460 µg/L in SW-DUMP) exceeded the CCME CWQG of 30 µg/L.

The surface water total metals laboratory analytical results are presented in Table G-10 in **Appendix G**. The results from the 2008 Phase III ESA sample analysis are also included in this table for reference. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.4.3 General Chemistry

A total of 6 surface water samples collected from across the Site (CW-1 to CW-5) and a background location (CW-BG) were submitted for laboratory analysis of general chemistry parameters. General chemistry parameters (total dissolved solids (TDS), ammonia, color, pH, and sodium) in excess of the screening criteria were identified in all but one of the surface water samples collected. A summary of general chemistry for each sample is provided below. The surface water general chemistry laboratory analytical results are presented in Table G-11 in **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

- **CW-BG** – This sample represents background conditions at the Site. This water is generally described as a very soft (hardness 12 mg/L) and naturally aggressive (pH 6.2, alkalinity 2 mg/L, Langelier calcite Saturation Index -4.6) sodium chloride water type of low dissolved solids (TDS 32 mg/L). All analyzed parameters except naturally low pH meet respective Guidelines for Canadian Drinking Water Quality and Fresh Water Aquatic Life Guidelines.
- **CW-1** – This stream sample closely resembles the background chemistry, with slightly higher sodium, chloride, conductance, TDS, strontium and aluminum. This water is generally described as a very soft (hardness 20 mg/L) and naturally aggressive (pH 6.3, alkalinity 4 mg/L, Langelier calcite Saturation Index -4.2) sodium chloride water type of low dissolved solids (TDS 51 mg/L). All analyzed parameters except naturally low pH meet respective Guidelines for Canadian Drinking Water Quality and Fresh Water Aquatic Life Guidelines.
- **CW-2, CW-3 and CW-5 -** These stream samples are influenced to some degree by the Site, and have higher concentrations of salt, with higher than background concentrations of sodium, chloride, conductance, TDS, aluminum and strontium. This water is generally described as a soft (hardness 27.8 mg/L) and naturally aggressive (mean pH 6.8, mean alkalinity 10 mg/L, mean Langelier calcite Saturation Index -3.1) sodium chloride water type of moderate to low dissolved solids (mean 84.7 mg/L). All analyzed parameters except occasional copper (maximum 6 ug/L) and pH (minimum

6.3) meet respective Guidelines for Canadian Drinking Water Quality and Fresh Water Aquatic Life Guidelines.

- **CW-4** – Located in the middle of the Site, this stream sample is heavily impacted from past Site activities. This water is generally described as a soft (hardness 47 mg/L) and generally alkaline (pH 9.6, alkalinity 678 mg/L, Langelier calcite Saturation Index +1.6) sodium bicarbonate water type of high dissolved solids (TDS 1210 mg/L). Freshwater Aquatic Life Guidelines are exceeded for ammonia, pH, Al, As, Cu, Fe, Pb, Ni, Ta and Zn. Drinking Water Quality Guidelines are exceeded for Na, Color, turbidity, pH and TDS, As, Fe, Pb, Mn and U. This location exhibits detectable PAH (total 4.4 ug/L), with FAL exceedences in naphthalene and pyrene. Significantly higher than background concentrations of sodium, alkalinity, phosphorus, very high pH and aluminum are consistent with the past Site history. The presence of very high iron, total organic carbon, and detectable ammonia nitrogen suggests generally reducing conditions at this location.

6.3.4.4 Polycyclic Aromatic Hydrocarbons (PAHs)

A total of 5 surface water samples collected from across the Site (CW-1 to CW-4) and a background location (CW-BG) were submitted for laboratory analysis of PAHs. In 4 of the 5 samples, PAHs were not detected. In the remaining sample (CW-4), detected concentrations of naphthalene (3.6 µg/L) and pyrene (0.083 µg/L) exceeded the CCME CWQG of 1.1 µg/L and 0.025 µg/L, respectively.

The surface water PAH analytical results are presented in Table G-12 in **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.5 Sediment Analytical Results

6.3.5.1 Petroleum Hydrocarbons

A total of 11 sediment samples collected from across the Site (SED-1 to SED-4 and SED-8 to SED-10) and background locations (SED-BG and SED-5 to SED-7) were submitted for laboratory analysis of BTEX and PHC fractions F1 to F4. In all 11 samples, BTEX and PHC fractions F1 to F4 were either not detected or were detected at concentrations below the screening criteria.

The sediment PHC laboratory analytical results are presented in Table G-13 in **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.5.2 Metals

A total of 11 sediment samples collected from across the Site (SED-1 to SED-4 and SED-8 to SED-10) and background locations (SED-BG and SED-5 to SED-7) were submitted for laboratory analysis of metals. In all 11 samples, metals parameters were either not detected or were detected at concentrations below the screening criteria.

The sediment metals laboratory analytical results are presented in Table G-14 in **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.5.3 Polycyclic Aromatic Hydrocarbons (PAHs)

A total of 11 sediment samples collected from across the Site (SED-1 to SED-4 and SED-8 to SED-10) and background locations (SED-BG and SED-5 to SED-7) were submitted for laboratory analysis of PAHs. In all 11 samples, PAHs were either not detected or were detected at concentrations below the screening criteria.

The sediment PAH laboratory analytical results are presented in Table G-15 in **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.6 Waste Characterization Results

A total of 4 waste samples collected on-site (Waste-1 to Waste-4) were submitted for waste characterization (including Leachable Metals, Leachable BTEX, flashpoint, and pH).

- With the exception of sample Waste-2, the concentrations of leachable metals detected in the samples were either not detected or were below the laboratory detection limit. Concentrations of leachable copper, iron , lead and zinc detected in sample Waste 2 were 15 mg/L, 1 mg/L, 230 mg/L and 36mg/L, respectively.
- Concentrations of leachable BTEX were not detected.
- The flashpoint of each of the four samples was below 75 ºC.
- Each of the four samples passed the paint filter test.
- The soluble pH detected in the samples ranged from 6.33 (Waste-4) to 9.37 (Waste-1).

Analytical results of the waste characterization are provided in Table G-16, **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

6.3.7 Drum Characterization Results

A total of seven drum content samples (DRUM-1 thru DRUM-7) were submitted for analyses of PCBs; total and absorbable organic halogens; total and dissolved cadmium, chromium and lead; flashpoint; and ash content.

- Concentrations of PCBs were not detected in any of the samples. It should be noted that the laboratory detection limit for sample DRUM -5 was greater than the screening criteria
- Concentrations of total and absorbable organic halogens; dissolved chromium; dissolved cadmium; and dissolved lead detected in the drum samples collected were either not detected or were detected at concentrations below the screening criteria.
- With the exception of sample DRUM-3, the ash contents detected in the samples collected were below the applicable criteria.
- Flashpoints of each of the drum samples were greater than 100°C.

Analytical results for drum samples are presented in Table G-17, **Appendix G**. Copies of the laboratory Certificates of Analysis are provided in **Appendix H**.

Due to the range of sample media from waste fuel products, used oil, oily water, etc., sample parameters were adjusted by the laboratory. For samples consisting of oily water, parameters analyzed included: dissolved cadmium, chromium, lead; absorbable organic halogens; flashpoint; and PCBs. For samples containing heavier petroleum products (such as waste oil), parameters analyzed included: dissolved cadmium, chromium and lead; total organic halogens; flashpoint; PCBs; and ash content. While the analyses of the oil and water media are slightly different for some parameters, comparison of results to the NT Used Oil and Waste Fuel Management Regulations is reasonable.

6.4 Waste Inventory

Wastes observed during the Phase III ESA included approximately 1,254 m^3 of non hazardous waste, 1,845 L of petroleum product waste, 187 m^3 of special wastes and 17 m^3 of hazardous waste. Area specific breakdowns of waste (including type and approximate volume) are included in the Waste Inventory in **Appendix F**.

7 QUALITY ASSURANCE / QUALITY CONTROL

The sections below discuss information regarding Quality Assurance/Quality Control (QA/QC) procedures followed during site assessment activities. Laboratory analysis of samples collected during the field program was performed by Maxxam Analytics Ltd. Maxxam is accredited by the Standards Council of Canada for the analysis performed and their methodologies conform to Standard CAN-P-4E (ISO/IEG 17025:2005). A QA/QC review was performed to assess the reliability of the data for the purposes of the site assessment activities. The review consisted of evaluating holding times, blind field duplicate samples, laboratory duplicate samples, trip and field blanks, and general laboratory comments.

7.1 Sample Handling

All samples were collected following NSL sampling procedures. Collected soil, sediment, surface water and melt water samples were placed in laboratory supplied sterile containers and were stored in dedicated coolers and kept cool with ice. Samples were uniquely labeled and control was maintained through the use of chain of custody forms. Appropriate sampling QA/QC procedures were adhered to at all times.

Samples were shipped to Maxxam's laboratory in Mississauga, Ontario. Any testing that could not be conducted at Maxxam's Mississauga laboratory (PAHs, waste and drum sample characterization) was sub-contracted out to other Maxxam laboratories in Nova Scotia and Alberta.

NSL reviewed each of the 27 Laboratory Certificates of Analyses to determine if any issues regarding sample handling were identified. The findings of this review are as follows:

Over temperature

Three soil samples TP3-N-2, TP3-N-2(Lab Dup) and TP10-N-2 exceeded the allowable temperature range, exhibiting an average temperature of 13°C.

Over Hold Time

The following soil samples were submitted for analyses of BTEX/F1-F4 past the respective hold times:

- TP2-M-2, TP4-M-2, TP7-L-4, TP2-K-2, TP3-K-2, TP4-K-2, TP5-K-2 and TP6-K-2
- TP6.5-MN-2 and TP4.5-MN-2 (Due to the delay in analyses, only PHC fractions F2 to F4 were analysed in these two samples).

Silica Gel Clean-up

A review of field observations and laboratory results suggests that some of the PHC concentrations in samples collected from the Site may be attributed to the presence of natural organics such as those found in peat material. To determine if PHC concentrations detected in soil samples were naturally occurring, NSL instructed the laboratory to conduct a triple silica gel clean-up on the following samples:

- TP7-H-1, TP6.5-FG-1, TP5-B-1, DUPF and TP12.5-E-1.

Upon completion of the silica gel cleanup, concentrations of PHCs detected in the above mentioned samples were either less than the laboratory RDL or the screening criteria.

7.2 Field Duplicates

A field duplicate (or blind duplicate) sample is a second sample collected from the same location as an original sample and stored in separate sample containers. The sample is given a different sample name to prevent the laboratory from being aware of its similar origin. The relative percent difference (RPD) is calculated for the results of each field duplicate compared to its original. The RPD for two data points is equal to the Difference divided by the Mean multiplied by 100 percent. The RPD is used to evaluate the representativeness of the sample. There are no firm guidelines for the degree of correlation expected between field duplicates due to natural heterogeneity in soil type (e.g. grain size, clay fraction) and contaminant distribution. NSL currently considers the following acceptable RPDs for laboratory duplicates:

- Soil - 100% for field duplicated soil samples
- Water - 80% for field duplicated water samples.

Due to the variability of RPD at low concentrations, RPD is not considered applicable as a measurement of QA/QC when the concentration of parameters is less than five times the laboratory reportable detection limit (RDL).

Field duplicates of six soil samples were submitted for PHC analyses, six soil samples were submitted for metals analyses and one field duplicate soil sample was submitted for PAH analyses. One field duplicate of the surface water samples were submitted for PHC, RCAP, total metals and PAH analyses. One field duplicate of the sediment samples were submitted for PHC, metals and PAH analyses. The field duplicate samples analyzed are summarized in Table 7.1.

Table 7.1: QA / QC Field Duplicates Summary Information

QA/QC Sample ID	Field Duplicate of Sample	Analyses Completed
Soil		
DUPA	TP10-N-2	PHCs, metals
DUPB	TP2.5-P-2	PHCs, PAHs
DUPC	TP3.5-DE-2	PHCs
DUPD	TP8-H-3	PHCs
DUPE	TP3-E-2	PHCs
DUPF	TP5-B-2	PHCs, metals
DUPH	TP3.5-KL-2	Metals
DUPI	TP-DUMP-4-2	Metals
DUPJ	TP4.5-LM-2	Metals

QA/QC Sample ID	Field Duplicate of Sample	Analyses Completed
Surface Water		
CW-D	CW-1	PHCs, metals (total), RCAP[1], PAHs
Sediment		
SED-D	SED-3	PHCs, metals, PAHs

NOTE:
1. RCAP analyses incorporates general water chemistry parameters.

The laboratory duplicate results agree closely with their corresponding samples for petroleum hydrocarbons in soil. The relative percent difference from the mean for individual parameters analyzed in laboratory duplicates fell within the acceptable ranges. In relation to the screening criteria, all individual parameters in the laboratory duplicates were classified the same (either above or below criteria); with the exception of field duplicate DUPE (original sample TP3-E-2).

With the exception of one set of sample results, the laboratory duplicate results agree closely with their corresponding samples for metals in soil.

The RPDs for all field duplicate soil and water samples were within the acceptable limits with the exception of the following sample sets:

- TP3-E-2 / DUPE - Concentrations of PHCs (F2 fraction) detected in the field duplicate (24 mg/kg) were significantly less than those detected in the original sample (640 mg/kg).
- TP-Dump-4-2 / DUP1 – Concentrations of metals (aluminum, barium, cobalt, manganese, nickel and thallium) detected in the field duplicates were significantly higher than in those detected in the original sample.

NSL suspects that reason for the poor duplicate agreement was due to the samples being non-homogeneous.

Tables G-18 through G-27 in **Appendix G** present RPDs between QA/QC samples (Field Duplicates) and original samples.

7.3 Field Blanks and Trip Blanks

Trip blanks are water samples prepared using distilled water placed in laboratory supplied containers prior to departing for the field investigation. The trip blanks are brought to the Site by the field team for the duration of the assessment. A field blank is similar to a trip blank; however, the sample is not prepared until the field team is on-site and prepared to begin water sampling.

Following the site assessment, the blanks are submitted for laboratory analyses of relevant chemicals of concern. The purpose of the analysis is to determine if samples may have been cross contaminated or the sample integrity otherwise impacted during transport from the lab to the Site (and back) and during sampling activities.

One trip blank and field blank were prepared and analyzed for PHCs (Trip and Field) and metals (Trip).

- Concentrations of PHCs detected in the both blanks were below the laboratory RDL.
- Concentrations of metals detected, with the exception of aluminum, were below the laboratory RDL.

Potential explanations for the presence of aluminum in the sample include cross contamination by the laboratory.

7.4 Laboratory Duplicates

The laboratory analyzes laboratory duplicate samples to implement their own quality control system. A laboratory duplicate sample is a split of a homogenized soil or water sample that is prepared and analyzed following exactly the same procedure as the original sample. The RPD is calculated for the results of the pair of samples. The RPD is used to evaluate the precision of the laboratory analysis.

Maxxam completed the following laboratory duplicate analyses which are included in the analytical tables presented in **Appendix G**:

- Soil – 13 duplicate PHC, one sub-fractionation, five metals, 1 pH and 2 PAH samples;
- Groundwater – one PHC sample;
- Surface water – one PHC, two metals and four general chemistry samples;
- Sediment – one PHC and metals samples; and,
- Waste Characterization – one leachable BTEX sample.

The RPDs calculated for the laboratory duplicate samples were within the acceptable limits with the exception of one sediment duplicate sample (SED-1-Lab-Dup presented in Maxxam report B0B0537) in which the RPD for copper was outside the control limits. However, Maxxam commented that the overall QC for this analysis met the acceptability criteria.

Tables G-1 through G-18, **Appendix G** present RPDs between QA/QC samples (laboratory duplicates) and the original samples.

7.5 Laboratory QA/QC

Each laboratory Certificate of Analysis contains a detailed QA Report which provides the results of the QA/QC performed in conjunction with the laboratory analysis presented in the report. This includes testing of matrix spike samples to evaluate matrix interference, spiked blank samples to evaluate analyte recovery, method blank samples to identify laboratory contamination, surrogate samples to evaluate extraction efficiency, and laboratory duplicate samples. The RPD is calculated for the results of the pair of samples to evaluate the variance in the measurements.

NSL completed a review of the laboratory QA Reports included in each of the 27 laboratory Certificates of Analysis (reports are included in **Appendix H**) for this project. Overall, the QA Reports presented acceptable results which as summarized below:

- The QA report for B0B4037 noted that the duplicate exceeds the acceptance criteria due to sample non-homogeneity. Re-analysis yielded similar results.
- The QA report for B0A7205, B0A8033, B0B0604, B0B1195, B0B3907 and B0B4037 noted that the matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.
- The QA report for B0A8033, B0B0545 and B0B0604 noted that the VPH RDLs were elevated due to detected levels in the method blank.
- The QA report for B0B0538, B0B0545 and B0B0604 noted that the recovery in the matrix spike was not calculated. Spiked concentrations were less than 2x that native to the sample.
- The QA report for B0B0545 and B0B0604 noted that recovery or RPD was outside the control limits. The overall quality control for this analysis meets acceptability criteria.
- The QA report for B0B4037 noted that less than 10% of reported compounds failed in matrix spike but matrix spike met acceptance criteria.
- The QA report for B0B4037 noted that less than 10% of reported compounds failed in blank spike but blank spike met acceptance criteria.

8 HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT

The purpose of the HHERA was to determine whether or not on-site concentrations of contaminants pose unacceptable risk to human or ecological receptors given current and projected future land uses. Site specific target levels (SSTLs) were developed to aid in remedial planning for the Site and will be used in conjunction with the generic screening criteria to estimate the location and volumes of soil on-site requiring remediation. The HHERA is summarized below: the full report has been submitted under separate cover.

NSL conducted two levels of COC screening: an initial generic HHERA screening and a more detailed human health specific and ecological specific screening. The data collected as part of the ESA formed the basis of the HHERA with the exception of soil samples collected at two locations (SS-10 and SD-TP2). Both of these locations are considered "hot-spots" (discussed in Section 9 of this report) and will be remediated. For the purpose of the initial HHERA screening, maximum soil concentrations of the COC (inorganic elements, PHC, and PAHs) at the Site were compared to the screening criteria. After a generic guideline screening several COCs were carried forward for further assessment in the human health risk assessment (HHRA) and ecological risk assessment (ERA) where more detailed screenings were conducted.

Human Health Risk Assessment

Maximum concentrations of aluminum, copper, lead, manganese, nickel, PHC F2 and F3, and 2-methylnaphthalene in soil exceed applicable human health-based guidelines and were carried forward for further assessment. No applicable guideline was available for quinoline so it too was carried forward for further assessment in the HHRA. No COCs were identified in surface water or sediment.

Based on discussions with GN personnel and an informal interview with Clyde River elders, Inuit campers and construction/remediation workers were considered the most probable potential human receptors likely to visit the Site. Inuit Campers on the Site are considered to be of all ages, from infant to adult. Toddlers were used to assess non-carcinogenic COCs because the toddler life stage is the most sensitive receptor and is considered to be protective of all other life stages. The Inuit camper scenario will also be protective of any short-term visitors to the Site. For the assessment of carcinogenic COPCs, the lifetime adjusted receptor was used to represent the Inuit Camper.

Based on site-specific exposure parameters obtained from interviews with Clyde River community members, and conservatively assuming that people are exposed to maximum concentrations of COPC, no unacceptable risks were calculated for any of the COCs present at the Site for the Inuit Camper with the exception of aluminum and lead. For the Construction/Remediation Worker, no unacceptable risks were calculated for any of the COC with the exception of nickel and manganese.

Site Specific Target Levels (SSTLs) protective of human health were derived based on the results obtained from the Inuit Camper risk assessment (i.e., for aluminum and lead). The unacceptable risk to the Construction/Remediation Worker will be managed through the use of personal protective

equipment and clothing during remediation activities conducted on-site. **The SSTL for aluminum was calculated to be 180,000 mg/kg** (Site maximum for aluminum is 340,000 mg/kg). Only one sample location (two individual soil samples at different depths) contained aluminum concentrations in soil that exceed the aluminum SSTL. **A lead SSTL of 474 mg/kg was calculated for the Site** (Site maximum for lead is 1300 mg/kg). Three sample locations have soil lead concentrations greater than the SSTL.

In addition to the potential risks from soils, the maximum lead concentration in clams (2.2 mg/kg) was in exceedance of the Province of British Columbia alert level for lead in the edible portions of fish and shellfish of 0.8 mg/kg, and the U.S. Food and Drug Administration (FDA) guideline for lead in molluscan shellfish of 1.5 mg/kg. NSL recommends the collection and analysis of additional clam samples, and the collection of detailed clam ingestion information (e.g., who eats clams, how much do they eat and how often) for residents of Clyde River for the purposes of a site-specific assessment of the risk to local residents from the ingestion lead in clams.

Although no berries were found in the areas of known human impact at the Site, and interviews with local residents confirmed that no collection of edible vegetation occur in this area, it is possible that vegetation or berries might grow and be collected in the area surrounding the Site. Based on a lack of berry samples, ingestion of Site vegetation was not incorporated into the HHRA. NSL recommends after remediation of the Site is completed, additional Site vegetation (including edible berries, if present) be collected and assessed for potential human health risk.

Ecological Risk Assessment

In addition to soil and sediment samples, plant and organism (lemming) samples from 2010 were incorporated into the ERA. The maximum concentrations of aluminum, boron, chromium, copper, lead, manganese, nickel, selenium, silver, strontium, tin, zinc, PHC F1, F2, and F3, 2-methylnaphthalene, naphthalene, and phenanthrene exceed the applicable ecological guidelines and were carried forward for further assessment.

The following species were identified as valued ecological components (VECs) and evaluated in the ERA:

- Peary Land Collared Lemming (*Dicrostonyx groenlandicus*) – Herbivorous mammal
- Arctic Hare (*Lepus arcticus*) – Herbivorous mammal
- Barrenground Caribou (*Rangifer tarandus groenlandicus*) - Herbivorous mammal
- Arctic Fox (*Alpoex lagopus*) – Carnivorous mammal
- Rock Ptarmigan (*Lagopus mutus*) – Herbivorous bird
- Snowy Owl (*Bubo scandiacus*) – Carnivorous Bird
- Plants – Evaluated as a class
- Soil Invertebrates – Evaluated as a class

Unacceptable risk was calculated for the collared lemming exposed to Site maximum concentrations of the PHC F2 aromatics, F3 aromatics, total PHC, copper and nickel. For the rock ptarmigan,

unacceptable risk was calculated for PHC F2 aromatics, F3 aromatics. For terrestrial plants and invertebrates, unacceptable risk was calculated for all COPCs carried forward, except tin. It should be noted that aluminum toxicity in plants was the only noted observation of vegetative stress on-site in the areas where sodium aluminum oxide (max = 340,000 mg/kg Al), a by-product of a hydrogen generation process used to produce hydrogen for weather balloons, is found. Unlike the rest of the Site, most of the areas with this white powdery dust did not have vegetation coverage.

A post-hoc assessment was undertaken after having removed from the dataset all samples taken from locations at which PHC staining, free product or surface aluminum powder is known to occur (these areas have been identified for remediation in the Phase III ESA). Using this modified data set, risk for the collared lemming and the rock ptarmigan remained greater than the acceptable threshold for the F2 fraction and total TPH. To remediate the Site to concentrations which would reduce the risk to terrestrial mammals and birds to acceptable levels, eight samples (containing the highest concentrations of PHC outside of the staining and free product areas) need to be removed from the Site. Remaining PHC concentrations were used to develop PHC SSTLs for this Site. **PHC F1, F2 and F3 SSTLs were calculated as roughly 240 mg/kg, 3700 mg/kg and 1800 mg/kg, respectively.**

9 DISCUSSION

The results of the analysis of samples compared with the generic screening criteria were presented in Section 6. The Human Health and Environmental Risk Assessment summarized in Section 8 and submitted under separate cover, has generated SSTLs or site specific remedial criteria for a number of contaminants (generic screening criteria continue to apply for some parameters). This section discusses the outstanding exceedances at the Site following the application of the results of the risk assessment. The discussion also incorporates NSL's understanding of land use and remedial objectives for the Site as discussed during community consultation in June 2009. Specifically, the objectives were to remediate the Site to a technically defensible and environmentally acceptable condition and to remove all wastes so that the Site is safe for ongoing recreational and traditional purposes.

Soil

Three areas of significant surficial staining have been identified at the Site; the spillways containing aluminum powder down-gradient of the former hydrogen generating buildings, the black hydrocarbon staining west of the DOT Powerhouse and some intermittent staining in the area of the former Fuel Dump along the beach. In keeping with the remedial objectives for the Site NSL has identified that these areas would be remediated and therefore they are included in the quantity estimates presented in Table 8.1 below. The areas of surficial staining are presented in Drawing 123600017-8, **Appendix A.**

Soil PHC impacts (PHC Fractions F1-F3) in excess of the screening criteria were encountered in soil samples analyzed from several areas across the Site including throughout the DOT portion of the Main Site (fuel tanks, spillways down-gradient of HGB1 and HGB2, Radiosonde, Washhouse, and Powerhouse), and at the Site Dump, Southern Powerhouse and Garage, Fuel Dump and at buried barrels along the beach. Soil metals impacts (copper, hexavalent chromium, lead, selenium, silver and/or zinc) in excess of the screening criteria were encountered in soil samples analyzed from several areas across the Site including the Beach Dump, DOT HGB3 spillway, Site Dump, the location of uncovered buried burnt debris, the area of ash uncovered north of the buried barrels along the beach, and three locations of surficial debris located at the residential plateau. Soil PAH impacts in excess of the screening criteria (phenanthrene and/or naphthalene) were encountered at several areas across the Site including the spillway down-gradient of HGB1, a test pit down-gradient of the Washhouse, Radiosonde, DOT Powerhouse, Southern Powerhouse and Garage and at the area of ash uncovered north of the buried barrels along the beach. Soil PCB impacts in excess of the screening criteria were not encountered. Refer to Drawing 123600017-7, **Appendix A** for the locations of soil impacts in excess of the screening criteria.

Two areas of significant hydrocarbon impacts ("hot spots") were identified during the field program. One was the area of buried burnt debris located along the pathway east of the DOT Post Office which contained a heavy hydrocarbon sheen. The second area was at the southwest corner of the Site Dump where waste sludge, likely from a former drum, had spilled onto the ground. Because

these two areas of the Site contained significant product, the areas should be remediated and samples collected from these areas ((SS10-1 and SD-TP2-SA1) were excluded from the HHERA.

In addition to the areas of surface staining and the "hot spot" areas described above that require remediation, the HHERA calculated SSTLs for all COCs for which an unacceptable human health or ecological risk was identified including, aluminum, lead and PHC fractions F1 to F3. After comparison of the soil results to the calculated SSTLs, 18 soil samples exceed the SSTLs for PHC Fractions F1, F2 and/or F3 (TP2-M-2, TP3.5-E-3, TP3.5-F-2, TP4-L-4, TP5-L-2, TP5.5-MN-5, TP6.5-MN-2, SS10-1, FD-TP2-SA3, WPH-TP1-SA2, WPH-TP2-SA4, FT-TP2-SA2, HGB2-TP1-SA2, R-TP1-SA2, SD-TP2-SA1, SW-TP1-SA3, WH-TP2-SA3 and WH-TP5-SA2) and 5 soil samples exceed the SSTLs for metals (TP7-MN-1 and TP7-MN-2 for aluminum and TP6.5-FG-1, TP12.5-E-1, and HGB3-TP-SA1 for lead). These results are summarized as follows:

- Soil hydrocarbon impacts in excess of the SSTLs exist at several areas across the Main Site including throughout the DOT portion of the Main Site (fuel tanks, spillways down-gradient of HGB1 and HGB2, Radiosonde, Washhouse, and Powerhouse), and at the Site Dump, and Southern Powerhouse and Garage.
- Soil metals impacts in excess of the SSTLs exist at several areas across the Site including the DOT HGB3 spillway, a portion of the main spillway immediately downgradient of DOT HGB1 and two locations of surficial debris located at the residential plateau.

Drawing 123600017-8, **Appendix A** presents the areas of soil concentrations in excess of the SSTLs. The estimated quantities in excess of the SSTLs are presented in Table 8.1 below.

Groundwater

BTEX and PHC fractions F1 and F2 were either not detected or were detected at concentrations below the screening criteria in all groundwater (melt water) samples collected from the drive-points that contained sufficient water for sampling. All melt water samples collected during the test pitting in 2008 contained concentrations of PHCs in excess of the screening criteria. All groundwater samples collected from the drive-points in 2010 and from the test pits in 2008 contained concentrations of one or more metals parameters that exceeded the screening criteria. Groundwater remediation will be required during the Site remediation (excavation water) and quality should then be re-assessed following soil remediation (i.e. source removal) to establish post remediation contaminant concentrations.

Surface Water

BTEX and PHC fractions F1 and F2 were either not detected or were detected at concentrations below the screening criteria in all surface water samples collected from the Site. Metals parameters were either not detected or were detected at concentrations below the screening criteria in three samples collected from Creek 1. The concentration of copper exceeded the screening criteria in the samples collected from Creeks 2 and 3. In the remaining two samples collected on the Site (CW-4 collected from the drainage path running through the DOT portion of the Main Site and SW-DUMP

collected from the ponded water in the Site Dump), concentrations of one or more of aluminum, antimony, arsenic, copper, iron, lead, manganese, nickel, thallium, uranium and zinc exceeded the applicable screening criteria. General chemistry parameters (total dissolved solids (TDS), ammonia, color, pH, and sodium) in excess of the screening criteria were identified in all but one of the surface water samples collected. One surface water sample (CW-4) contained concentrations of naphthalene and pyrene that exceeded the screening criteria. Surface water samples CW-4 and SW-DUMP are located in areas which will require remediation. A post-remediation assessment (after source removal) of the surface water quality in these areas is required to determine future remedial requirements.

Sediment

All sediment samples collected from the Site, BTEX, PHC fractions F1 to F4, PAHs and metals were either not detected or were detected at concentrations below the screening criteria.

Drum Contents

The results of the analysis of drum samples collected from the Site indicate that concentrations of total and absorbable organic halogens; dissolved chromium; dissolved cadmium; and, dissolved lead detected in the drum samples collected were either not detected or were detected at concentrations below the screening criteria. Concentrations of PCBs detected in the samples collected were either not detected, or were detected below the laboratory detection limit. It should be noted that the laboratory detection limit was greater than applicable criteria for DRUM-5. With the exception of sample DRUM-3, the ash contents detected in the samples collected were below the screening criteria. The estimated quantities of petroleum product wastes are included in Table 8.1 below.

Waste Characterization

Four waste samples were collected during the field program and submitted for waste characterization analysis to aid in determination of their suitability for disposal during remediation.

Hazardous and Non – Hazardous Wastes

During the 2010 field program, hazardous and non-hazardous waste, petroleum product waste, and special wastes were re-assessed as compared to the quantities identified during the 2008 field program. No additional waste appears to have been added to the Site since the 2008 study and the volume of petroleum waste has been reduced. The updated estimated quantities are presented in Table 8.1 below.

Table 8.1: Summary of Contaminate Soil Volumes and Wastes at the Old Town Site

Item	Location	Approximate Area (m^2)	Approximate Depth (m)	Approximate Volume (m^3)
Metals impacted soil exceeding SSTLs	Residential Area and Main Site DOT Area	655	0.6 to 1.2 m	575
PHC impacted soil exceeding SSTLs	Southern Powerhouse, Main Site DOT Area, Spillway, Fuel Tanks and Main Site Dump	4900	0.5 to 1.25	4900
Surface staining (aluminum/hydrocarbon) requiring removal	Beach Fuel Dump, West of Powerhouse Debris Pile on Beach, Spillway	2100	0.3	640
Hazardous Wastes	Refer to Tables F1 thru F6 in **Appendix F**	-	-	17
Special Wastes		-	-	187
Non-Hazardous Wastes		-	-	1254
Petroleum Product Waste		-	-	1845 L

10 CONCLUSIONS

NSL completed a Supplemental Phase III ESA at the Old Town Site in Clyde River, NU to provide data necessary for remediation of the Site. The Phase III ESA was informed by an HHERA completed by NSL and reported under separate cover. The field component of the Phase III ESA was completed between August 3rd and 18th, 2010 and included the collection of soil, sediment, groundwater, surface water and waste material samples for laboratory analysis.

Analysis and interpretation of data collected during the 2010 site visit and subsequent laboratory analytical reports, completion of the HHERA and review of the results of the 2008 site investigation have resulted in the identification of the following contaminants and wastes present on-site:

- 575 m^3 of impacted soil containing concentrations of metals in excess of the SSTLs
- 4,900 m^3 of impacted soil containing concentrations of petroleum hydrocarbons in excess of the SSTLs
- 640 m^3 of surficial soil containing significant petroleum hydrocarbon or aluminum staining
- 17 m^3 of hazardous wastes
- 187 m^3 of special wastes
- 1,254 m^3 of non-hazardous wastes
- 1,854 litres of waste petroleum products.

11 CLOSURE

This report has been prepared for the sole benefit of the Department of Community and Government Services (CGS), Government of Nunavut. No other person or entity may use this report without the express written consent of Nunami Stantec Limited or the Department of CGS.

Any uses which a third party makes of this report, or any reliance on decisions made based on it, are the responsibility of such third parties. Nunami Stantec Limited accepts no responsibility for any damages suffered by any third party as a result of decisions made or actions based on this report.

The information and conclusions presented in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted professional practices current at the time the work was performed. Conclusions presented in this report should not be construed as legal or medical advice.

Should additional information become available, Nunami Stantec Limited requests that this information be brought to our attention so that the conclusions presented may be re-assessed as necessary.

This report was prepared by Patricia Coyne, B.Sc. and Melissa Nicholson, B.Eng., E.I.T., and reviewed by Rob McCullough, BES, CET, CESA, and Nick Lawson, B.Sc.

Respectfully submitted,

Nunami Stantec Limited

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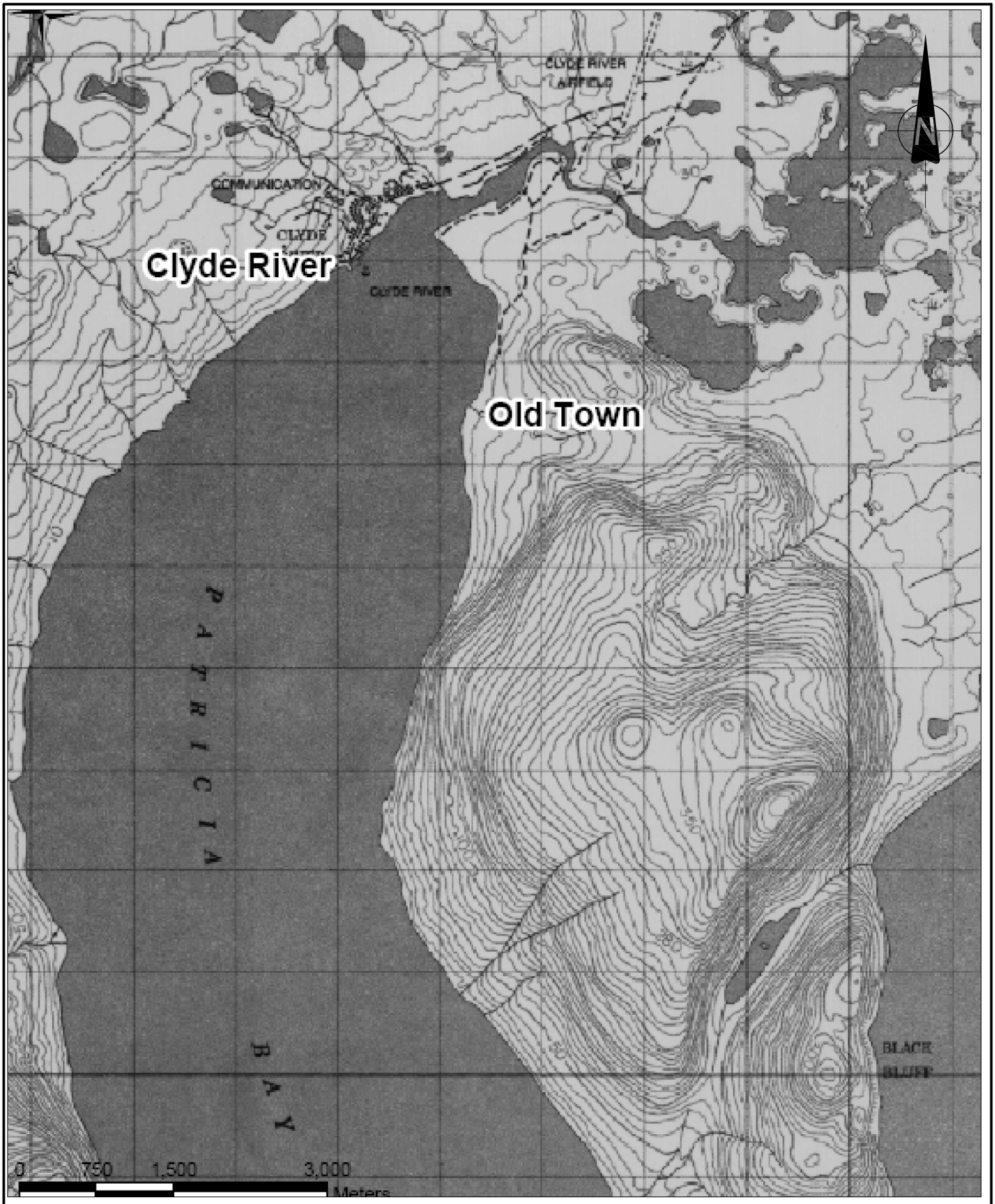
APPENDIX A

Site Drawings



APP'D

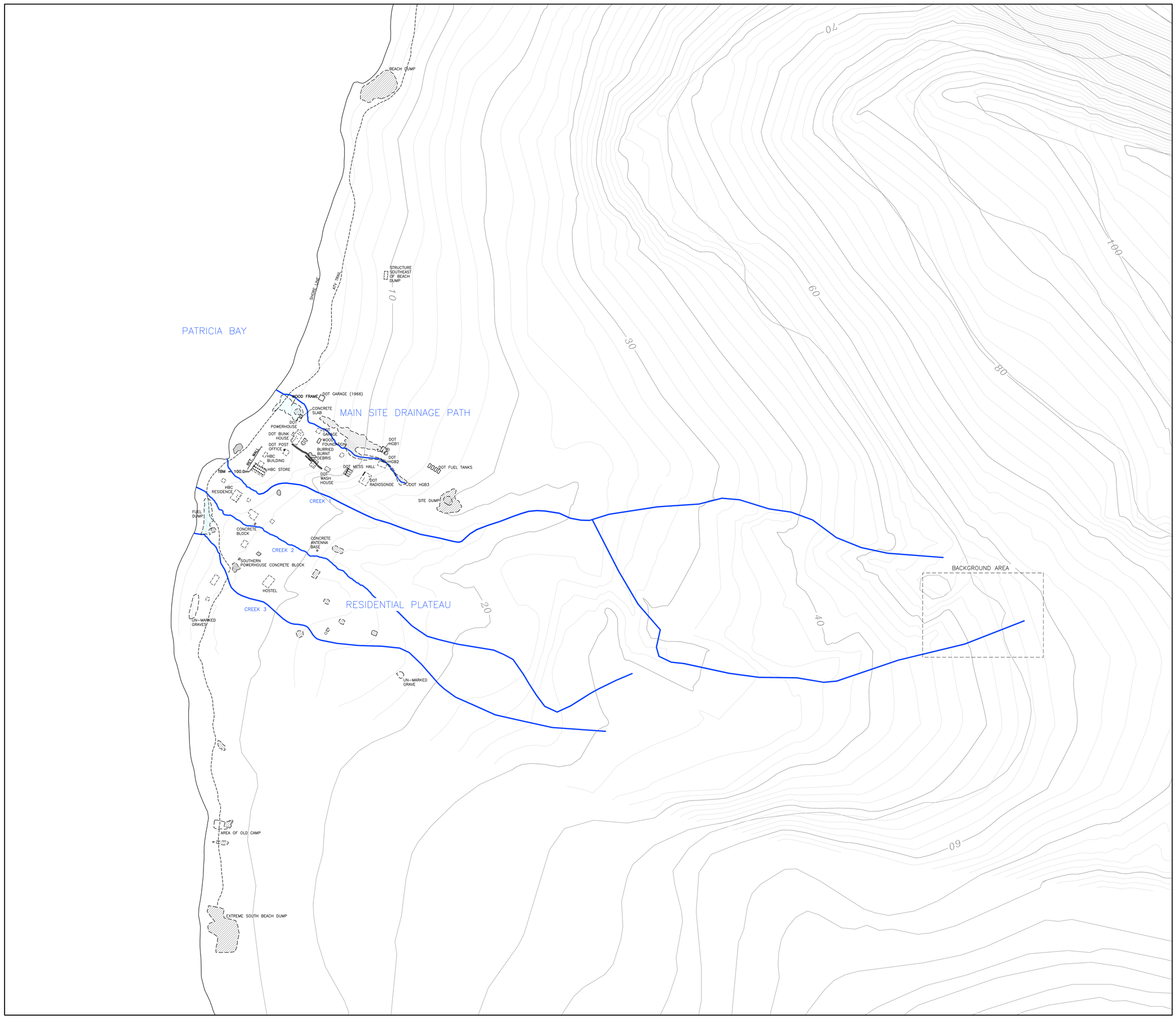
GENERAL SITE LOCATION AND TOPOGRAPHY

SCALE 1: 50,000

Stantec

123600017

FIGURE 1



SITE LOCATION PLAN
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LEGEND:

- ESTIMATED EXTENT OF FORMER BUILDING FOOTPRINT
- LOCATION OF FOOTING POST
- APPROXIMATE AREA OF SURFACE DEBRIS
- APPROXIMATE EXTENT OF HYDROCARBON SURFACE STAINING
- APPROXIMATE EXTENT OF ALUMINUM SPILLWAY

APP'D	NO.	DETAILS	DATE
REVISIONS			
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

SITE PLAN

Stantec

DATE 2010/10/22	SCALE AS NOTED
DRAWN BY TDB/SJT	APPROVED BY
DRAWING NO. 123600017-1	

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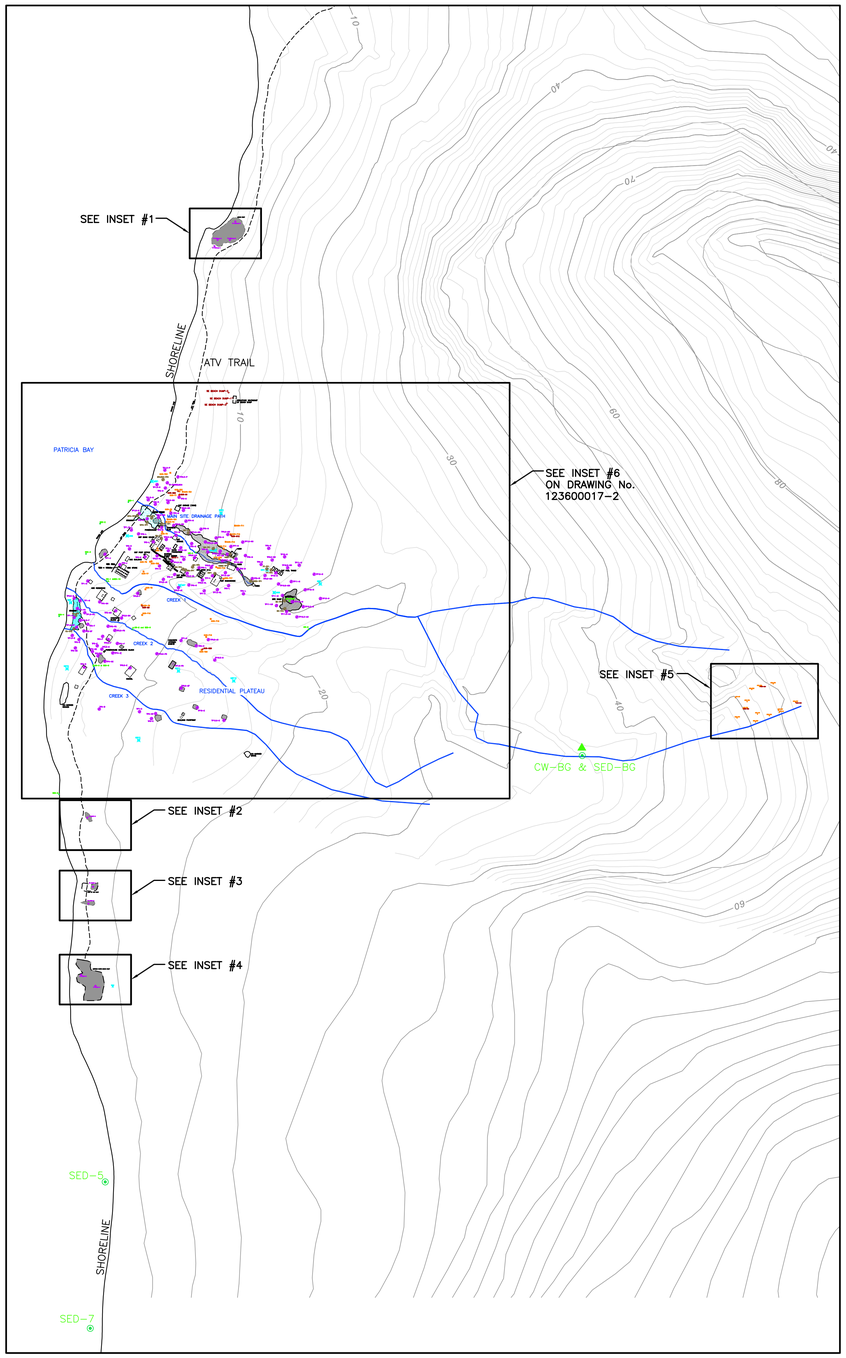

SITE LOCATION PLAN
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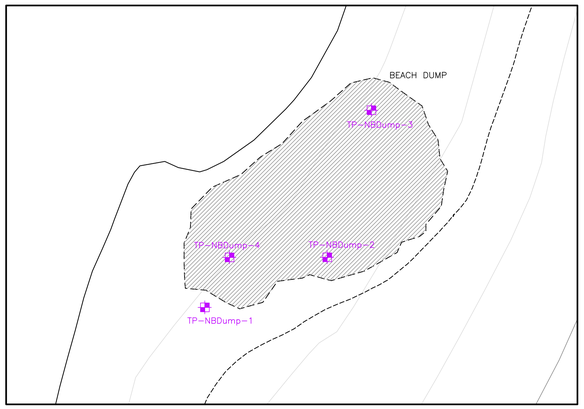

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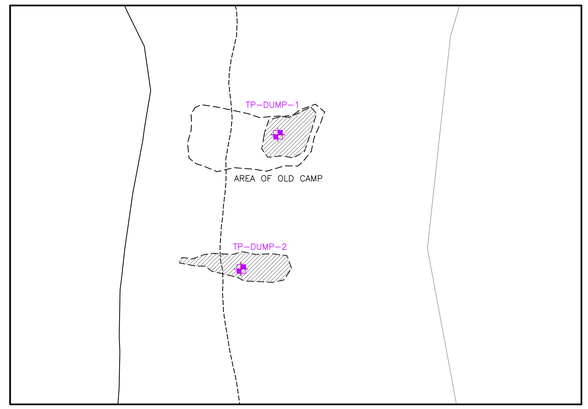

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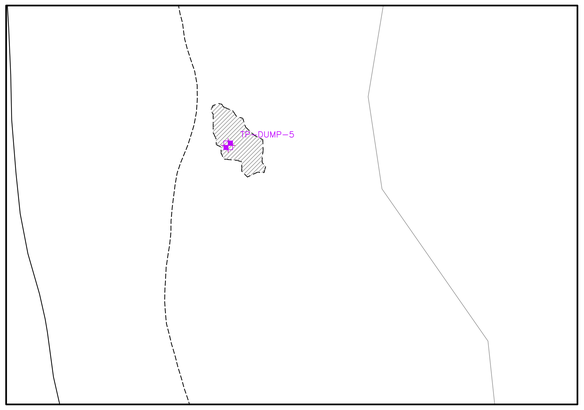

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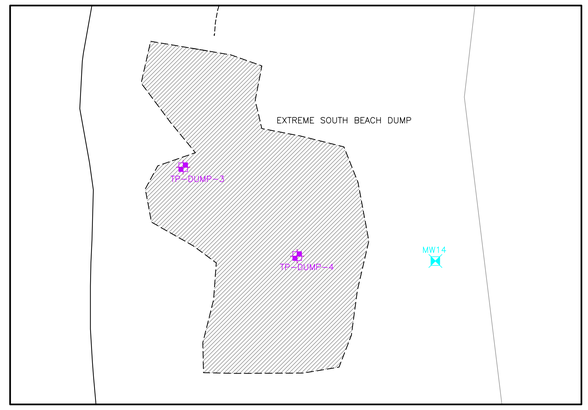

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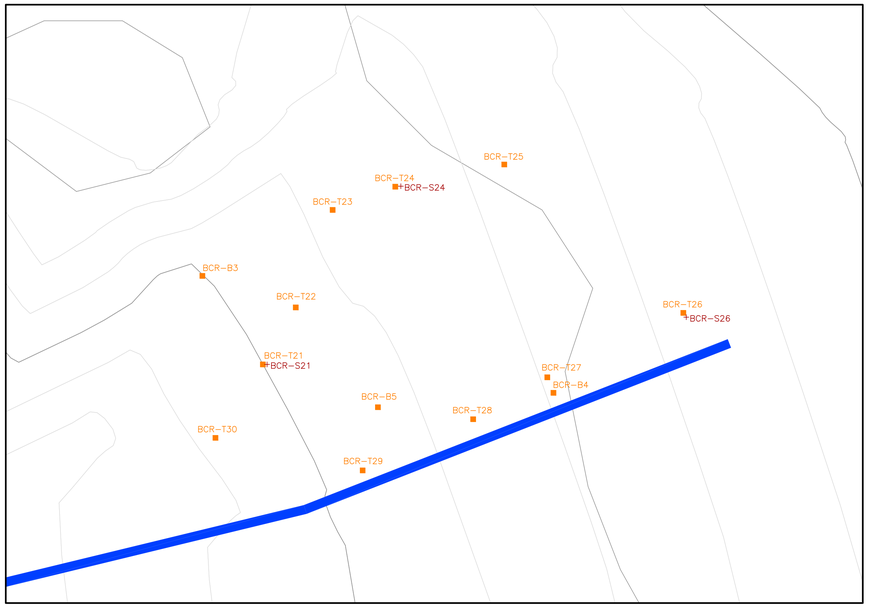

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LEGEND:

- MONITOR WELL LOCATION
- SEDIMENT SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION (2010)
- TRAP LOCATION
- SURFACE SOIL SAMPLE LOCATION
- LOCATION OF 2008 TEST PITS WHERE SAMPLES WERE SUBMITTED FOR LAB ANALYSIS
- ESTIMATED EXTENT OF FORMER BUILDING FOOTPRINT
- LOCATION OF FOOTING POST
- APPROXIMATE AREA OF SURFACE DEBRIS

APP'D	NO.	DETAILS	DATE
REVISIONS			
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

SITE SAMPLING LOCATIONS

Stantec

DATE 2010/10/19	SCALE AS NOTED
DRAWN BY TDB/SJT	APPROVED BY
DRAWING NO. 123600017-2	

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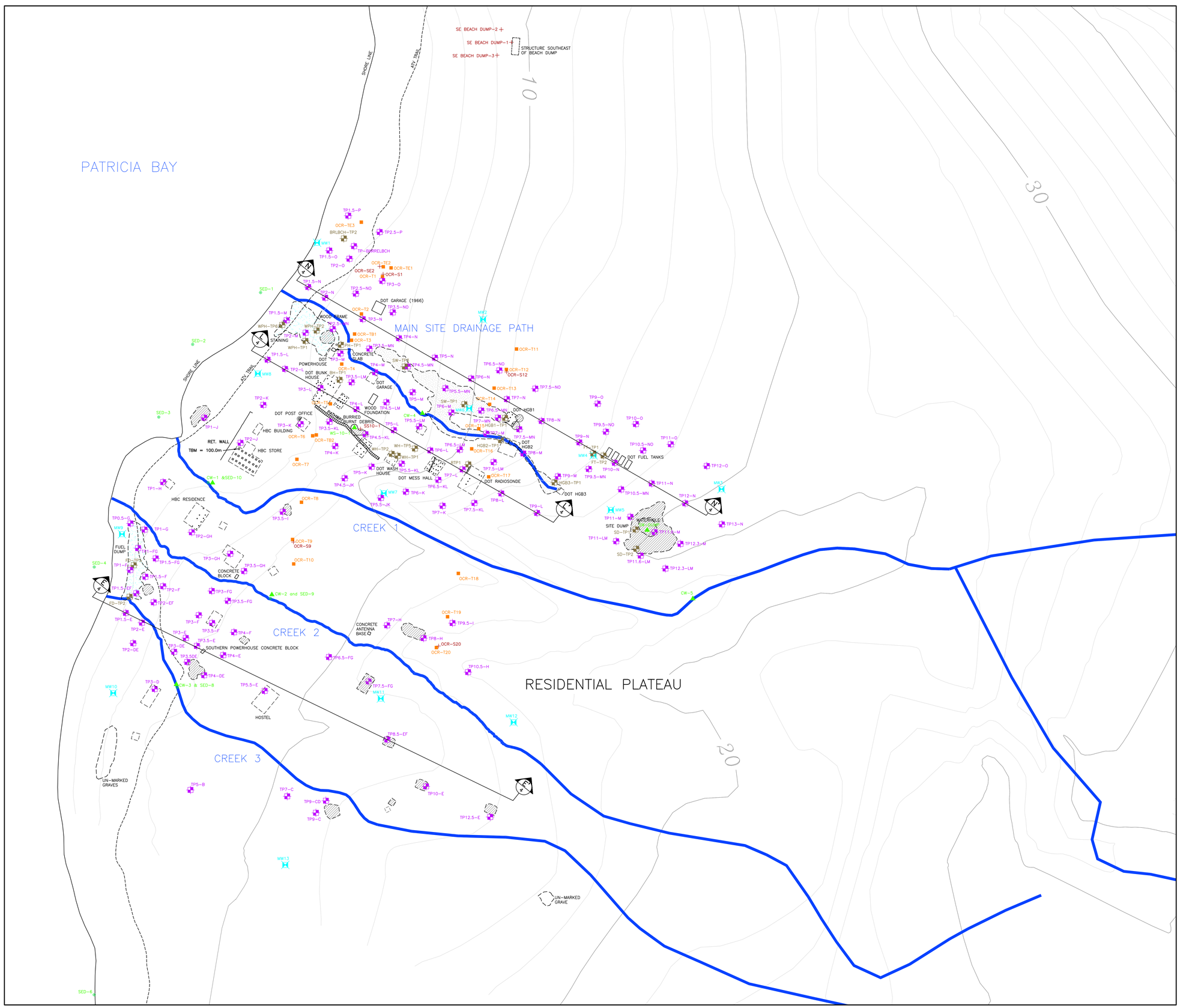

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BAR SCALE
1:1000

THIS DRAWING FORMS PART OF STANTEC CONSULTING LTD. SUPPLEMENTARY PHASE III ENVIRONMENTAL SITE ASSESSMENT REPORT, 2010 AND SHOULD BE READ IN CONJUNCTION WITH THE REPORT.

LEGEND:

- MONITOR WELL LOCATION
- SEDIMENT SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION (2010)
- TRAP LOCATION
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- APPROXIMATE AREA OF SURFACE DEBRIS
- APPROXIMATE EXTENT OF ALUMINUM SPILLWAY
- APPROXIMATE EXTENT OF HYDROCARBON SURFACE STAINING
- CROSS SECTIONS (SHOWN ON DRAWING 123600017-4)

APP'D	NO.	DETAILS	DATE
REVISIONS			
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

MAIN SITE SAMPLING LOCATIONS

Stantec

DATE 2010/10/22	SCALE 1:1000
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DRAWING NO. 123600017-3	

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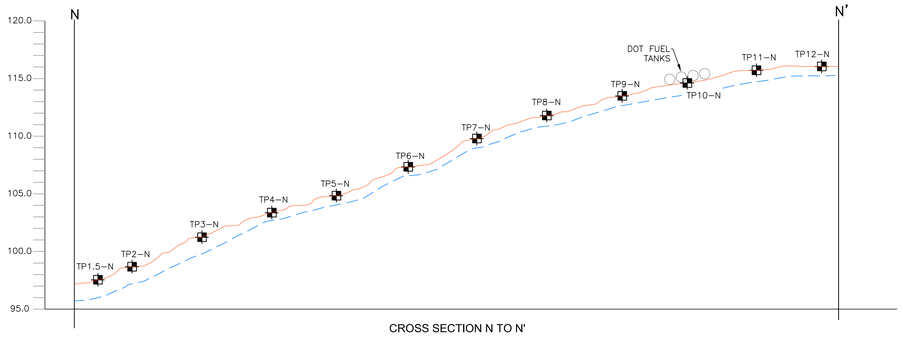
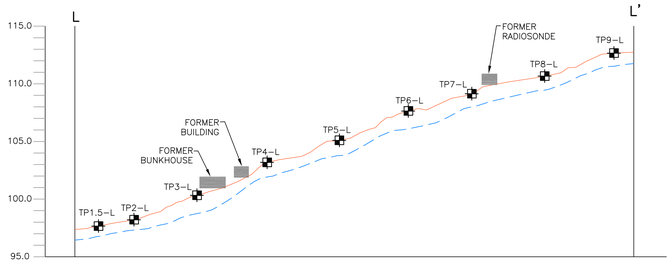
LEGEND

- TEST PITS
- GRADE
- APPROX. PERMA-FROST LEVEL



CROSS SECTION N TO N'



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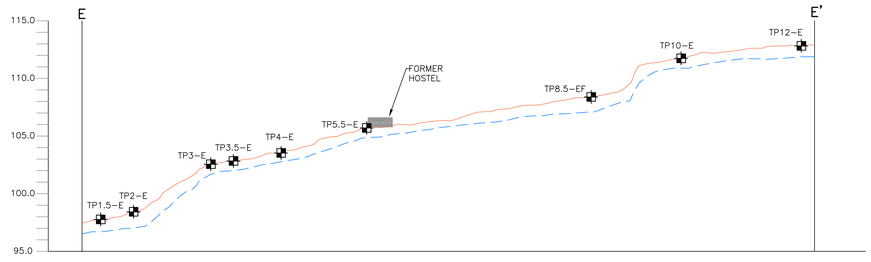

CROSS SECTION E TO E'

APP'D	NO.	DETAILS	DATE
		REVISIONS	
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010
		REFERENCE	

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

CROSS SECTIONS

Stantec

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DRAWING NO. 123600017-4

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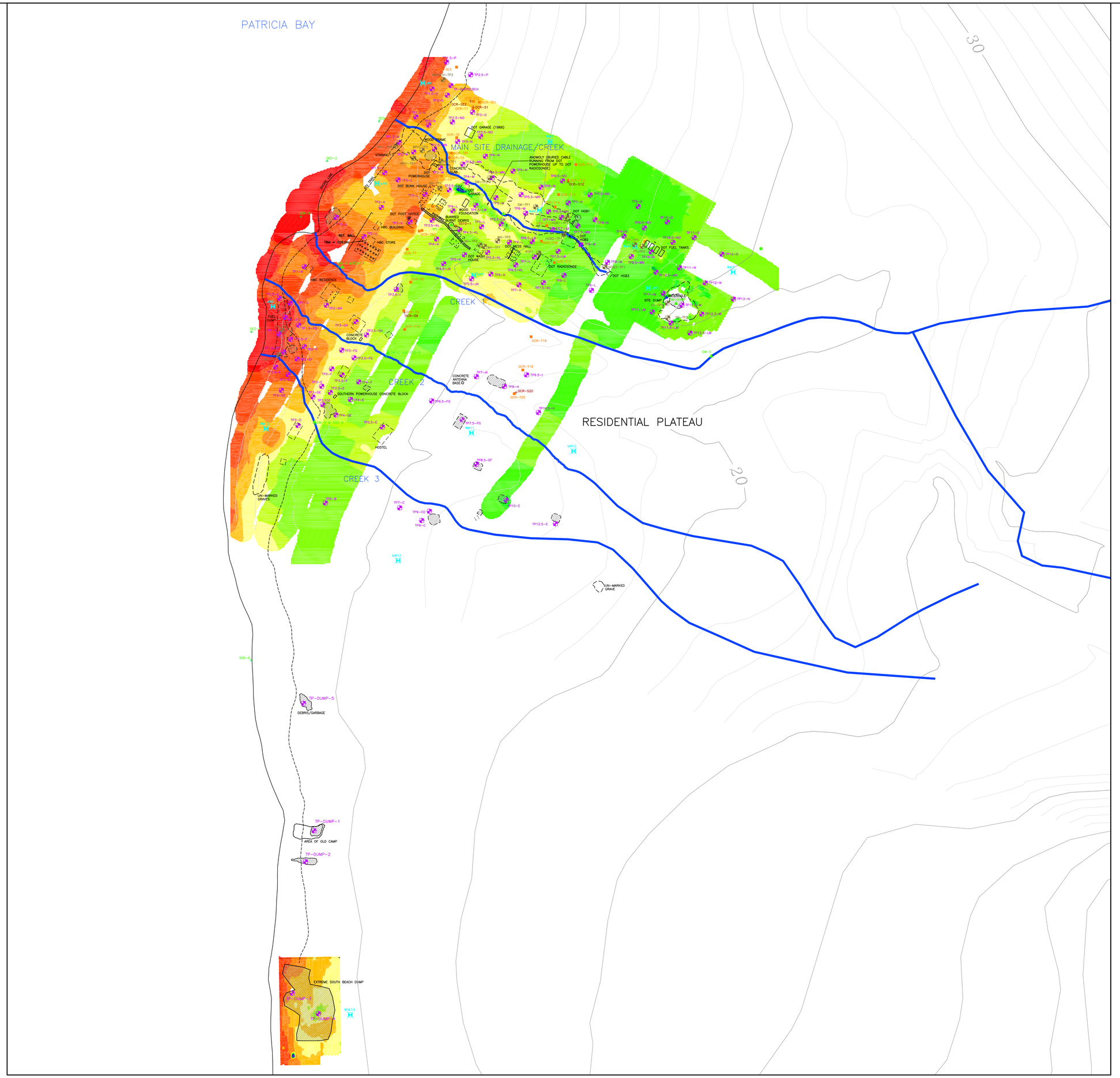

THIS DRAWING FORMS PART OF STANTEC CONSULTING LTD. SUPPLEMENTARY PHASE III ENVIRONMENTAL SITE ASSESSMENT REPORT, 2010 AND SHOULD BE READ IN CONJUNCTION WITH THE REPORT.

LEGEND:

- MONITOR WELL LOCATION
- SEDIMENT SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION (2010)
- TRAP LOCATION
- SURFACE SOIL SAMPLE LOCATION
- LOCATION OF 2008 TEST PITS WHERE SAMPLES WERE SUBMITTED FOR LAB ANALYSIS
- ESTIMATED EXTENT OF FORMER BUILDING FOOTPRINT
- LOCATION OF FOOTING POST
- APPROXIMATE AREA OF SURFACE DEBRIS
- APPROXIMATE EXTENT OF ALUMINUM SPILLWAY
- APPROXIMATE EXTENT OF HYDROCARBON SURFACE STAINING

98(ms/m)
92(ms/m)
86(ms/m)
80(ms/m)
74(ms/m)
68(ms/m)
62(ms/m)
56(ms/m)
50(ms/m)
44(ms/m)
38(ms/m)
32(ms/m)
26(ms/m)
20(ms/m)
14(ms/m)
8(ms/m)
2(ms/m)
−4(ms/m)
−10(ms/m)
−16(ms/m)
−22(ms/m)
−28(ms/m)
−34(ms/m)
−40(ms/m)

APP'D	NO.	DETAILS	DATE
REVISIONS			
		APPARENT CONDUCTIVITY DATA OBTAINED FROM MULTIVIEW SUBSURFACE MAPPING EM31 SURVEY CONDUCTED AUG.6/10, PROJECT #16811	08/06/2010
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES — GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

GEOPHYSICAL APPARENT CONDUCTIVITY PLAN

Stantec

DATE	SCALE
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DRAWING NO. 123600017-5

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PATRICIA BAY

MAIN SITE DRAINAGE/CREEK

CREEK 1

CREEK 2

CREEK 3

RESIDENTIAL PLATEAU

30

20

DOT GARAGE (1966)

WOOD FRAME

STAINING

CONCRETE SLAB

DOT POWERHOUSE

DOT BUNK HOUSE

DOT GARAGE

WOOD FOUNDATION

BURIED PAINT DEBRIS

DOT POST OFFICE

HBC BUILDING

HBC STORE

RET. WALL

TBM = 100.00m

DOT MESS HALL

DOT MAIN HOUSE

DOT RADIOSONDE

DOT HGB1

DOT HGB2

DOT HGB3

FUEL TANKS

WATERFALL

SITE DUMP

HBC RESIDENCE

FUEL DUMP

CONCRETE BLOCK

CONCRETE ANTENNA BASE

SOUTHERN POWERHOUSE CONCRETE BLOCK

HOSTEL

UN-MARKED GRAVES

UN-MARKED GRAVE

TP-DUMP-5
DEBRIS/GARBAGE

TP-DUMP-1
AREA OF OLD CAMP

TP-DUMP-2

EXTREME SOUTH BEACH DUMP

MW14

SED-6

SED-10

CW-2

CW-1

MW12

MW13

MW14

0 25 50
BAR SCALE
1:1250

THIS DRAWING FORMS PART OF STANTEC CONSULTING LTD. SUPPLEMENTARY PHASE III ENVIRONMENTAL SITE ASSESSMENT REPORT, 2010 AND SHOULD BE READ IN CONJUNCTION WITH THE REPORT.

LEGEND:

- MONITOR WELL LOCATION
- SEDIMENT SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION (2010)
- TRAP LOCATION
- SURFACE SOIL SAMPLE LOCATION
- LOCATION OF 2008 TEST PITS WHERE SAMPLES WERE SUBMITTED FOR LAB ANALYSIS
- ESTIMATED EXTENT OF FORMER BUILDING FOOTPRINT
- LOCATION OF FOOTING POST
- APPROXIMATE AREA OF SURFACE DEBRIS
- APPROXIMATE EXTENT OF ALUMINUM SPILLWAY
- APPROXIMATE EXTENT OF HYDROCARBON SURFACE STAINING

- 12 (ppt)
- 11 (ppt)
- 10 (ppt)
- 9 (ppt)
- 8 (ppt)
- 7 (ppt)
- 6 (ppt)
- 5 (ppt)
- 4 (ppt)
- 3 (ppt)
- 2 (ppt)
- 1 (ppt)
- 0
- −1 (ppt)
- −2 (ppt)
- −3 (ppt)
- −4 (ppt)
- −5 (ppt)
- −6 (ppt)
- −7 (ppt)
- −8 (ppt)
- −9 (ppt)
- −10 (ppt)
- −11 (ppt)
- −12 (ppt)
- −13 (ppt)
- −14 (ppt)
- −15 (ppt)
- −16 (ppt)

APP'D	NO.	DETAILS	DATE
REVISIONS			
		IN-PHASE DATA OBTAINED FROM MULTIVIEW SUBSURFACE MAPPING EM31 SURVEY CONDUCTED AUG.6/10, PROJECT #16811	08/06/2010
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

GEOPHYSICAL IN-PHASE PLAN

Stantec

DATE 2010/10/20	SCALE 1:1250
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DRAWING NO. 123600017-6	

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PATRICIA BAY

MAIN SITE DRAINAGE/CREEK

CREEK 1

CREEK 2

CREEK 3

RESIDENTIAL PLATEAU

SE BEACH DUMP-2
SE BEACH DUMP-1
SE BEACH DUMP-3
STRUCTURE SOUTHEAST OF BEACH DUMP

SHORE LINE
ATV TRAIL

10

20

DOT GARAGE (1966)
WOOD FRAME
STAINING
CONCRETE SLAB
POWERHOUSE
DOT BUNK HOUSE
DOT GARAGE
WOOD FOUNDATION
BURRIED DEBRIS
DOT POST OFFICE
HBC BUILDING
HBC STORE
RET. WALL
TBM = 100.0m
HBC RESIDENCE
DOT WASH HOUSE
DOT MESS HALL
DOT RADIOSONDE
DOT HGB1
DOT HGB2
DOT HGB3
DOT FUEL TANKS
SITE DUMP
WATERHOLE
FUEL DUMP
CONCRETE BLOCK
CONCRETE ANTENNA BASE
SOUTHERN POWERHOUSE CONCRETE BLOCK
HOSTEL
UN-MARKED GRAVES
UN-MARKED GRAVE

BEACH DUMP

INSET #1 (FROM DRAWING 123600017-1)
SCALE: 1:500

BAR SCALE 1:1000

THIS DRAWING FORMS PART OF STANTEC CONSULTING LTD. SUPPLEMENTARY PHASE III ENVIRONMENTAL SITE ASSESSMENT REPORT, 2010 AND SHOULD BE READ IN CONJUNCTION WITH THE REPORT.

LEGEND:

- MONITOR WELL LOCATION
- SEDIMENT SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION (2010)
- TRAP LOCATION
- SURFACE SOIL SAMPLE LOCATION
- LOCATION OF 2008 TEST PITS WHERE SAMPLES WERE SUBMITTED FOR LAB ANALYSIS
- ESTIMATED EXTENT OF FORMER BUILDING FOOTPRINT
- LOCATION OF FOOTING POST
- APPROXIMATE AREA OF SURFACE DEBRIS
- PETROLEUM HYDROCARBON CONCENTRATION IN SOIL EXCEEDING THE SCREENING CRITERIA
- METALS CONCENTRATION IN SOIL EXCEEDING THE SCREENING CRITERIA
- POLYCYCLIC AROMATIC HYDROCARBONS AND PETROLEUM HYDROCARBONS CONCENTRATION IN SOIL EXCEEDING THE SCREENING CRITERIA
- POLYCYCLIC AROMATIC HYDROCARBONS, PETROLEUM HYDROCARBONS AND METALS CONCENTRATION IN SOIL EXCEEDING THE SCREENING CRITERIA

APP'D	NO.	DETAILS	DATE
REVISIONS			
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES – GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

SOIL EXCEEDANCES OF SCREENING CRITERIA

Stantec

DATE 2010/10/22	SCALE 1:1000
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DRAWING NO. 123600017-7	

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THIS DRAWING FORMS PART OF STANTEC CONSULTING LTD. SUPPLEMENTARY PHASE III ENVIRONMENTAL SITE ASSESSMENT REPORT, 2010 AND SHOULD BE READ IN CONJUNCTION WITH THE REPORT.

LEGEND:

- MONITOR WELL LOCATION
- SEDIMENT SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION
- TEST PIT LOCATION (2010)
- TRAP LOCATION
- SURFACE SOIL SAMPLE LOCATION
- LOCATION OF 2008 TEST PITS WHERE SAMPLES WERE SUBMITTED FOR LAB ANALYSIS
- ESTIMATED EXTENT OF FORMER BUILDING FOOTPRINT
- LOCATION OF FOOTING POST
- APPROXIMATE AREA OF SURFACE DEBRIS
- SURFACE STAINING (HYDROCARBON OR ALUMINUM) OUTSIDE OF AREA OF SSTL EXCEEDANCE, THAT SHOULD BE REMOVED
- SOIL CONTAINING CONCENTRATIONS OF PETROLEUM HYDROCARBONS GREATER THAN SSTLS.
- SOIL CONTAINING METALS CONCENTRATIONS GREATER THAN SSTLS.

PATRICIA BAY

MAIN SITE DRAINAGE/CREEK

CREEK 1

CREEK 2

CREEK 3

RESIDENTIAL PLATEAU

SHORE LINE

ATV TRAIL

10

20

30

SE BEACH DUMP-2

SE BEACH DUMP-1

SE BEACH DUMP-3

STRUCTURE SOUTHEAST OF BEACH DUMP

DOT GARAGE (1966)

WOOD FRAME

STAINING

CONCRETE SLAB

DOT POWERHOUSE

DOT BUNK HOUSE

DOT GARAGE

WOOD FOUNDATION

BURIED DEBRIS

DOT POST OFFICE

HBC BUILDING

HBC STORE

RET. WALL

TBM = 100.0m

DOT WASH HOUSE

DOT MESS HALL

DOT RADIOSONDE

DOT HGB1

DOT HGB2

DOT HGB3

DOT FUEL TANKS

HBC RESIDENCE

FUEL DUMP

CONCRETE BLOCK

SOUTHERN POWERHOUSE CONCRETE BLOCK

HOSTEL

UN-MARKED GRAVES

CONCRETE ANTENNA BASE

SITE DUMP

WATERHOLE 1

UN-MARKED GRAVE

CW-1 &SED-10

CW-2 and SED-9

CW-3 & SED-8

CW-5

SED-1

SED-2

SED-3

SED-4

SED-6

MW1

MW2

MW3

MW4

MW5

MW7

MW8

MW9

MW10

MW11

MW12

MW13

INSET #6

SCALE: 1:1000

0 25 50 100m

BAR SCALE 1:1000

APP'D	NO.	DETAILS	DATE
REVISIONS			
215-2300		GOVERNMENT OF NUNAVUT COMMUNITY DEVELOPEMENT COMMUNITY & GOV. SERVICES, KUGLUKTUK	07/15/2010

REFERENCE

DEPARTMENT OF COMMUNITY AND GOVERNMENT SERVICES - GOVERNMENT OF NUNAVUT

SUPPLEMENTAL PHASE III ENVIRONMENTAL SITE ASSESSMENT

OLD TOWN CLYDE RIVER, NU

RISK-BASED AREAS OF PROPOSED SOIL REMEDIATION

Stantec

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2010/10/20	1:1000
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DRAWING NO: 123600017-8

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APPENDIX B

Photographs

Photo 1: Overview of the Site looking east from Patricia Bay.

Photo 2: Overview of the eastern portion of the Site, looking north.

Photo 3: Overview of the shoreline down-gradient from the Site. Note the presence of various types of surficial waste.

Photo 4: Overview of the former upper residential plateau and camping areas on-site.

Photo 5: Overview of the unmarked graves located south of the Fuel Dump.

Photo 6: Overview of the unmarked grave located southeast of Creek 3.

Photo 7: Survey personnel conducting the geophysical survey.

Photo 8: Overview of the Fuel Dump.

Photo 9: Overview of surficial waste present in the former upper residential plateau area.

Photo 10: Overview of the concrete block north of Creek 3 (former southern power house and garage area).

Photo 11: Debris pile located north of the concrete block, north of Creek 2.

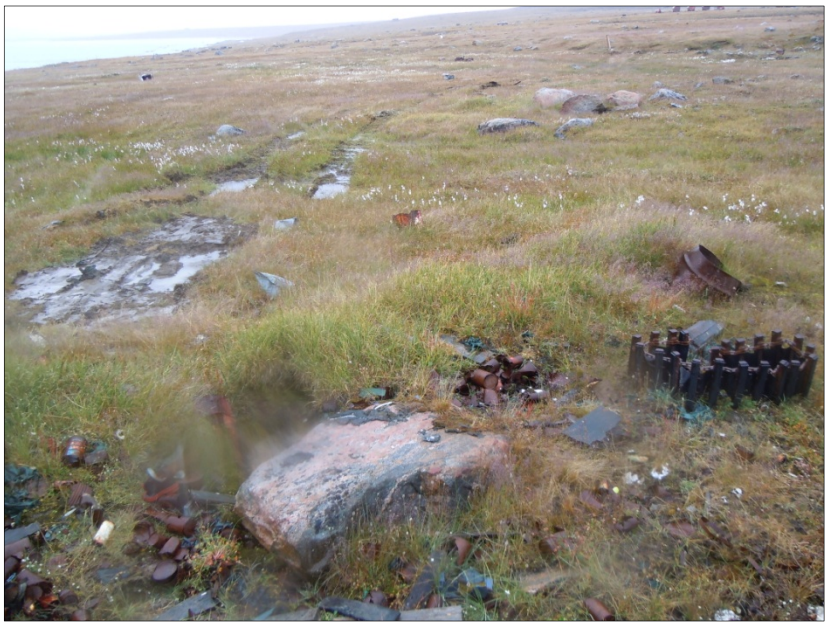


Photo 12: Surface debris located in the former upper residential plateau area

Photo 13: Surface debris located in the former upper residential plateau area

Photo 14: Overview of surface debris located in vicinity of the former southern powerhouse / garage area south of Creek 2.

Photo 15: Overview of the drums located in Site Dump, note black waste sludge on ground surface.

Photo 16: Overview of surficial debris located at the extreme south beach dump.

Photo 17: Overview of the test pit location advanced in the former camp, north of the extreme south beach dump.

Photo 18: Old fuel cans and metal debris located in the extreme south beach dump.

Photo 19: Removing buried drums on the beach.

Photo 20: Excavated drums from the area of the beach.

Photo 21: Buried burnt debris, along the pathway east of the former DOT Post Office.

Photo 22: Heavy sheen observed during excavation of the buried burnt debris area presented in Photo 21.

Photo 23: Location of TP2.5-P where ash material was uncovered located north of the DOT Garage (1966).

Photo 24: Location of test pit TP-NB-DUMP-4 located at the Beach Dump.

Photo 25: The spill way looking west from the Hydrogen Generation Building 1. Note the presence of the white aluminum powder, and areas of stressed vegetation down-gradient of the spill way.

Photo 26: Overview of the surface staining located west of the DOT Power House.

APPENDIX C

Geophysical Report

multiVIEW Locates Inc.
T: 1-800-363-3116, F: 1-866-571-5946
325 Matheson Blvd. East, Mississauga, ON L4Z 1X8
www.multiVIEW.ca

multiVIEW
Insight, not hindsight®

September 3, 2010 File: 16811

Stantec Consulting Ltd.
P.O. Box 38212
Dartmouth, NS
B3B 1X2

Attn: Mr. Rob McCullough

Re: Geophysical Investigation near Clyde River, NU

Dear Mr. McCullough:

Stantec Consulting Limited (Stantec) has retained multiVIEW Locates Inc. to perform a geophysical survey at the above referenced site. The primary objective of the survey was to map the spatial position of any buried metallic objects, and areas of unusual soil conditions that exist within the survey limits. This work was completed between August 5th and 6th, 2010, and this information will be used by Stantec to assist with their environmental site investigation of the property.

Site Description

The site under investigation was located across Patricia Bay at the former location of the Hamlet of Clyde River, approximately 2 km southeast of the present location Clyde River. The site was positioned along the southeastern shore of Patricia Bay. It contained former building foundations, scrap metal and debris from the remains the former hamlet. Four large tanks were the only significant feature that could be referenced that remained on site. Three areas were requested and outlined by Stantec to be surveyed in detail and a background apparent conductivity survey was also requested over a large area of the site. For the purpose of grid survey the first three grid alignments were referenced as shoreline as north.
The first grid, Area 1, was positioned around a former landfill or dump site located south of the four large tanks. Area 1 measured approximately 60m by 80m and extended south west of the 4 large tanks. The southern limit of the tanks were located at grid position (60E,80N). Area 2 was positioned north and east of the four large tanks and north of the first area. The grid used in Area 2 was a continuation of Area 1 grid and abuts at the 60E line. Area 2 was approximately 60m by 150m and the four large tanks were located at (63E, 70N). Area 3 was located approximately 1 km south of the first two areas. This area was approximately 100m by 55m and was positioned over a possible landfill, referenced on site as south dump. The background apparent conductivity survey, referenced as Area 4, was performed over the central area of the abandoned hamlet and was surveyeduntil the end of the day on the last day of surveying.

Field Procedures

Over the first three areas, survey grids were installed on 10 metre centers across the site using survey tapes, a right-angle prism and line-of-site positioning. Each of the first three areas was surveyed using 3 metre line spacing. The survey was performed using a Geonics EM31 terrain conductivity meter. In all survey areas, the electromagnetic data was acquired at a station spacing of 2 metres.
Area 4 was surveyed by using GPS positioning and sampling every 2 seconds while continuously walking over the desired area. The line spacing attempted was 10m to15m however due to surface features and obstacles survey lines were not straight and continuous. This method was requested to achieve a overall sample background reading of the site.

Instrumentation

The EM31 terrain conductivity meter measures a volume of earth approximately 5 metres in diameter around the instrument coils and outputs two measurements: apparent conductivity, and in-phase.
The primary measurement is the apparent conductivity of the surrounding environment. This out-of-phase or quadrature signal detected by the receiver is approximately proportional to the ground conductivity when the unit is over uniform ground. The instrument assumes linear proportionality and outputs conductivity based on this supposition. The term "apparent" is applied to this measurement because the environment where the measurements are made is seldom uniform ground. The apparent conductivity measurement is given in units of milliSiemens per metre (mS/m).
The second EM31 measurement is the in-phase response. This quantity can be a useful indicator of the presence of ferrous metal because the system acts as an "active" magnetometer. In addition, in conductive environments where the conductivity exceeds 100 mS/m (the point where the quadrature linearity assumption begins to breakdown), conductive ground also gives a strong in-phase response. The in-phase measurements are given in parts per thousand (ppt), deviation between the expected coupling between the transmitter and the receiver.
The instrument can output large positive or negative readings when traversing over shallow metal targets. The magnitude and sign of the reading in such instances is dependent on the size, shape, orientation and depth of burial of the target with respect to the instrument. The instrument was calibrated daily in an area of low apparent conductivity and in-phase readings.

Data Compilation and Presentation

The results of the EM31 survey are shown on the enclosed figures. Figures 1 to 7 display the colour contoured EM31 apparent conductivity data and in-phase data. In the data sets, background electromagnetic values are denoted by the green to yellow-green colour contours while elevated responses are denoted by orange, red or deep blue colour contours.

Discussion of Results

These data sets were analyzed on site and compared to site conditions and surface features. Any elevated reading or target that was determined not to be caused by a surface feature was determined to be an anomaly.

No anomalies were detected in Area 1, Area2 and Area 3. Most of the elevated readings were determined to be cause by surface features. The remaining elevated apparent conductivity readings were caused by the varying depth to permafrost and the salt in the ground water caused by the proximity to the sea shore. The frozen permafrost reduces the conductivity and salt water increases conductivity.
The data in area 4 shows one linear anomaly locate at UTM (E516455, N7816855) and extend to UTM (E516550, N7861790).

Please refer to the additional information in Table 1 for details regarding restrictions and limitations of these data. If you have any questions, or points requiring clarification, please contact the undersigned at your earliest convenience.

Respectfully submitted,

multiVIEW Locates Inc.

J. Halverson

Joel Halverson,

Geophysical Technologist

EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

multiVIEW Project No.: 16811

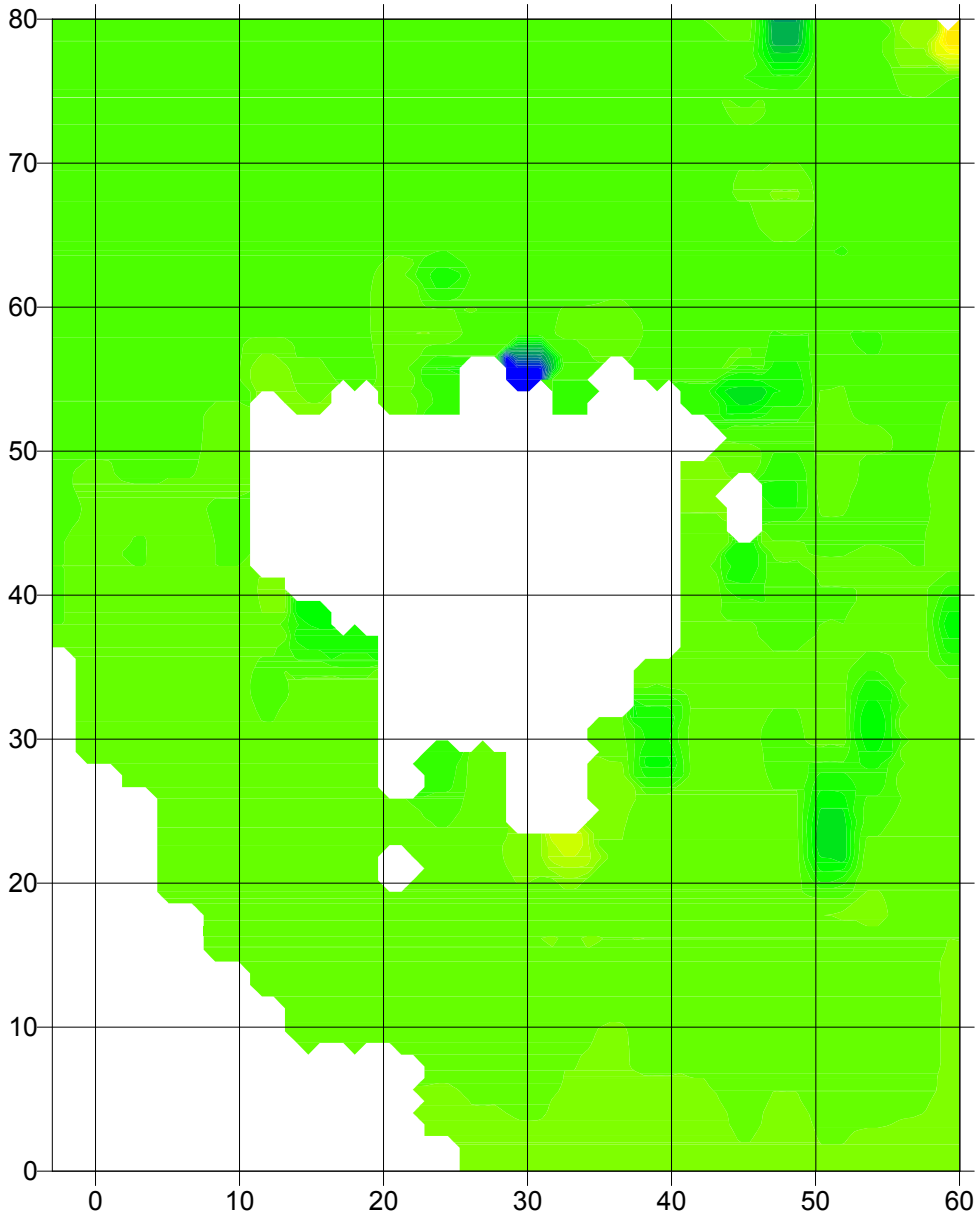
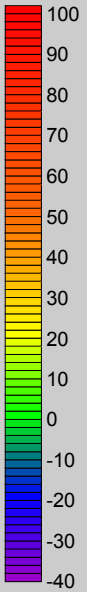


Figure 1: Area 1

EM31: Apparent Conductivity

Legend



(mS/m)

Metres

multiVIEW Subsurface Mapping

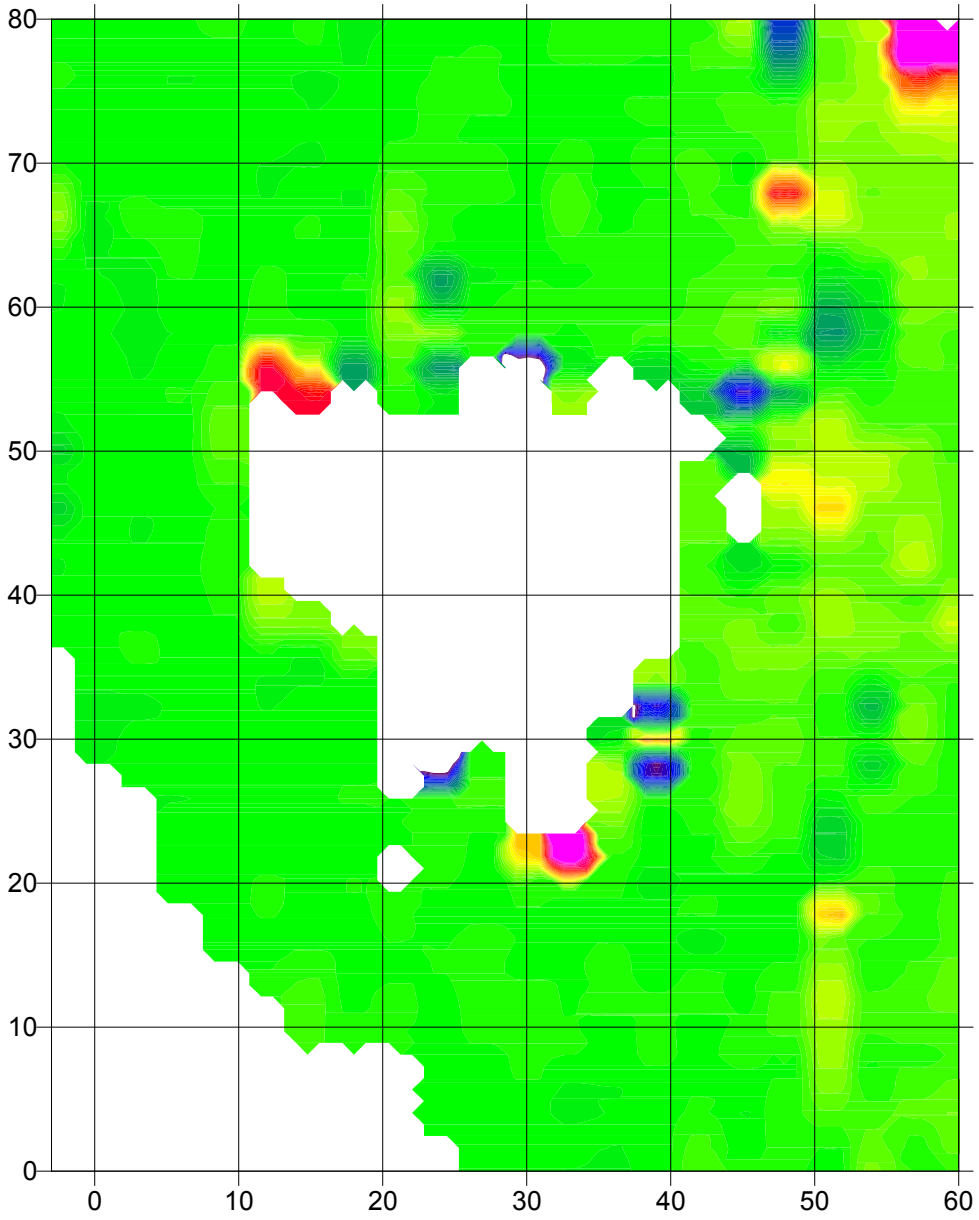
EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

multiVIEW Project No.: 16811

Figure 2: Area 1

EM31: In-Phase Data



Legend

12
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-7
-8
-9
-10
-11
-12
-13
-14
-15
-16
(ppt)

0 5 10 15 20 25

Metres

multiVIEW Subsurface Mapping

EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

multiVIEW Project No.: 16811

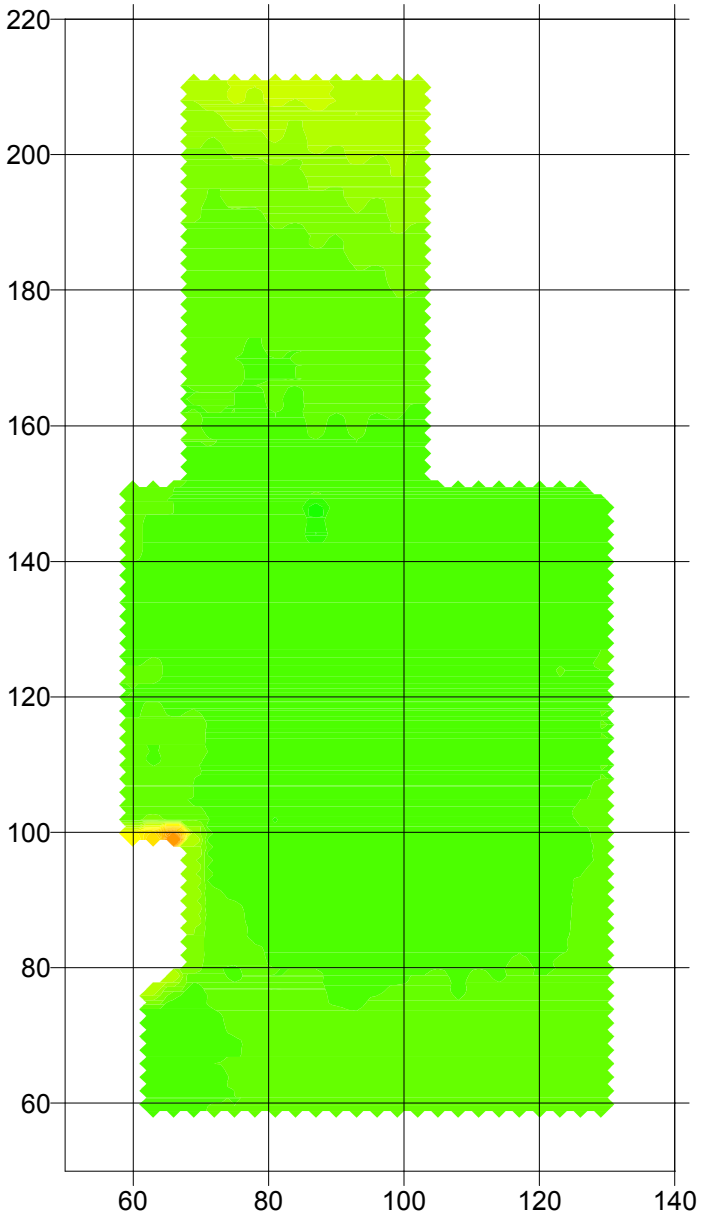
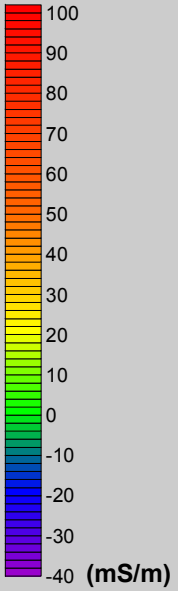
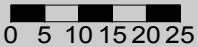


Figure 3: Area 2

EM31: Apparent Conductivity

Legend





Metres

multiVIEW Subsurface Mapping

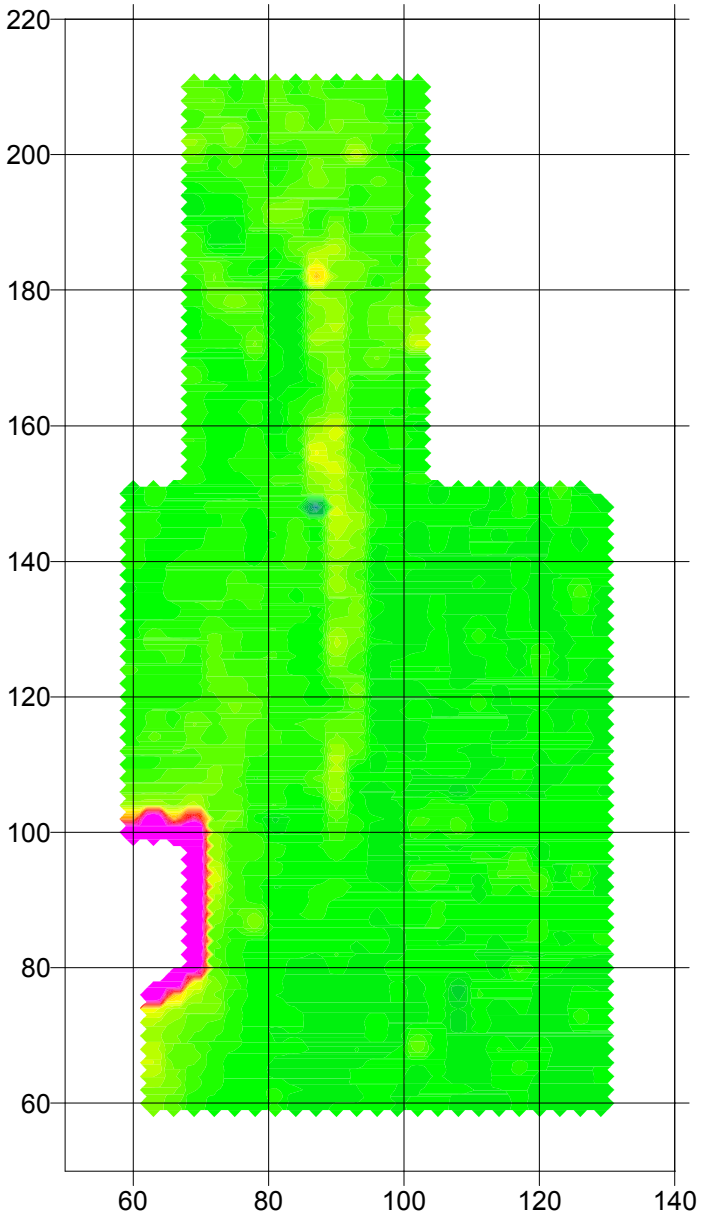
EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

multiVIEW Project No.: 16811

Figure 4: Area 2

EM31: In-Phase Data



Legend

12
11
10
9
8
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-11
-12
-13
-14
-15
-16
(ppt)

0 5 10 15 20 25

Metres

multiVIEW Subsurface Mapping

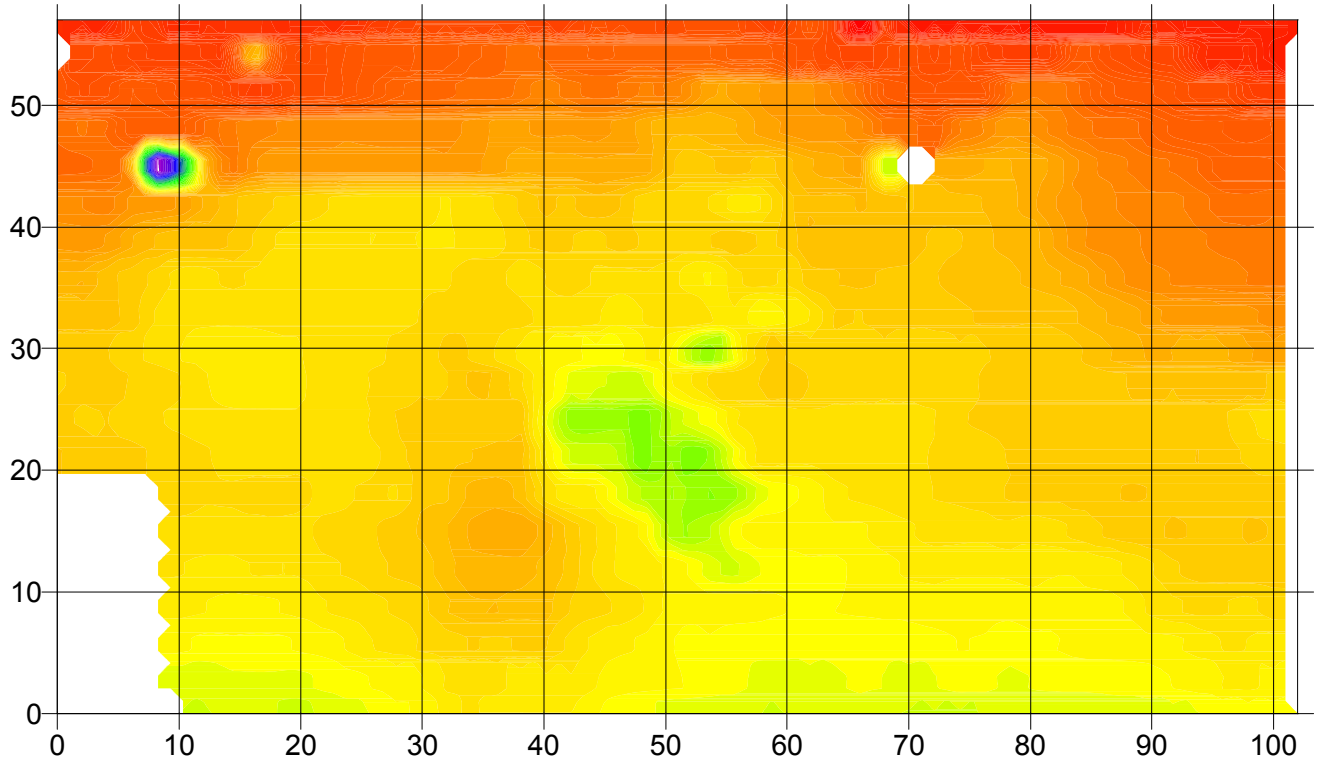
EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

multiVIEW Project No.: 16811

Figure 5: Area 3

EM31:
Apparent Conductivity



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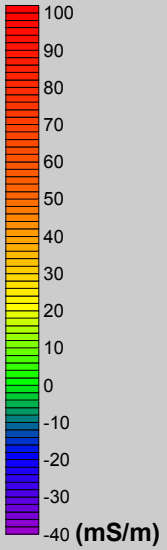
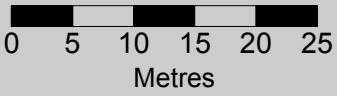




multiVIEW Subsurface Mapping

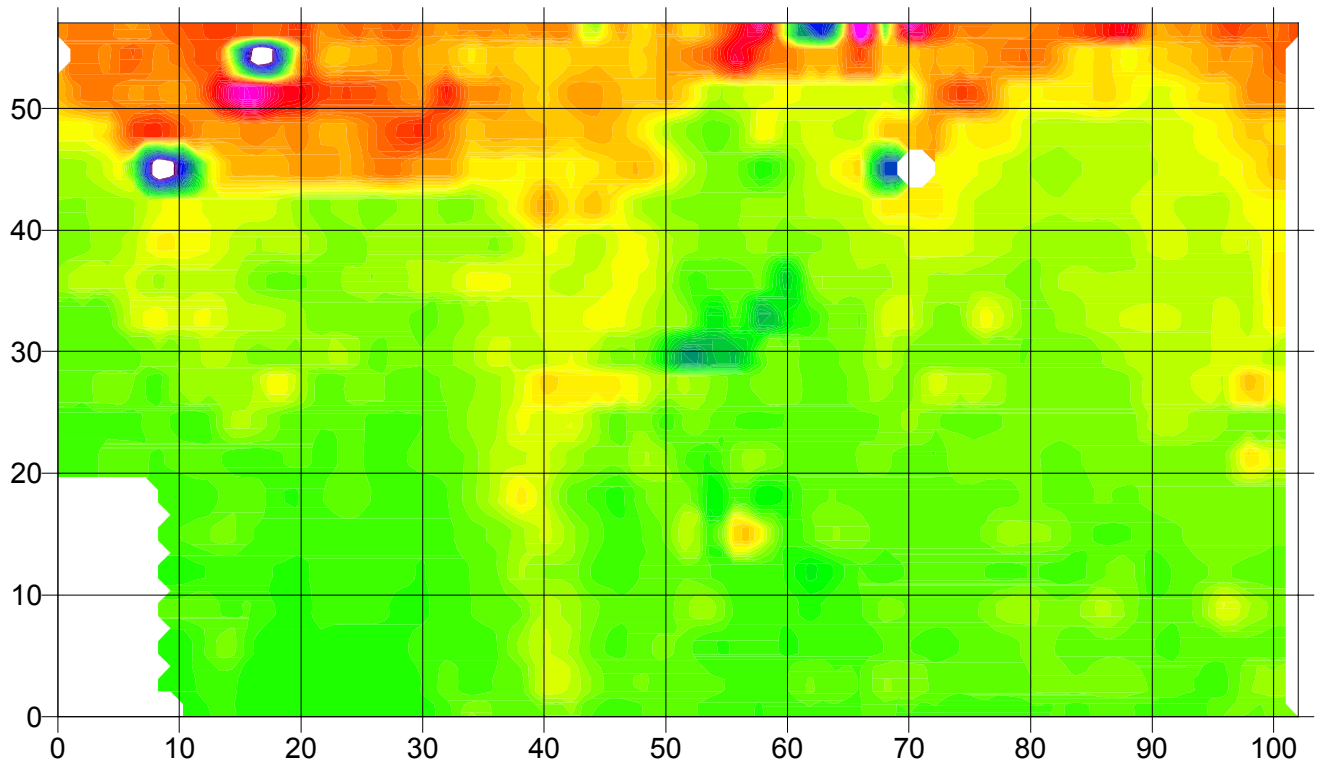
EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

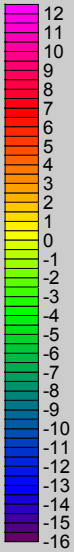
multiVIEW Project No.: 16811

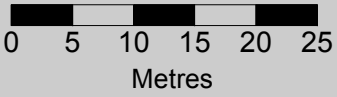
Figure 6: Area 3

EM31: In-Phase Data



Legend





multiVIEW Subsurface Mapping

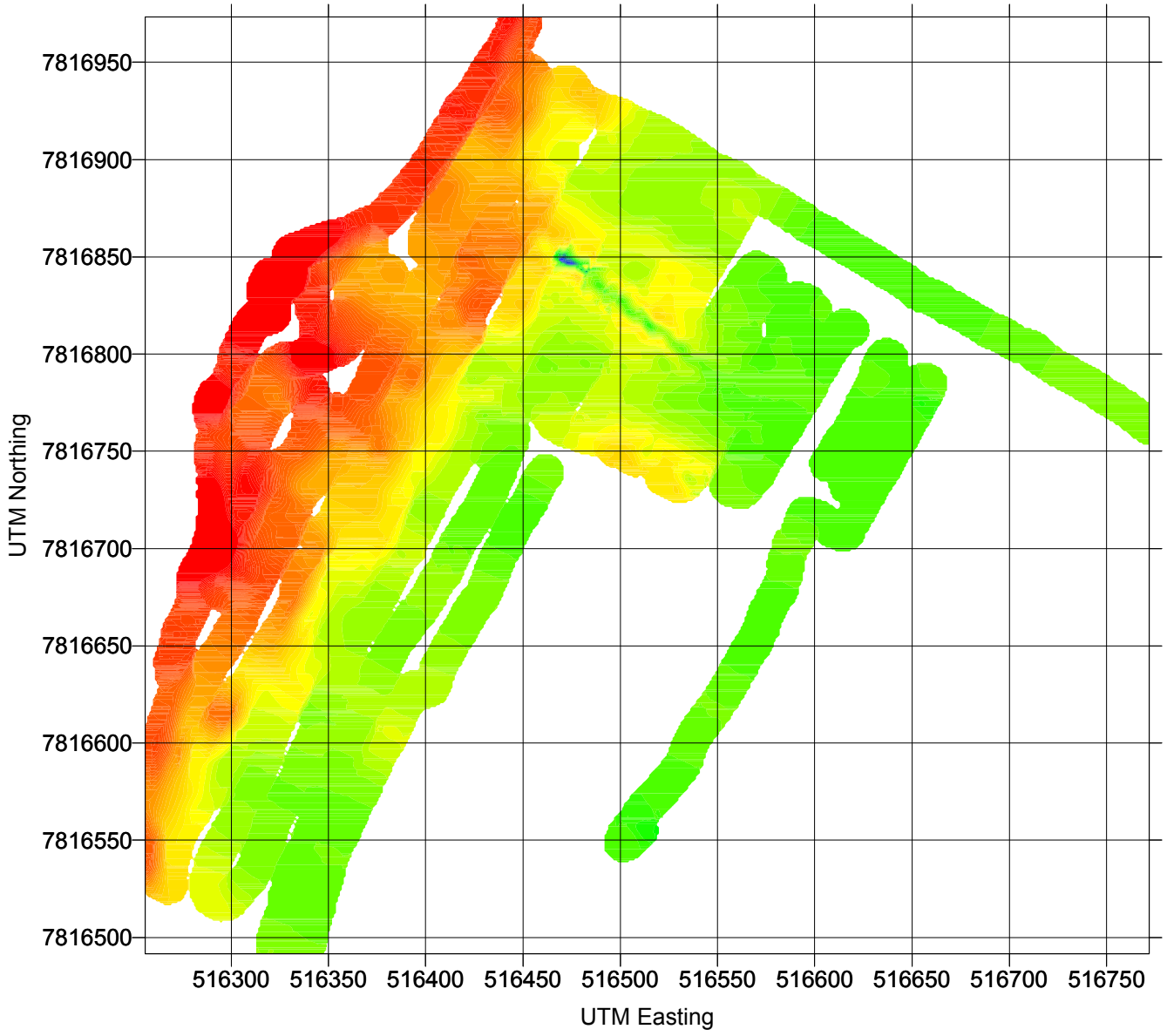
EM31 Survey near Clyde River, NU - August 6, 2010

Customer: Stantec Consulting Ltd.

multiVIEW Project No.: 16811

Figure 7: Area 4

EM31: Apparent Conductivity



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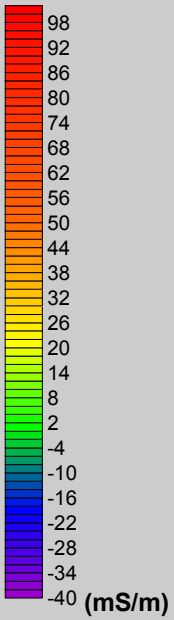

UTM Grid 19W

multiVIEW Subsurface Mapping

APPENDIX D

Test Pit Logs

Stantec

TEST PIT RECORD

TP0.5-G

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP0.5-G**

DATES (mm/dd/yy): BORING **8/10/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, medium grained, dark brown, rootlets, wet		BS	1	*(1,5)				5	54.4			Backfilled with cuttings
		- orange staining from 0.55-0.6m - grey, wet (saturated) below 0.6 m		BS	2	*(1)				40	20.7			
				BS	3					ND	17.5			
				BS	4	*(1)				25	2.4			
1		End of test pit at 0.8 m due to refusal on rock. *(1)=Submitted for analysis of BTEX / F1-F4 *(5)=Submitted for analysis of pH *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP1-F

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP1-F**

DATES (mm/dd/yy): BORING **8/10/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, medium grained, dark brown, moist, stained, strong hydrocarbon odour		BS	1					35	85.5			Backfilled with cuttings
		- brown, strong hydrocarbon odour from 0.35-0.7 m.		BS	2					10	71.5			
		- silty, medium to fine grained, grey. moist, strong hydrocarbon odour, sheen present.		BS	3	*(1)				20	76.4			
1				BS	4	*(1)				ND	20.8			
		End of test pit at 1.9 m												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP1-FG

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP1-FG
DATES (mm/dd/yy): BORING 8/10/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly , medium grained, dark brown, rootlets / fibrous, moist, staining at surface.		BS	1	*(1)				5	35.6			
		- brown at 0.15 m												
		- metal debris at 0.2 m												
				BS	2					ND	16.8			
		- grey, wet at 0.75 m												
		SAND, trace gravel, medium to fine grained, wet, slight hydrocarbon odour		BS	3					ND	16.5			Backfilled with cuttings
1														
2				BS	4					ND	2.4			
		End of test pit at 2.2 m due to refusal on rock.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP1-G

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP1-G
DATES (mm/dd/yy): BORING 8/10/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (10 mm)												
		SAND, gravelly, trace cobbles, coarse grained, dark brown, rootlets, moist												
		- becomes brown at 0.1 m		BS	1					ND	2.3			Backfilled with cuttings
		- orange staining, wet below 0.5 m		BS	2	*(1)				10	2.7			
1		- saturated, orange from 1.0-1.2 m												
		- becomes grey, medium grained frozen with ice crystals at 1.2 m		BS	3					ND	2.1			
				BS	4					5	6.8			
		End of test pit at 1.3 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP1-H

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP1-H**

DATES (mm/dd/yy): BORING **8/10/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, fine to coarse grained, dark brown, rootlets, moist - brown from 0.1-1.2 m		BS	1					30	0.9			
				BS	2	*(1)				70	1.5			Backfilled with cuttings
1		SAND, some gravel, medium to coarse grained, wet - frozen, ice crystals from 1.2-1.3 m - grey below 1.2 m		BS	3					70	0.4			
				BS	4					90	1.2			
2		End of test pit at 1.3 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP1-J

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP1-J

DATES (mm/dd/yy): BORING 8/10/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Surface debris: rusty barrels, cans, naptha containers, plastic, used oil containers. SAND, some gravel, medium to coarse grained, brown, moist.		BS	1	*(1,3)				70	2.4			Backfilled with cuttings
		- orange staining from 0.65-0.8 m		BS	2					ND	ND			
		- frozen, ice crystals from 0.8-.95 m		BS	3					60	2.0			
				BS	4					ND	8.5			
1		End of test pit at 0.95 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP1.5-E

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP1.5-E**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)												
		SAND, silty, fine to medium grained, rootlets, moist.		BS	1	*(1)				ND	3.5			Backfilled with cuttings
		SAND, some silt, some gravel, grey, wet.		BS	2					10	2.1			
		- frozen, ice crystals at 0.95 m		BS	3					15	2.2			
1				BS	4					ND	2.8			
		End of test pit at 1.1 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP1.5-EF

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP1.5-EF**

DATES (mm/dd/yy): BORING **8/10/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)												
		SAND, some silt, medium grained, dark brown, rootlets		BS	1					35	240.0			Backfilled with cuttings
		SAND, gravely, medium grained, wet		BS	2					ND	382.0			
1		SILT, trace sand, grey, wet		BS	3	*(1)				ND	2.9			
		- frozen, from 1.0-1.4 m		BS	4					15	3.9			
		End of test pit at 1.4 m due to refusal on permafrost.												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP1.5-F

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP1.5-F
DATES (mm/dd/yy): BORING 8/10/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)												
		SAND, silty, medium grained, rootlets, medium brown, moist.		BS	1	*(1)				10	34.5			
		SAND, gravelly, medium grained, brown, wet - rope at 0.2 m - becomes saturated at 0.3 m		BS	2					10	2.3			
1				BS	3					ND	2.5			Backfilled with cuttings
				BS	4					5	2.7			
		End of test pit at 1.6m. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP1.5-FG

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP1.5-FG
DATES (mm/dd/yy): BORING 8/10/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)												
		SAND, gravelly, medium grained, dark brown, rootlets, moist		BS	1					25	3.8			Backfilled with cuttings
		- brown below 0.3 m												
		- wet from 0.6-0.9m		BS	2					ND	2.8			
		SAND, trace gravel, medium to fine grained, wet												
		- frozen, ice crystals from 0.9-1.0 m		BS	3					15	2.8			
1				BS	4	*(1)				20	6.4			
		End of test pit at 0.6 m due to refusal on permafrost												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP1.5-L

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP1.5-L**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, rootlets, dark brown, moist.												
		- becomes brown to light brown below 0.1 m		BS	1					ND	1.0			Backfilled with cuttings
		- becomes grey, wet at 0.8 m		BS	2					ND	0.3			
		- frozen, ice crystals below 0.9 m		BS	3	*(1,6)				ND	1.7			
1				BS	4					ND	1.2			
		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(6)=Submitted for analysis of particle size												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP1.5-M

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP1.5-M
DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, some gravel, medium grained, dark brown, hydrocarbon odours, moist - metal pipe (75 mm dia) encountered from 0.1-0.2 m		BS	1					75	142.0			
		GRAVEL, some sand, subangular, fine grained, hydrocarbon odours, wet, multicolored - black staining from 0.45-0.47 m		BS	2	*(3,4,7)				55	170.0			Backfilled with cuttings
		SAND, fine to medium grained, grey, wet - frozen, ice crystals from 1.0-1.1 m		BS	3					95	26.9			
1		*(1)= Submitted for analysis of BTEX / F1-F4		BS	4	*(1)				70	6.3			
		End of test pit at 1.1 m due to refusal on permafrost. *(3)=Submitted for analysis of metals *(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's) *(7) = submitted for analysis of Petroleum Hydrocarbons Sub-Fractionation												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP1.5-N

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP1.5-N

DATES (mm/dd/yy): BORING 8/7/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, coarse grained, trace rootlets, brown, moist - orange staining from 0.3-0.35 m		BS	1	*(1)				10	10.3			Backfilled with cuttings
				BS	2					10	2.1			
		SAND, some gravel, fine to medium grained, wet - frozen, ice crystals from 1.0-1.1 m		BS	3					5	3.6			
1		End of test pit at 1.1 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP1.5-O

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP1.5-O**

DATES (mm/dd/yy): BORING **8/7/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravely, trace organic matter, coarse grained, brown, trace rootlets, moist		BS	1					10	0.6			Backfilled with cuttings
		- orange staining from 0.3-0.35 m												
		- trace gravel, medium to fine grained, light brown, wet below 0.4 m		BS	2					10	2.7			
		- orange staining from 0.7-0.8 m												
		- grey, frozen, ice crystals from 0.8-0.85 m		BS	3					10	2.3			
				BS	4					10	4.9			
		End of test pit at 0.85 m due to refusal on permafrost.												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP1.5-P

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP1.5-P**

DATES (mm/dd/yy): BORING **8/7/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Surface debris (wire, metal, wood and plastic) all around test pit area. SAND, gravelly, coarse grained, brown, wet.		BS	1	*(1,3)				15	7.1			Backfilled with cuttings
		SAND, trace gravel, fine grained, brown, wet. - frozen, ice crystals from 0.85-0.9 m		BS	2					10	1.6			
				BS	3					10	3.0			
1		End of test pit at 0.9 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-DE

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2-DE
DATES (mm/dd/yy): BORING 8/15/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown fibrous organic matter, moist (100 mm)		BS	1					ND	0.1			
		SAND, gravelly, dark brown, some cobbles, rootlets, moist												
				BS	2					ND	0.5			Backfilled with cuttings
		- infiltration at 0.6 m		BS	3	*(1)				ND	0.9			
		- becoming grey, silty sand to sandy silt, cobbles, wet at 0.7 m.		BS	4					ND	0.8			
1		- permafrost, ice crystals from 1.15 m - 1.25 m.												
		End of test pit at 1.25 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-E

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2-E
DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown fibrous organic matter, moist (20 mm)												
		SAND, some silt, gravelly, medium grained, rootlets, moist		BS	1					ND	3.2			
				BS	2	*(1)				ND	62.8			
		SAND, some gravel, some cobble, medium grained, grey, wet		BS	3					ND	2.3			
1		- wet / frozen with ice cristals below 1.1 m		BS	4					45	7.8			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-EF

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP2-EF**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)												
		SAND, gravely, medium grained, brown, rootlets, wet		BS	1	*(1,3,4,7)				110	244.0			Backfilled with cuttings
		SAND, some gravel, some cobble, medium to fine grained, grey, wet		BS	2					40	17.6			
		- frozen, ice crystals from 1.0-1.1 m		BS	3					15	2.6			
1				BS	4					15	5.5			
		End of test pit at 1.1 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
		*(7)=Submitted for analysis of VOC sub-frac												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-F

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP2-F**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)												
		SAND, some gravel, medium grained, brown, rootlets, trace orange mottling, wood debris, moist		BS	1	*(1,5)				15	4.1			
		- @0.6 m: organic matter, fibrous, black, moist, some cobble (50mm)		BS	2					20	0.9			Backfilled with cuttings
1		SAND, some silt, some gravel, some cobbles, medium / fine grained, grey, wet.		BS	3					10	2.3			
		- frozen, ice crystals from 1.2-1.45 m		BS	4					20	2.5			
2		End of test pit at 1.45 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(5)=Submitted for analysis of pH												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-GH

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2-GH
DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)		BS	1					10	4.6			Backfilled with cuttings
		SAND, gravelly, some silt, medium grained, brown, moist												
		- @0.35 m: organic matter, fibrous, black, moist												
		- wet below 0.4 m		BS	2	*(1)				20	3.8			
		- frozen, ice crystals from 0.8-0.9 m		BS	3					5	3.5			
				BS	4					15	2.5			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-J

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP2-J

DATES (mm/dd/yy): BORING 8/10/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, some gravel, medium grained, brown, rootlets, moist - light brown from 0.1-0.2 m - dark brown from 0.2-0.3 m - brown, wet from 0.3-1.15 m		BS	1	*(1,3)				ND	0.4			
				BS	2					ND	ND			Backfilled with cuttings
1		- grey, frozen below 1.15 m		BS	3					5	0.1			
				BS	4					ND	0.2			
		End of test pit at 1.25 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-K

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP2-K**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1					ND	1.0			Backfilled with cuttings
		SAND, medium grained, brown, rootlets, moist		BS	2	*(1)				5	1.1			
		- orange staining from 0.76-0.8 m - grey at 0.8 - frozen at 0.9 m		BS	3					ND	0.7			
1				BS	4					ND	1.0			
		End of test pit at 1.0 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-L

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP2-L**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (10 mm)												
		SAND, some gravel, medium to coarse grained, brown, moist.		BS	1					ND	0.6			Backfilled with cuttings
		GRAVEL, sandy, angular to subangular, fine to coarse grained, moist.		BS	2					5	0.7			
		SAND, medium to fine grained, grey, wet - orange staining from 0.78 - 0.8 m		BS	3					5	1.2			
1		- frozen, ice crystals below 0.9 m		BS	4					ND	2.7			
		End of test pit at 1.0 m due to refusal on permafrost. *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-M

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2-M
DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, medium to coarse grained, dark brown, moist, trace hydrocarbon odour - surface heavily stained.		BS	1					5	6.2			
		GRAVEL, some sand, fine grained, subangular, multicolored.		BS	2	*(1)				95	44.8			Backfilled with cuttings
		SAND, medium grained, brown, moist - fine grained, grey from 0.55 - 1.25 m												
1		- frozen at 1.15 m		BS	3					45	12.8			
				BS	4					25	4.1			
		End of test pit at 1.25 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-N

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP2-N**

DATES (mm/dd/yy): BORING **8/7/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, medium to coarse grained, brown, moist - rootlets from 0.0-0.1 m		BS	1					60	0.9			
		SAND, fine to medium grained, light brown, wet		BS	2					60	0.5			Backfilled with cuttings
		- grey, frozen, ice crystals from 1.05-1.15 m												
1				BS	3	*(1)				90	4.1			
		End of test pit at 1.15 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2-O

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2-O
DATES (mm/dd/yy): BORING 8/6/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, sandy, rootlets, moist (20 mm)												
		SAND, medium grained, reddish brown, rootlets, wet, some silt												
		- brown below 0.3 m		BS	1					15	ND			Backfilled with cuttings
		- grey below 1.0 m		BS	2					15	0.2			
1				BS	3					15	0.2			
		End of test pit at 1.15 m due to refusal on rock.												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2.5-MN

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2.5-MN
DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, trace gravel, medium to fine grained, brown, rootlets, moist, hydrocarbon odour (200 mm)		BS	1					50	224.0			
		GRAVEL, sandy, subrounded, subangular, brown, moist, hydrocarbon odour, grey		BS	2					220	569.0			Backfilled with cuttings
1		- grey, wet, hydrocarbon odour below 0.9 m		BS	3	*(1)				50	300.0			
				BS	4					10	11.6			
2		End of test pit at 1.5 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2.5-NO

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP2.5-NO
DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (10 mm)												
		SAND, some gravel, medium grained, dark brown, rootlets, moist - light brown below 0.1 m - orange staining from 0.25-0.28 m		BS	1					45	2.3			
		SAND, silty, some gravel and cobbles, dark brown, moist, fine grained - grey below 0.7 m		BS	2	*(1,3)				40	1.7			Backfilled with cuttings
1				BS	3					45	6.0			
				BS	4					45	2.1			
		End of test pit at 1.2 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP2.5-P

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP2.5-P**

DATES (mm/dd/yy): BORING **8/7/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Debris: broken glass, dog homes, pipe FILL: organics, gravel, sand, silt, moist		BS	1	*(3)				ND	6.9			Backfilled with cuttings
				BS	2	*(1,2,4,5)				50	55.0			
		SILT, sandy, grey, frozen, ice crystals		BS	3					ND	4.1			
1		End of test pit at 0.7 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(2)=Duplicated sample taken *(3)=Submitted for analysis of metals *(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's) *(5)=Submitted for analysis of pH *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-D

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP3-D

DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND: gravelly, brown, medium grained, rootlets, moist.		BS	1					ND	1.4			Backfilled with cuttings
		Organic Matter, sandy, gravel, brown / black, moist.		BS	2					ND	4.3			
		SAND: some silt, some gravel, fine to medium grain, wet.		BS	3	*(1)				ND	3.3			
		- frozen, ice crystals from 0.85-0.95 m												
				BS	4					ND	1.6			
1		End of test pit at 0.95 m due to refusal.												
		Upon completion test pit open and wet.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-DE

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3-DE**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous organic matter, moist (20 mm)												
		SAND, gravely, medium grained, brown, rootlets, moist.		BS	1					ND	2.8			Backfilled with cuttings
		- orange staining from 0.3-0.5 m												
		- metal clad at 0.4 m		BS	2					ND	3.6			
		SAND, gravely, some cobbles, medium to fine grained, grey, moist.		BS	3	*(1)				5	7.2			
1		- frozen, ice crystals from 1.0-1.15 m		BS	4					ND	2.3			
		End of test pit at 1.15 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-E

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3-E**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (300 mm)		BS	1					ND	1.3			Backfilled with cuttings
		SAND, gravely, medium grained brown, mottles, moist.		BS	2	*(1,2)				5	14.6			
		SAND, some gravel, some cobble, medium to fine grained, grey, moist - wet from 0.75-0.8 m		BS	3					10	10.7			
		- frozen, ice crystals from 0.7-0.9 m		BS	4					10	3.6			
1		End of test pit at 0.9 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(2)=Duplicated sample taken *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-F

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3-F
DATES (mm/dd/yy): BORING 8/12/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist rootlets (10 mm)												
		SAND, gravelly, some cobble, brown, moist - no rootlets below 0.1m		BS	1					ND	1.5			
				BS	2					ND	1.1			Backfilled with cuttings
1		- frozen, ice crystals from 1.0-1.2 m		BS	3	*(1)				ND	1.6			
				BS	4					5	1.1			
		End of test pit at 1.2 m due to refusal on permafrost.												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-FG

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3-FG**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)		BS	1					ND	2.9			Backfilled with cuttings
		SAND, trace gravel, trace silt, medium grained, moist - rootlets stop at 0.1 m												
		- grey, wet below 0.5 m		BS	2					ND	1.9			
		- frozen, ice crystals from 0.5-0.8 m		BS	3	*(1)				ND	2.8			
				BS	4					ND	1.6			
		End of test pit at 0.8 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-GH

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP3-GH**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, medium grained, dark brown, rootlets, moist - rootlest stop at 0.1 m - orange staining from 0.4-0.7 m		BS	1					10	2.4			Backfilled with cuttings
				BS	2	*(1)				20	3.3			
		SAND, some gravel, some cobble, medium grained, wet.												
1		- frozen, ice crystals, grey from 1.1-1.2 m		BS	3					10	1.5			
				BS	4					10	1.8			
		End of test pit at 1.2 m due to refusal. *(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-K

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3-K**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		FILL: sand, gravel, rock, brown, moist		BS	1					ND	ND			Backfilled with cuttings
		Black fibrous ORGANIC matter, moist (50 mm) - pipe (25mm Dia.) at 0.15 m		BS	2	*(1)				80	0.3			
		GRAVEL, some sand, fine to medium grained, angular to subangular, rootlets, moist												
		SAND, gravelly, some cobble, medium grained, wet		BS	3					75	ND			
1		- frozen, ice crystals below 1.2 m		BS	4					ND	ND			
		End of test pit at 1.2 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-L

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3-L**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, moist (10 mm)												
		SAND, some gravel, medium to coarse grained, grey to brown, rootlets, moist - timbers and wood, pipe from 0.2-0.5 m		BS	1	*(1,3)				ND	1.4			
		Black fibrous ORGANIC matter, silty, sandy, wet (150 mm)		BS	2					ND	0.8			Backfilled with cuttings
1		GRAVEL, sandy, fine to coarse grained, subangular to angular, brown, wet. - frozen, ice crystals below 0.8 m		BS	3					ND	0.7			
				BS	4					ND	0.8			
2		End of test pit at 1.2 m due to refusal on permafrost.												
3		*(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *ND= not detected												

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-M

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3-M**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black/brown fibrous ORGANIC matter,rootlets, moist (20 mm)		BS	1					70	1.9			
		SAND, silty, brown, rootlets, moist												
		SAND, some gravel, trace cobble, medium to coarse grained, dark brown, moist												Backfilled with cuttings
		- electrical condiut (25mm)		BS	2	*(3)				75	1.0			
				BS	3	*(1)				10	18.5			
1		End of test pit at 0.9 m due to refusal on rock & permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-N

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP3-N

DATES (mm/dd/yy): BORING 8/7/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (10 mm)		BS	1					5	0.9			
		SAND, trace gravel, light brown, trace rootlets, wet. - metal pipe / electrical conduit (75mm dia.) from 0.05-0.075 m												
		SAND, gravelly, some cobble, brown, hydrocarbon odours, wet		BS	2	*(1,3,4)				200	293.0			Backfilled with cuttings
1				BS	3	*(1)				150	193.0			
		Rock												
		End of test pit at 1.2 m due to refusal on rock.												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3-O

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP3-O**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, sandy, rootlets, moist (40 mm)		BS	1					ND	0.4			Backfilled with cuttings
		SILT, sandy, medium grained, grey, pebbles, wet		BS	2					5	0.4			
				BS	3	*(1)				10	1.5			
1		End of test pit at 0.75 m due to refusal on rock.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-DE

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3.5-DE

DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravely, medium grained, brown, moist.		BS	1	*(3)				ND	5.7			Backfilled with cuttings
		- orange staining from 0.35-0.38 m		BS	2	*(1,2)				10	79.9			
		Black fibrous ORGANIC matter, sandy, wet (50 mm)												
		SAND, trace silt, medium grained, grey, wet.		BS	3					15	11.8			
		- frozen, ice crystals from 0.8-0.9 m		BS	4					35	14.3			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(2)=Duplicated sample taken												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-E

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3.5-E**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)												
		SAND, some gravel, medium grained, brown, moist.												
		- @0.4 m: organic matter, fibrous, black, wet, sandy, silty, gravely (10mm)		BS	1	*(3)				15	138.0			Backfilled with cuttings
				BS	2					85	258.0			
		SAND, trace silt, medium to fine grained, brown, moist, hydrocarbon odour from 0.45m - 0.9 m												
		- wet from 0.6-0.8 m		BS	3	*(1,4)				160	508.0			
		- grey, frozen below 0.8 m												
				BS	4					35	14.3			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-F

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3.5-F
DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, some organic matter, medium grained, brown, rootlets, moist		BS	1					15	4.6			Backfilled with cuttings
		SAND, trace gravel, some silt, some organic matter, grey		BS	2	*(1,3,4,7)				570	1152.0			
		- frozen, ice crystals from 0.8-0.95 m		BS	3					60	80.5			
				BS	4					10	52.6			
1		End of test pit at 0.95 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
		*(7)=Submitted for analysis of PCB's												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-FG

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3.5-FG**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1					ND	1.3			Backfilled with cuttings
		SILT, sandy, some gravel, brown, rootlets, moist.		BS	2					ND	1.6			
		- grey, rootlets stop, wet at 0.3 m		BS	3	*(1)				ND	1.7			
		- frozen, ice crystals from 0.45-0.55 m		BS	4					ND	1.4			
		End of test pit at 0.6 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-GH

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3.5-GH
DATES (mm/dd/yy): BORING 8/15/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		GRAVEL with rootlets.		BS	1	*(1,3,4)				10	1.2			Backfilled with cuttings
		SAND, gravelly, some cobbles, moist		BS	2					ND	0.5			
1		- frozen, ice crystals from 1.25-1.35 m		BS	3					ND	0.5			
				BS	4					5	1.0			
		End of test pit at 1.35 m due to refusal on permafrost.												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-I

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP3.5-I**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)		BS	1					10	2.4			
		SAND, trace silt, trace gravel, fine grained, dark brown, rootlets, moist - brown, wet from 0.1-0.45m - becomes grey at 0.45 m		BS	2					15	3.3			Backfilled with cuttings
		- frozen, ice crystals from 0.6-0.7 m		BS	3	*(1)				15	5.0			
				BS	4					10	2.1			
		End of test pit at 0.7 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-KL

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3.5-KL
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, gravelly, dark brown, roots, moist.		BS	1					ND	1.0			
		- becomes brown sand below 0.2 m - orange staining from 0.2-0.6 m		BS	2	*(2,3)				ND	25.2			Backfilled with cuttings
		- frozen, ice crystals from 0.95 - 1.05 m		BS	3	*(1,4)				25	97.9			
1				BS	4					ND	2.6			
		End of test pit at 1.05 m due to refusal on permafrost. *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP3.5-LM

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP3.5-LM**

DATES (mm/dd/yy): BORING **8/13/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, moist (20 mm)												
		SAND, silty, fine grained, dark brown, rootlets, moist		BS	1					10	ND			
		- copper line encountered at 0.3 m		BS	2					ND	ND			Backfilled with cuttings
		Dark brown fibrous ORGANIC matter, moist (50 mm)		BS	3					ND	ND			
		SAND, gravelly, some cobbles, medium to coarse grained, wet, brown		BS	4	*(1)				ND	1.4			
1		- frozen, ice crystals at 0.9 m		BS	5					ND	0.9			
		End of test pit at 1.15 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP3.5-MN

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3.5-MN
DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (20 mm)												
		SAND, gravelly, cobbly, trace silt, medium grained,brown, moist - rootlets to 0.4 m		BS	1					ND	6.3			Backfilled with cuttings
				BS	2	*(1)				ND	6.1			
1		- frozen, ice crystals below 1.15 m		BS	3					ND	5.4			
				BS	4					ND	4.7			
		End of test pit at 1.25 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP3.5-NO

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP3.5-NO

DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (70 mm)		BS	1					40	1.4			
		SAND, silty, fine to medium grained, dark brown, rootlets, moist - grown/grey below 0.15 m - some silt, some gravel, trace cobbles from 0.5-0.75 m		BS	2	*(1)				35	1.4			Backfilled with cuttings
		- fine - medium grained, wet grey below 0.75 m		BS	3					30	1.9			
				BS	4					35	1.3			
1		End of test pit at 0.75 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4-DE

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP4-DE**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)		1	1					ND	2.1			
		GRAVEL, sandy, subrounded to subangular, coarse grained, moist.												Backfilled with cuttings
		SAND, silty, some gravel, trace cobble, fine grained, brown, moist.		2	2	*(1)				15	1.5			
		- wet from 0.5-0.7 m - grey from 0.5-0.8 m - frozen, ice crystals below 0.7 m		3	3					15	1.4			
				4	4					ND	2.4			
1		End of test pit at 0.8 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4-E

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP4-E**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1					ND	1.4			Backfilled with cuttings
		SAND, some silt, some gravel, trace cobble, rootlets, moist		BS	2					ND	0.4			
		- rootlets, grey, moist below 0.3m		BS	3	*(1)				ND	1.6			
		- frozen, ice crystals from 0.5-0.6 m		BS	4					ND	1.7			
		End of test pit at 0.6 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4-F

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP4-F**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist		BS	1					60	1.1			
		SAND, some silt, some gravel, trace cobbles, rootlets, moist		BS	2	*(1)				70	1.2			
		- becoming grey, moist at 0.3 m												
		- frozen, ice crystals from 0.4-0.5 m		BS	3					ND	0.6			
				BS	4					70	0.4			
		End of test pit at 0.5 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4-K

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP4-K
DATES (mm/dd/yy): BORING 8/9/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (70 mm)		BS	1					ND	ND			Backfilled with cuttings
		SILT, sandy, rootlets, brown, moist												
		SAND, silty, trace gravel, medium to fine grained, brown , wet		BS	2	*(1)				5	ND			
1		- grey, organic inclusions at 0.7 m												
		- frozen, ice crystals below 1.1 m		BS	3					ND	0.4			
				BS	4					ND	1.4			
2		End of test pit at 1.3 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4-L

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP4-L**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)												
		SAND, trace silt, trace organic matter, brown, medium grained, rootlets, moist		BS	1					ND	ND			
				BS	2					ND	ND			
		Fibrous ORGANIC matter, moist (30 mm)												
		SAND, gravelly, fine to medium grained, brown, grey, moist												Backfilled with cuttings
		- black staining from 0.8-0.85 m		BS	3					ND	16.9			
				BS	4	*(1,4,6,7)				110	249.0			
1				BS	5	*(1)				90	206.0			
		End of test pit at 0.6 m due to refusal on rock.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
		*(6)=Submitted for analysis of particle size												
		*(7)=Submitted for analysis of VOC sub-frac												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4-M

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP4-M
DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, wet (20 mm)		BS	1					40	0.8			
		SAND, some silt, medium grained, brown/grey, rootlets, wet		BS	2	*(1,3)				55	1.4			
		GRAVEL, sandy, some cobble, subangular to angular, coarse grained, multicolored, wet.		BS	3					NR	NR			Backfilled with cuttings
1				BS	4	*(1)				85	14.9			
		End of test pit at 1.3 m due to refusal on permafrost & boulder.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
		*NR=not sufficient recovery												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP4-N

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP4-N**

DATES (mm/dd/yy): BORING **8/7/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)		BS	1					70	0.9			Backfilled with cuttings
		SAND, some silt, medium grained, brown, wet												
		- grey from 0.4-0.6 m		BS	2	*(1)				65	0.3			
		- frozen / ice wedge below 0.5 m		BS	3					60	1.2			
		End of test pit at 0.6 m due to refusal on permafrost/ice wedge.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4.5-JK

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP4.5-JK**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)		BS	1					ND	0.8			
		FILL: ashes, white/grey granular (150 mm)		BS	2					ND	1.7			Backfilled with cuttings
		SILT, sandy, brown/grey, rootlets, orange mottling - frozen at 0.4 m		BS	3	*(1)				ND	1.8			
				BS	4					ND	0.8			
		End of test pit at 0.55 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4.5-KL

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP4.5-KL**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, moist (150 mm)		BS	1					ND	0.4			
		- debris: wires @ 0.01 m and occasional piece of 0.15 m diameter metal pipe-pile.												
		SAND, some silt to silty, fine grained, brown, roots, moist.		BS	2					ND	2.4			Backfilled with cuttings
		- grey, wet (infiltration), organic odour at 0.5 m												
		- frozen, ice crystals from 0.8-0.95 m		BS	3	*(1)				ND	4.8			
				BS	4					ND	5.1			
1		End of test pit at 0.95 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4.5-LM

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP4.5-LM**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)		BS	1					ND	0.9			
		SILT, sandy, brown, grey, rootlets, moist												Backfilled with cuttings
				BS	2	*(2,3)				ND	0.1			
		- becomes grey at 0.6 m												
		- frozen, ice crystals from 0.75-0.85 m												
				BS	3	*(1)				ND	1.3			
				BS	4					ND	1.1			
		End of test pit at 0.75 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(2)=Duplicated sample taken												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP4.5-MN

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP4.5-MN

DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black/light brown fibrous ORGANIC matter, rootlets, wet (50 mm)		BS	1					ND	1.6			
		SAND, some silt, medium grained, orange mottles, rootlets, moist		BS	2	*(1,3)				ND	16.6			
		Black/brown fibrous ORGANIC matter, rootlets, moist (20 mm)												Backfilled with cuttings
		SAND, silty, fine grained, grey, moist		BS	3	*(1)				ND	14.4			
		Black/brown fibrous ORGANIC matter, moist (40 mm)												
		SAND, some gravel, some silt, medium grained, grey, wet		BS	4					ND	4.1			
1		- frozen, ice crystals from 1.05-1.15 m		BS	5					ND	1.8			
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5-B

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP5-B**

DATES (mm/dd/yy): BORING **8/11/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous organic matter, moist (150 mm)		BS	1	*(1,2,3)				ND	2.3			
		SAND, some gravel, some cobble, brown / grey, rootlets, wet.		BS	2					ND	2.1			Backfilled with cuttings
		- orange mottling from 0.15-0.3 m.		BS	3					ND	1.8			
		- frozen, ice crystals from 0.7-0.8 m.		BS	4					ND	1.4			
1		End of test pit at 0.8 m due to refusal. Upon completion test pit open and wet. *(1)= Submitted for analysis of BTEX / F1-F4 *(2)=Duplicated sample taken *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5-K

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP5-K
DATES (mm/dd/yy): BORING 8/9/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1					ND	0.3			Backfilled with cuttings
		SAND, trace silt, medium grained,brown/grey, rootlets, moist		BS	2	*(1.5)				100	0.3			
		- grey, wet below 0.6 m												
		- frozen, ice crystals from 0.8-0.9 m		BS	3					ND	0.1			
				BS	4					ND	ND			
1		End of test pit at 0.9 m due to refusal on permafrost/ice												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(5)=Submitted for analysis of pH												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP5-L

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP5-L**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (40 mm)												
		SAND, some silt, fine to medium grained, brown, rootlets, moist		BS	1					5	27.1			Backfilled with cuttings
		SILT, sandy, some organic matter, black, wet staining, hydrocarbon odours.		BS	2	*(1,4)				75	200.0			
		SAND, medium grained, grey, moist - wet from 0.9-1.0 m - frozen, ice crystals from 0.9-1.0 m		BS	3	*(1)				ND	8.3			
1				BS	4					ND	3.0			
		End of test pit at 1.0 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5-M

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP5-M

DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black to brown fibrous ORGANIC matter, rootlets, moist (30 mm), wood on surface		BS	1	*(3)				40	0.5			Backfilled with cuttings
		SILT, sandy, rootlets, brown, trace orange mottling - frozen, grey, no rootlets, ice below 0.35 m		BS	2	*(1)				35	1.6			
				BS	3					20	0.5			
		End of test pit at 0.6 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5-N

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP5-N
DATES (mm/dd/yy): BORING 8/7/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, wet (20 mm)		BS	1					15	0.7			
		SILT, sandy, some organic matter, grey/brown, rootlets, pebbles, moist.		BS	2					ND	0.4			
		SAND, silty, medium grained, grey, pebbles, moist.		BS	3	*(1)				5	1.3			Backfilled with cuttings
		- frozen/ ice below 0.7 m		BS	4					ND	1.2			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5.5-E

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP5.5-E
DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (10 mm)												
		SAND, some silt, medium grained, brown, trace rootlets.		BS	1					ND	1.2			Backfilled with cuttings
				BS	2					10	1.2			
				BS	3	*(1)				ND	3.8			
		- @0.45 m: organic matter, fibrous, black, moist (30mm)												
		- frozen, ice crystals from 0.5-0.6 m		BS	4					10	2.3			
		End of test pit at 0.6 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5.5-JK

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP5.5-JK**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1					ND	0.7			
		SILT, some sand, brown/grey, rootlets		BS	2					ND	ND			Backfilled with cuttings
		- becoming grey & wet at 0.6 m												
		- permafrost / ice at 0.75m		BS	3	*(1)				5	ND			
				BS	4					ND	1.1			
1		End of test pit at 0.85 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP5.5-KL

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP5.5-KL
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown fibrous ORGANIC matter, wood debris, moist (20 mm)		BS	1					ND	1.7			
		SAND, some silt, medium grained, rootlets, moist, organic inclusions.		BS	2	*(1)				ND	8.8			Backfilled with cuttings
		- becomes wet, grey at 0.5 m												
		- sheen on water & hydrocarbon odour at 0.9 m		BS	3					ND	11.4			
		- frozen, ice crystalsat 0.95 m												
1				BS	4					ND	2.0			
		End of test pit at 1.05 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5.5-LM

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP5.5-LM**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, moist (50 mm)		BS	1					ND	4.0			Backfilled with cuttings
		SILT, sandy, brown/grey, roots, moist												
				BS	2	*(1,3)				ND	2.6			
		- grey at 0.55 m												
		- frozen, ice crystals from 0.7-0.8 m												
				BS	3					ND	2.3			
				BS	4					ND	3.5			
1		End of test pit at 0.8 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP5.5-MN

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP5.5-MN**

DATES (mm/dd/yy): BORING **8/13/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SILT, some sand, brown rootlets, wet		BS	1					ND	22.1			
				BS	2					15	68.9			
		SAND, some silt, fine grained, grey, organic inclusions, moist		BS	3					50	313.0			
		- hydrocarbon odours from 0.2-0.8 m		BS	4					45	347.0			
				BS	5	*(1,4,5)				120	441.0			Backfilled with cuttings
				BS	6					10	27.6			
1		SAND, some silt, some cobbles, meddium grained, wet		BS	7					5	15.0			
		- frozen, ice crystals from 1.15-1.25 m		BS	8					ND	10.2			
		End of test pit at 1.25 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
		*(5)=Submitted for analysis of pH												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP6-K

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP6-K**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Debris : tile, wood (20 mm)												
		Black fibrous ORGANIC matter, moist (20 mm)		BS	1					5	ND			
		SAND, silty, fine to medium grained, brown, rootlets, moist.												Backfilled with cuttings
		- becomes grey, wet, rootlets end at 0.5 m		BS	2	*(1)				75	0.4			
		- frozen, ice crystals from 0.8-0.9 m		BS	3					ND	ND			
				BS	4					5	ND			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP6-L

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP6-L

DATES (mm/dd/yy): BORING 8/9/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (40 mm)												
		SAND, some silt, medium grained, brown, moist.		BS	1					ND	1.0			Backfilled with cuttings
		- grey, medium to coarse grained below 0.6 m												
		- wet, odours from 0.8-1.0 m		BS	2	*(1,6)				ND	2.1			
1		- frozen, ice crystals from 1.0-1.25 m		BS	3					ND	0.3			
				BS	4					ND	1.6			
		End of test pit at 1.25 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
2		*(6)=Submitted for analysis of particle size												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP6-M

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP6-M**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (10 mm)		BS	1					ND	0.6			
		SAND, trace silt, trace gravel, medium to fine grained, grey, trace rootlets, moist - orange mottling from 0.01-0.3 m												
				BS	2	*(1,3)				5	8.1			Backfilled with cuttings
		- frozen, ice crystals below 0.8 m												
1				BS	3					NR	NR			
				BS	4					ND	ND			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP6-N

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP6-N**

DATES (mm/dd/yy): BORING **8/7/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, wet (50 mm)		BS	1					ND	ND			
		SILT, sandy, grey/brown, rootlets, wet.												
				BS	2	*(1,3)				10	ND			
		SAND, silty, trace gravel, trace cobble, grey, wet		BS	3					ND	0.5			Backfilled with cuttings
		- frozen/ ice below 0.6 m		BS	4					ND	ND			
1		End of test pit at 0.8 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP6.5-FG

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP6.5-FG
DATES (mm/dd/yy): BORING 8/12/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)		BS	1	*(1,3)				ND	1.2			
		SAND, some silt, fine grained, brown, rootlets, moist.		BS	2					ND	ND			Backfilled with cuttings
		- rootlets stop, grey wet at 0.25 m												
		- frozen, ice crystals from 0.65-.75 m		BS	3					ND	0.8			
				BS	4					ND	0.4			
1		End of test pit at 0.75 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP6.5-KL

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP6.5-KL
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, moist (50 mm)		BS	1					ND	2.5			
		SILT, sandy, dark brown to brown, moist - becomes grey at 0.3 m		BS	2					ND	1.5			Backfilled with cuttings
		- frozen, ice crystals from 0.45-0.65 m		BS	3	*(1)				ND	1.5			
				BS	4					ND	2.7			
		End of test pit at 0.65 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP6.5-LM

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP6.5-LM
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, moist (20 mm)												
		SILT, sandy, brown, roots, moist		BS	1					ND	1.0			Backfilled with cuttings
				BS	2	*(1,3)				ND	3.7			
		SAND, some gravel, medium grained, grey, wet.												
		- infiltration at 1.0 m												
1		- frozen, ice crystals below 1.1 m		BS	3					5	0.8			
				BS	4					5	2.6			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP6.5-MN

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP6.5-MN
DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SILT, sandy, some gravel, light brown, dry, some white precipitate inclusions		BS	1					45	205.0			
		- metal, wood and timber debris on surface		BS	2	*(1)				150	610.0			
		- strong hydrocarbon odour from 0-2-0.8 m		BS	3					30	104.0			
		- brown, grey, staining, moist at 0.1 m		BS	4					75	181.0			
		- light to very light pink in color from 0.2-0.45 m		BS	5					50	240.0			Backfilled with cuttings
		- black staining from 0.53-0.54 m												
		- grey at 0.54 m		BS	6	*(3)				5	34.8			
1		SAND, some cobbles, medium grained, grey, wet, hydrocarbon odours		BS	7	*(1)				ND	24.2			
		- frozen, ice crystals from 1.1-1.2 m		BS	8					5	39.6			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
2		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP6.5-NO

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP6.5-NO
DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (10 mm)		BS	1					ND	0.2			
		SILT, sand, some gravel, brown/grey, rootlets, moist		BS	2	*(3)				ND	0.8			Backfilled with cuttings
		- grey below 0.45 m - wet												
		- frozen, ice crystals below 0.65 m		BS	3	*(1)				5	1.0			
				BS	4					ND	0.7			
		End of test pit at 0.75 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP7-C

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP7-C
DATES (mm/dd/yy): BORING 8/11/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous organic matter, moist (100 mm)		BS	1					ND	1.3			Backfilled with cuttings
		SAND, silty, some gravel, some cobble, grey, wet.		BS	2	*(1,3)				5	1.9			
		- frozen, ice crystals from 0.45-0.55 m.		BS	3					ND	2.0			
		End of test pit at 0.55 m due to refusal.												
		Upon completion test pit open and wet.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)= Submitted for analysis of metals												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7-H

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP7-H**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1	*(1,3)				ND	1.6			Backfilled with cuttings
		SAND, trace silt, fine grained, brown, rootlets, moist		BS	2					ND	1.1			
		- becomes silty, some gravel, some cobbles, grey, wet below 0.3 m		BS	3					ND	1.3			
		- frozen, ice crystals from 0.4-0.5 m		BS	4					ND	2.2			
		End of test pit at 0.5 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7-K

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP7-K**

DATES (mm/dd/yy): BORING **8/10/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)												
		SILT, sandy, brown, rootlets, moist		BS	1					55	1.0			Backfilled with cuttings
				BS	2					60	0.7			
		SAND, some silt, trace gravel, medium grained, grey, wet. - frozen, ice crystals from 0.8-0.9 m		BS	3	*(6)				45	1.1			
				BS	4					70	1.2			
1		End of test pit at 0.9 m due to refusal on permafrost. *(6)=Submitted for analysis of particle size												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP7-L

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP7-L
DATES (mm/dd/yy): BORING 8/9/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)												
		SAND, some silt, mediumgrained, brown, rootlets, moist		BS	1					50	1.6			Backfilled with cuttings
		SILT, sandy, brown, moist												
		- wet, grey below 0.5 m		BS	2	*(1,5)				85	54.1			
				BS	3					100	35.7			
				BS	4	*(1)				80	2.4			
		End of test pit at 0.75 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(5)=Submitted for analysis of pH												
1		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7-M

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP7-M**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (10 mm)		BS	1					ND	1.2			
		SILT, sandy, grey, trace rootlets, moist.												
		SAND, silty, some gravel, fine to medium grained, grey, moist		BS	2	*(1,3)				15	11.2			Backfilled with cuttings
		- seepage from 0.8-1.0 m												
		- frozen, ice crystals from 1.0-1.2 m		BS	3					15	2.7			
1				BS	4					ND	2.0			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7-MN

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP7-MN**

DATES (mm/dd/yy): BORING **8/13/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Whte precipitate substance (200 mm)		BS	1	*(3,5)				ND	0.6			
				BS	2	*(3)				ND	0.5			
		SILT, sandy, some organic matter, rootlets, brown/grey, moist		BS	3	*(3)				ND	0.2			
		- orange staining from 0.5-0.75 m		BS	4	*(3)				ND	0.9			Backfilled with cuttings
				BS	5	*(1,3)				ND	2.9			
				BS	6					ND	2.8			
		SAND, some silt, some gravel, some cobbles, medium to coarse grained, grey, wet		BS	7					ND	2.0			
1		- frozen, ice crystals from 0.95-1.05 m		BS	8					ND	1.8			
		End of test pit at 1.05 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(5)=Submitted for analysis of pH												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7-N

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP7-N
DATES (mm/dd/yy): BORING 8/7/10
WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (50 mm)		BS	1					ND	ND			Backfilled with cuttings
		SILT, sandy, brown, trace cobble, moist - grey, wet from 0.4-0.75												
				BS	2	*(1,3)				ND	10.4			
		- frozen/ ice below 0.6 m		BS	3					ND	3.5			
1		End of test pit at 0.75 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7.5-FG

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP7.5-FG**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (10 mm)												
		SAND, some gravel, medium grained, brown, rootlets, moist		BS	1					5	1.2			Backfilled with cuttings
				BS	2					ND	1.1			
		-becomes grey, wet at 0.6 m - frozen, ice crystals from 0.85-95 m		BS	3	*(1)				5	2.2			
				BS	4					ND	0.5			
1		End of test pit at 0.6 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7.5-KL

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP7.5-KL**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, moist (60 mm)		BS	1					ND	0.8			Backfilled with cuttings
		SILT, trace sand, brown, rootlets, wet - becomes grey, wood debris at 0.3 m - frozen, ice crystals from 0.4-0.5 m		BS	2					ND	0.6			
				BS	3	*(1)				ND	4.1			
				BS	4					ND	2.9			
		End of test pit at 0.5 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7.5-LM

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP7.5-LM**

DATES (mm/dd/yy): BORING **8/13/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)												
		SAND, some silt, some gravel, some cobble, brown, rootlets, moist		BS	1	*(1,3)				ND	1.7			Backfilled with cuttings
		- wet, grey from 0.7-1.3 m		BS	2					ND	1.1			
1		- frozen, ice crystals from1.15-1.3 m		BS	3					ND	1.2			
				BS	4					ND	0.8			
		End of test pit at 1.3 m due to refusal on permafrost.												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP7.5-MN

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP7.5-MN
DATES (mm/dd/yy): BORING 8/13/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (40 mm)		BS	1	*(1,3)				ND	0.3			
		SAND, silty, trace gravel, brown, rootlets, moist												
				BS	2	*(3)				ND	0.5			Backfilled with cuttings
		- rootlets from 0.3-0.5 m - grey, wet from 0.5-0.8 m												
				BS	3					ND	0.7			
		- frozen, ice crystals from 0.7-0.8 m		BS	4					ND	0.7			
1		End of test pit at 0.8 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP7.5-NO

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP7.5-NO**

DATES (mm/dd/yy): BORING **8/13/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, rootlets, moist (100 mm)		BS	1					ND	0.6			
		SILT, sandy, brown/grey, rootlets, moist		BS	2	*(1,3)				ND	0.4			Backfilled with cuttings
		SAND, some silt, trace cobbles, some gravel, grey, medium grained, wet - frozen, ice crystals below 0.7 m		BS	3					ND	0.4			
				BS	4					ND	0.3			
1		End of test pit at 0.8 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP8-H

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP8-H**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)		BS	1					ND	1.7			
		SAND, silty, some gravel, medium to fine grained, brown, rootlets, moist												Backfilled with cuttings
				BS	2					ND	1.9			
		- becomes grey, wet below 0.5 m												
		- frozen, ice crystals from 0.7-0.8 m												
				BS	3	*(1,2)				10	2.3			
				BS	4					5	1.8			
1		End of test pit at 0.8 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(2)=Duplicated sample taken												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP8-L

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP8-L**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)												
		SILT, sandy, brown, rootlets, orange mottles, moist		BS	1	*(3)				ND	1.1			
		SAND, some silt, fine to medium grained, brown, moist.		BS	2	*(1)				ND	1.7			Backfilled with cuttings
		- grey, wet from 0.65-1.0 m												
		- frozen, ice crystals from 0.7-1.0 m		BS	3					ND	1.1			
1				BS	4					ND	0.9			
		End of test pit at 1.0 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP8-M

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP8-M
DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, moist (20 mm)												
		SILT, sandy, brown/grey, trace rootlets, moist.		BS	1	*(1,3)				ND	0.9			Backfilled with cuttings
		- grey below 0.4 m		BS	2					5	0.2			
		- frozen, ice crystals at 0.85 m		BS	3					ND	0.4			
				BS	4					5	0.8			
1		End of test pit at 0.95 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP8-N

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP8-N
DATES (mm/dd/yy): BORING 8/7/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (50 mm)		BS	1					5	ND			Backfilled with cuttings
		SAND, silty, medium grained, brown, moist												
		- grey, wet from 0.4-0.7		BS	2					ND	ND			
		- frozen/ ice below 0.6 m		BS	3					15	ND			
		End of test pit at 0.7 m due to refusal on permafrost.												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP8.5-EF

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP8.5-EF
DATES (mm/dd/yy): BORING 8/12/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (10 mm)												
		SAND, some gravel, medium grained, dark brown, rootlets, moist.		BS	1					ND	0.7			Backfilled with cuttings
		- grey, no rootlets, moist below 0.3 m		BS	2	*(1,3)				ND	1.8			
				BS	3					ND	1.1			
1		- frozen, ice crystals from 1.0-1.1 m		BS	4					ND	1.4			
		End of test pit at 1.1 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP9-C

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP9-C
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown fibrous organics, roots.		BS	1					ND	0.4			
		SAND: cobbly, gravelly, medium grained, moist.												
		- becoming grey, wet @ 0.5 m		BS	2	*(1,3)				5	0.4			Backfilled with cuttings
		- frozen, ice crystals below 0.9 m		BS	3					5	0.3			
1				BS	4					5	1.2			
		End of test pit at 1.0 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP9-CD

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP9-CD**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous organic matter, moist (100 mm)		BS	1					ND	0.4			Backfilled with cuttings
		Surface with metal debris, cans, plastic, some burned debris, glass, wood.		BS	2	*(1,3,4)				ND	6.0			
		SAND: silty, brown, medium - coarse grained, moist.												
		SILT: sandy, grey, moist.		BS	3					ND	0.7			
		Permafrost		BS	4					ND	0.6			
		End of test pit at 0.55 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP9-L

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP9-L
DATES (mm/dd/yy): BORING 8/9/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)												
		SILT, sandy, brown, orange mottles, moist		BS	1					ND	0.4			Backfilled with cuttings
		SAND, silty, medium grained, brown, moist. - grey, wet from 0.5-0.9 m		BS	2					ND	1.9			
		- frozen, ice crystals from 0.8-0.9 m		BS	3	*(1,6)				ND	2.0			
				BS	4					ND	1.7			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(6)=Submitted for analysis of particle size												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP9-M

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP9-M**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (20 mm)		BS	1					5	6.5			Backfilled with cuttings
		SILT, sandy, brown/grey, moist - orange mottling from 0.02-0.4 m - grey, wet below 0.4 m - saturated below 0.6 m		BS	2	*(1,3)				70	ND			
		- frozen, ice crystals at 0.8 m		BS	3					ND	0.4			
				BS	4					ND	ND			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP9-N

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP9-N**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, rootlets, moist (50 mm)		BS	1					10	0.1			Backfilled with cuttings
		SAND, some silt, medium grained, brown/grey, rootlets, trace cobble, wet - grey from 0.4-0.9		BS	2	*(1)				10	1.1			
		SILT, sandy, grey, wet below 0.6 m - frozen, ice crystals from 0.8-0.9 m		BS	3					5	0.5			
1		End of test pit at 0.9 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP9-O

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP9-O**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, silty, rootlets, wet (50 mm)		BS	1					15	0.3			Backfilled with cuttings
		SILT, sandy, medium grained, grey, wet												
		- frozen, ice crystals from 0.5-0.6 m		BS	2					15	0.2			
				BS	3					30	0.6			
		End of test pit at 0.75 m due to refusal on permafrost.												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP9.5-I

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP9.5-I**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)		BS	1					5	1.1			
		SILT, trace sand, brown, rootlets, moist												Backfilled with cuttings
		- becomes sandy, some gravel/cobbles, grey, wet below 0.45 m		BS	2	*(1,3)				5	ND			
		- frozen, ice crystals from 0.6-0.7 m		BS	3					ND	0.6			
				BS	4					ND	0.7			
1		End of test pit at 0.7 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP9.5-MN

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP9.5-MN**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (100 mm)		BS	1					ND	0.9			
		SAND, silty, some gravel, fine to medium grained, brown, rootlets, wet		BS	2	*(1)				ND	3.5			
		- rootlets stop, wet, grey from 0.65 m												Backfilled with cuttings
		- frozen, ice crystals from 0.65-0.8 m		BS	4					5	1.0			
				BS	3					ND	0.6			
1		End of test pit at 0.8 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP9.5-NO

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP9.5-NO
DATES (mm/dd/yy): BORING 8/12/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, rootlets, moist (70 mm)		BS	1					ND	0.7			
		SAND, silty, brown. rootlets, organic inclusions, moist		BS	2					ND	0.3			Backfilled with cuttings
		- sand, trace silt, grey, wet from 0.6 - 0.8 m - frozen, ice crystals below 0.8 m		BS	3	*(1)				ND	0.6			
				BS	4					ND	0.4			
1		End of test pit at 0.95 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP10-E

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP10-E**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, wood debris, moist (100 mm)		BS	1	*(3)				ND	1.0			Backfilled with cuttings
		SILT, sandy, trace gravel, brown, rootlets, moist		BS	2					ND	1.1			
		SAND, gravely, medium grained, grey, wet - frozen, ice crystals from 0.7-0.8 m		BS	3	*(1)				ND	1.4			
				BS	4					ND	1.8			
1		End of test pit at 0.8 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP10-M

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP10-M

DATES (mm/dd/yy): BORING 8/8/10
WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		NO TEST PIT												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP10-N

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP10-N
DATES (mm/dd/yy): BORING 8/6/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SAND, trace silt, medium grained, brown/grey, some organics, wet, some orange mottling, hydrocarbon odour. - black staining at surface		BS	1					110	484.0			Backfilled with cuttings
				BS	2	*(1,2,3,4)				220	697.0			
		SILT, sandy, grey, some cobbles, saturated, hydrocarbon odour. - frozen, ice crystals below 0.9 m		BS	3	*(1)				20	11.4			
1				BS	4					15	3.9			
		End of test pit at 1.0 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(2)=Duplicated sample taken *(3)=Submitted for analysis of metals *(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's)												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP10-O

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP10-O**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, silty, rootlets, wet (50 mm)		BS	1					ND	0.3			Backfilled with cuttings
		SILT, sandy, medium grained, pebbles, wet												
		- frozen, ice crystals from 0.4-0.5 m		BS	2	*(1,5)				25	0.7			
				BS	3					5	0.2			
		End of test pit at 0.5 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(5)=Submitted for analysis of pH												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP10.5-H

CLIENT **Dept. of Community and Government Services Government of Nunavut**
PROJECT No. **1236-00017**
LOCATION **Old Town Site, Clyde River, Nunavut,**
WELL No. **TP10.5-H**
DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured
DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (50 mm)		BS	1					ND	1.2			
		SILT, trace sand, brown/grey, roots, moist.												
		- becomes grey at 0.4 m		BS	2	*(1,3)				ND	0.1			Backfilled with cuttings
		- becomes wet at 0.65 m												
		- permafrost at 0.65 m		BS	3					ND	0.2			
				BS	4					ND	0.2			
		End of test pit at 0.75 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP-10.5-MN

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP-10.5-MN

DATES (mm/dd/yy): BORING 8/12/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 m)												
		SILT, sandy, brown, rootlets, moist		BS	1	*(1)				ND	1.1			Backfilled with cuttings
				BS	2					ND	0.9			
		SAND, some silt, some gravel, some cobbles, grey, wet		BS	3					ND	0.5			
		- frozen, ice crystals from 0.8-0.95 m		BS	4					ND	0.7			
1		End of test pit at 0.95 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP10.5-NO

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP10.5-NO**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, rootlets, moist (150 mm)		BS	1					ND	1.0			
		SAND, silty, fine grained, brown, rootlets, moist - grey, no rootlets, wet from 0.3-0.6 m - frozen, ice crystals below 0.5 m		BS	2	*(1)				ND	1.1			Backfilled with cuttings
				BS	3					ND	0.7			
				BS	4					ND	0.6			
		End of test pit at 0.6 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP11-LM

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP11-LM**

DATES (mm/dd/yy): BORING **8/9/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)												
		SILT, sandy, brown, rootlets, moist		BS	1	*(1,3)				5	ND			Backfilled with cuttings
		- grey, wet from 0.4-.55 ,												
		- frozen, ice crystals from 0.6-0.65 m		BS	2					ND	ND			
				BS	3					ND	ND			
		End of test pit at 0.65 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP11-M

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP11-M**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (30 mm)		BS	1					ND	1.3			Backfilled with cuttings
		SILT, sandy, grey/brown, moist - orange mottling from 0.03 - 0.2 m - wet from 0.4-0.65 m												
		- grey, frozen, ice crystals from 0.65-0.75 m		BS	2	*(1,3)				ND	2.9			
				BS	3					ND	0.7			
1		End of test pit at 0.75 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP11-N

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP11-N
DATES (mm/dd/yy): BORING 8/6/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown/black fibrous ORGANIC matter, rootlets, moist (50 mm)		BS	1					10	ND			Backfilled with cuttings
		SAND, some silt, medium grained, brown/grey, some pebbles, wet												
		- grey, frozen, ice crystals below 0.7 m		BS	2					ND	ND			
				BS	3	*(1)				115	0.7			
1		End of test pit at 0.8 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP11-O

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. TP11-O

DATES (mm/dd/yy): BORING 8/6/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, silty, rootlets, wet (50 mm)		BS	1					15	0.5			Backfilled with cuttings
		SILT, sandy, medium grained, grey, wet - frozen, ice crystals from 0.3-0.5 m		BS	2					25	0.6			
				BS	3					10	ND			
		End of test pit at 0.5 m due to refusal on permafrost. *ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP11.6-LM

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP11.6-LM
DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (30 mm)												
		SILT, sandy, brown, rootlets, moist		BS	1	*(3,5)				ND	ND			Backfilled with cuttings
		SAND, silty, medium to fine grained, brown, moist												
		- grey, wet from 0.5-0.6 m		BS	2					ND	0.8			
		- frozen, ice crystals below 0.4 m		BS	3	*(1,6)				5	1.1			
				BS	4					10	0.6			
1		End of test pit at 0.75 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3) = Submitted for analysis of metals												
		*(5)=Submitted for analysis of pH												
		*(6)=Submitted for analysis of particle size												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP11.6-M

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP11.6-M**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		SILT, sandy, brown, rootlets, wet - metal debris to 0.2 m - grey from 0.4-0.6 m - frozen, ice crystals from 0.5-0.6 m		BS	1	*(3)				ND	ND			Backfilled with cuttings
				BS	2	*(1,4)				ND	ND			
				BS	3					15	0.3			
1		End of test pit at 0.6 m due to refusal on permafrost. *(1)= Submitted for analysis of BTEX / F1-F4 *(3)=Submitted for analysis of metals *(4)= Submitted for analysis of polycyclic aromatic hydrocarbons (PAH's) *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP12-N

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP12-N**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, rootlets (50 mm)		BS	1					10	0.9			Backfilled with cuttings
		SILT, sandy, medium brown, moist												
				BS	2	*(1,3)				55	1.3			
		SAND, grey/brown, wet												
		- grey, some cobbles, below 0.65		BS	3					45	0.7			
		- frozen, ice crystals below 0.8 m		BS	4					10	0.5			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP12-O

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP12-O**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black/brown, fibrous ORGANIC matter, rootlets, wet (100 mm)		BS	1					35	0.1			Backfilled with cuttings
		SILT ,sandy, medium grained, grey, wet - frozen, ice crystals from 0.5-0.6 m		BS	2					30	0.2			
				BS	3					5	ND			
		End of test pit at 0.6 m due to refusal on permafrost. *ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP12.3-LM

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP12.3-LM**

DATES (mm/dd/yy): BORING **8/8/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, moist (100 mm)		BS	1	*(1,3)				5	0.5			Backfilled with cuttings
		SILT, sand, dark brown, moist												
		SAND, some silt, medium to coarse grained, brown/light brown, organic inclusions, moist.												
		- frozen, ice crystals below 0.6 m		BS	2					5	ND			
				BS	3					ND	0.6			
1		End of test pit at 0.75 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP12.3-M

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP12.3-M
DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (10 mm)		BS	1					ND	ND			Backfilled with cuttings
		SILT, some sand, brown, rootlets, moist												
		SAND, some silt, brown/dark brown, moist		BS	2	*(1,3)				75	0.6			
		- grey wet from 0.55-0.6 m												
		Brown ORGANIC matter, wet (150 mm)		BS	3					ND	0.6			
		SILT, sandy, grey, trace organics, frozen		BS	4					5	0.6			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP12.5-E

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP12.5-E**

DATES (mm/dd/yy): BORING **8/12/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, wood debris, moist (100 mm)		BS	1	*(1,3)				ND	2.0			
		SAND, gravely, pebbles, brown, rootlets, moist		BS	2					ND	1.0			Backfilled with cuttings
		- grey, no rootlets, wet at 0.3 m												
1		- frozen at 0.7 m		BS	3	*(1)				ND	0.6			
		End of test pit at 1.0 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)= Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP13-N

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP13-N**

DATES (mm/dd/yy): BORING **8/6/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown fibrous ORGANIC matter, rootlets (10 mm)		BS	1	*(3)				55	0.8			Backfilled with cuttings
		SAND, silty, medium grained, brown, rootlets, moist												
		SILT, sandy, medium grained, brown, moist												
		- grey, some cobbles below 0.6 m		BS	2					15	0.4			
		- frozen, ice crystals below 0.65 m												
				BS	3					15	0.3			
				BS	4					NR	NR			
1		End of test pit at 0.9 m due to refusal on permafrost.												
		*(3)=Submitted for analysis of metals												
		*NR=not sufficient recovery												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP-DUMP-1

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP-DUMP-1
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		GRAVEL, cobbles, rootlets, moist, reddish brown - with debris: tin cans, wood.		BS	1	*(3)				ND	ND			Backfilled with cuttings
				BS	2					5	ND			
		SAND, silty, some gravel and cobbles, grey, wet, cold but not frozen.												
1				BS	3					ND	ND			
		End of test pit at 1.4 m due to refusal on boulder. *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP-DUMP-2

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP-DUMP-2
DATES (mm/dd/yy): BORING 8/14/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		GRAVEL, sandy, rootlets, trace organics		BS	1					75	0.2			Backfilled with cuttings
				BS	2					60	0.1			
1		SAND, gravelly, some cobbles, medium to fine grained, grey, wet.		BS	3	*(1,3)				70	0.6			
		- frozen, ice crystals from 1.15 m		BS	4					ND	ND			
		End of test pit at 1.15 m due to refusal on permafrost.												
2		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP-DUMP-3

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP-DUMP-3**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Black fibrous ORGANIC matter, rootlets, moist (100 mm)		BS	1					ND	ND			
		SAND, trace silt, some gravel, roots, moist, brown.		BS	2					ND	ND			Backfilled with cuttings
		- becomes grey at 0.45 m												
		- frozen, ice crystals at 0.7		BS	3					ND	ND			
				BS	4					ND	ND			
		End of test pit at 0.8 m due to refusal on permafrost.												
		*ND= not detected												
1														
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

TP-DUMP-4

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP-DUMP-4**

DATES (mm/dd/yy): BORING **8/14/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Surficial debris, tin cans, metal, plastic		BS	1					60	ND			Backfilled with cuttings
		Dark brown, fibrous ORGANIC rootmat, moist (50 mm)												
		SILT, trace sand, brown, roots, moist		BS	2	*(1,2,3)				70	ND			
		- becomming grey at 0.45 m												
		- frozen, ice crystals below 0.55		BS	3					70	ND			
				BS	4					ND	0.4			
		End of test pit at 0.65 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(2)=Duplicated sample taken												
		*(3)=Submitted for analysis of metals												
1		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP-DUMP-5

CLIENT Dept. of Community and Government Services Government of Nunavut
PROJECT No. 1236-00017
LOCATION Old Town Site, Clyde River, Nunavut,
WELL No. TP-DUMP-5
DATES (mm/dd/yy): BORING 8/15/10 WATER LEVEL Not measured
DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown, fibrous ORGANIC matter, rootlets, moist (50 mm), iron staining, surface debris: batteries, tin cans, plastic		BS	1					ND	0.4			
		SAND, silty, fine to medium grained, rootlets, brown/grey, trace orange staining, moist - becoming grey/reddish brown mottling from 0.55-0.75 m		BS	2	*(3)				ND	1.2			Backfilled with cuttings
		- frozen, ice crystals below 0.75		BS	3					ND	0.2			
				BS	4					5	1.8			
1		End of test pit at 0.85 m due to refusal on ice/permafrost. *(3)=Submitted for analysis of metals *ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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TEST PIT RECORD

TP-NB-DUMP-1

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP-NB-DUMP-1**

DATES (mm/dd/yy): BORING **8/15/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown, ORGANIC matter, roots, moist (30 mm)		BS	1					ND	ND			Backfilled with cuttings
		SAND, some gravel, medium grained, brown, rootlets, moist												
		Dark brown, ORGANIC matter, roots, moist (30 mm)												
		SAND, some gravel, medium to fine grained, grey, moist		BS	2	*(1,3)				ND	0.3			
		- wet at 0.9 m												
1				BS	3					ND	ND			
		- frozen, ice wedges from 1.1-1.2 m		BS	4					ND	0.2			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

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TEST PIT RECORD

TP-NB-DUMP-2

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP-NB-DUMP-2**

DATES (mm/dd/yy): BORING **8/15/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Dark brown, ORGANIC matter, roots, moist (20 mm)												
		- mixed witjh misc. surficial garbage		BS	1	*(1,3)				20	ND			
		SAND, trace gravel, fine grained, brown, rootlets, moist												
		- grey below 0.2 m												
		- brown below 0.3 m		BS	2					20	1.6			Backfilled with cuttings
				BS	3					20	ND			
		- frozen, ice crystals from 0.75-0.85 m		BS	4					15	0.6			
1		End of test pit at 0.85 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP-NB-DUMP-3

CLIENT **Dept. of Community and Government Services Government of Nunavut**

PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,**

WELL No. **TP-NB-DUMP-3**

DATES (mm/dd/yy): BORING **8/15/10** WATER LEVEL Not measured

DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Brown fibrous ORGANIC matter, roots, moist (10 mm)		BS	1					10	ND			
		SAND, medium to coarse grained, light brown, rootlets, dry												
		- fine grained, grey, some silt, moist below 0.1 m		BS	2	*(1,3)				15	0.8			Backfilled with cuttings
		- medium grained, grey, ice lenses below 0.75 m		BS	3					20	0.4			
1		- frozen (no ice crystals) from below 1.0 m		BS	4					15	1.2			
		End of test pit at 1.2 m due to refusal on permafrost.												
		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

Stantec

TEST PIT RECORD

TP-NB-DUMP-4

CLIENT **Dept. of Community and Government Services Government of Nunavut** PROJECT No. **1236-00017**

LOCATION **Old Town Site, Clyde River, Nunavut,** WELL No. **TP-NB-DUMP-4**

DATES (mm/dd/yy): BORING **8/15/10** WATER LEVEL Not measured DATUM **TOG**

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Debris, metal, plastic & organics from 0.0-0.1 m												
		SAND, coarse to medium grained, organics, moist, brown		BS	1					ND	0.7			Backfilled with cuttings
		- becoming finer grained, grey below 0.3 m		BS	2	*(1,3)				15	0.4			
				BS	3					15	0.4			
		- frozen, ice crystals from below 0.55 m		BS	4					15	3.2			
		End of test pit at 0.65 m due to refusal on permafrost.												
1		*(1)= Submitted for analysis of BTEX / F1-F4												
		*(3)=Submitted for analysis of metals												
		*ND= not detected												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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Stantec

TEST PIT RECORD

BCHBRL

CLIENT Dept. of Community and Government Services Government of Nunavut

PROJECT No. 1236-00017

LOCATION Old Town Site, Clyde River, Nunavut,

WELL No. BCHBRL

DATES (mm/dd/yy): BORING 8/8/10 WATER LEVEL Not measured

DATUM TOG

DEPTH(m)	ELEVATION(m)	SOIL DESCRIPTION	STRATA PLOT	SAMPLES TYPE	SAMPLES NUMBER	SAMPLES LAB TESTING	SAMPLES N-VALUE OR RQD %	SAMPLES FIELD Ec (mS/cm)	FIELD pH	VAPOUR LEVEL GASTECH (ppm)	VAPOUR LEVEL PID (ppm)	WATER LEVEL	FREE HYDROCARBON	WELL CONSTRUCTION DETAILS
0		Barrels												Backfilled with cuttings
		SAND, some gravel, moist		BS	1					15	6.8			
1				BS	2					ND	12.1			
				BS	3					10	2.0			
		End of test pit at 1.2 m.												
2														
3														

Caution: Soil strength descriptors are subjective field observations only and are not to be used for engineering design purposes.

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STANTEC-TESTPIT 1236-00017 ESAR LOGS AUG 2010.GPJ MASTER1.GDT 10/19/10

APPENDIX E

Field Methodologies

PHASE III ESA FIELD METHODOLOGY

E.1 Geophysical Survey

Upon arrival at the Site, a geophysical survey was completed by Joel Haverson of Multiview Locates Inc. of Mississauga, Ontario. The Geophysical Survey report is included in this submission and the methodology for the testing is outlined in the geophysical report.

E.2 Test Pit Excavation

Test pits were excavated to a maximum depth of 1.9 mbg using a Takeuchi TB1140 tracked excavator supplied by Kudlik Construction Ltd. of Iqaluit, Nunavut. Test pits were excavated to melt water depth or to refusal on permafrost or rock at depths ranging from 0.5 meters below grade [mbg (TP10-O)] to 1.9 mbg (TP1-F).

Materials retrieved from test pit excavations were logged by NSL. The texture and composition of materials and the presence of odours or other indications of potential impacts were recorded. Test pit records are included in **Appendix B**.

E.2.1 Soil Vapour Monitoring

Field screening for the presence of combustible and ionisable soil vapour concentrations (CSV and ISV) in the soil samples collected was conducted using an Eagle Multi-gas Monitor calibrated to a hexane standard; and a Mini-Rae Photo-ionization detector (PID) calibrated to an isobutylene standard.

Soil samples subjected to vapour screening were collected in sealable plastic bags. Each bag was filled approximately half full with soil to provide adequate headspace for accumulation of released vapours. Cohesive samples were broken by hand to increase surface area and permit vapour release. Prior to conducting vapour screening, plastic bags were left to stand upright, undisturbed and allowed to reach ambient room temperature.

The concentration of accumulated hydrocarbon vapours in the headspace was then measured by inserting the probe of the field instrument into the headspace of the bag. The CSV and ISV concentrations were measured in parts per million (ppm) relative to hexane and isobutylene, respectively. The measurements were recorded on a field log for comparison with subsequent samples. Vapour screening measurements are provided on the Test Pit Records in **Appendix B**.

E.3 Sampling

E.3.1 Soil Sampling

Soil samples were collected from test pits at regular depth intervals based on field observations. At each location, a portion of the sample was field tested for soil vapours and the remainder placed in laboratory supplied containers for potential laboratory analyses. Each sample was collected using a new pair of disposable nitrile gloves. Soil samples were submitted for analyses of PHCs, PAHs, PCBs and metals based on the results of previous investigations, vapour screening results and visual observations made during test-pitting activities.

E.3.2 Water Sampling

Water samples were collected from water bodies proximate to the Site (including Creeks 1 thru 3). Water samples were collected up-gradient and down-gradient of the Site. Water samples were collected in

clean laboratory supplied containers. Where necessary, laboratory supplied preservatives were added to samples.

E.3.3 Groundwater Sampling

Groundwater samples were collected directly from open test pits and drive point monitoring wells installed throughout the Site. Groundwater samples were stored in laboratory supplied containers. Where necessary, laboratory supplied preservatives were added to samples. Each sample was collected using a new pair of disposable nitrile gloves.

E.3.4 Sediment Sampling

Sediment samples were collected using a shovel along the shoreline of Patricia Bay and from Creeks 1 thru 3. The sampling tool were cleaned and rinsed between each sample location. Upon collection, the sediment samples were stored in laboratory supplied containers. Each sample was collected using a new pair of disposable nitrile gloves.

E.3.5 Drum Sampling

Prior to the completion of the drum sampling, NSL conducted a preliminary assessment to ensure that the drums sampled would be representative of the drums located on-site. Based on the results of this preliminary assessment, three drums appeared to contain oily water and six drums appeared to contain waste oil.

Fuel samples were collected in clean laboratory supplied containers; however, due to the chemical nature of the fuel samples, these samples were not packed with ice prior to transport. Each sample was collected using a new pair of disposable nitrile gloves.

E.3.6 HHERA Sampling

During the 2010 field program, small mammal and vegetation samples were collected for the purposes of the HHERA, completed in conjunction with the Phase III ESA. The sample methodologies used during the collection of these samples is provided in **Appendix H**.

E.4 Quality Assurance/ Quality Control

All samples were collected following strict NSL sampling procedures. Samples were uniquely labelled and control was maintained through use of chain of custody forms. All samples were collected in laboratory supplied containers and preserved in insulated coolers with ice. The NSL site assessor was in care and control of the sample coolers from the time of sample collection until shipping to the laboratory. Appropriate sampling QA/QC procedures were adhered to at all times.

APPENDIX F

Waste Inventory

Table F-1 **Surface Waste Observed at the Hudson Bay Company Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Buildings	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroleum Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
HBC Residence	- Concrete Pilings - Wooden Debris - One rusted pole - One bag of domestic garbage on beach adjacent to the residence. - One bicycle - Small amount of plastic waste - Small amount of metal debris (including dryer vents, wheel, etc.)	- Several canisters of camping fuel	- Paint on concrete pilings (Red and Orange)	None Noted	10	0	1	0	Tent rings are present for summer camping.
HBC Store	- Wood debris [wooden building frame, flooring, 3 pallets (2 m x 1.5 m), utility poles, pallets, boards, charred wooden floor braces,] - Burnt debris pile [4m x 5m; wiring, metal, burned wood, plastic) - Metal debris (sinks, fuel cans, engine parts, pipes, cabling, wiring) - Pieces of concrete - Burned carpet - Buried barrel with wooden post north of footings - Scrap metal (5 rusted out drums, cable wheel, empty fuel cans, engine parts, two sinks, pipes, nails, utility box, braces)	- Barrel Dump including 7 intact 205L drums containing oily water and sludge	- Green painted chipboard (1m x 1m)	None Noted	15	0	0.5	0	A lot of the debris has been burned on the Site.
HBC Warehouse	- Wooden Debris [Pallets (3) Plywood boards (6)] - Scrap metal (including outboard motors, metal braces, empty drums, empty tank, empty fuel cans, metal anchor, rusted pole, etc) - Three metal pipes (in water along beach) - Insulation (Fiberglass) - Tent rings - Domestic waste piles - Burned domestic waste in half barrel on the beach	None Noted	- Painted wooden platform (3 m x 1.5 m) - Painted chipboard (1.5 m x 1 m) - Asphalt staining (1 m x 1 m) - Waste pile containing shingles, wood, tiles, glass, small motor, electrical wire, metal debris (4.5m x 5m x 0.5m)	None Noted	10	0	15	0	-Stressed vegetation in this area. - Tent rings are present for summer camping

Table F-1 **Surface Waste Observed at the Hudson Bay Company Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Buildings	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroleum Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
HBC Outbuildings	- Wood debris	None	None	None	5	0	0	0	- Very little left of any of the buildings - 3.5 m x 8 m stained area
TOTAL VOLUME OF WASTES (m^3)					**40**	**0**	**17**	**0**	

Table F-2 **Surface Waste Observed at the Department of Transportation Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroluem Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
DOT Bunkhouse	- Domestic waste - Cable - Crushed glass - Scrap metal (metal sinks, radiator covers, rusted muffler, empty fuel cans, valves) - Scrap wood (floor beams, wooden pilings, wall panels, plywood) - Rusted electrical box	- One canister of camping fuel	- White insulation in tarp, and in pipe - Asphalt shingles - Floor tiles - Tiles/shingles - Painted rocks - Painted wood - Rusted electrical box	- Two radio power transformers	15	0	28	0.5	
DOT Hot Water House east of Bunkhouse	- Rusted metal radiator cover - One red pressurized tank - Three hot water tanks - Two radiators - Copper piping and valves - Scrap metal and wooden debris - Cable - Rusted metal machinery	None	- Painted wood (2 m x 2 m) - Insulation (inside of Hot Water Heater) - One paint can - Crushed tile, shingles	- Rusted ignition transformer	10	0	5	0.5	
DOT Post Office	- Scrap metal (rusted antennae, radiators, rebar) - Concrete foundations (building, antennae) - Cables, wiring - Wooden debris (plywood, wooden paneling)	None	- Painted concrete stairs and rocks - Floor tiles inside building footprint - Painted wood inside of building footprint - Particle board located on the east side of the building - Two fluorescent light fixtures with ballasts - Painted lamp posts	None	5	0	20	0	

Table F-2 **Surface Waste Observed at the Department of Transportation Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroluem Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
DOT Powerhouse	- Wiring and cable - Scrap metal (radiators, electrical switch boxes, heating vents, three empty drums, metal box, pipes, snowmobile parts, valves, empty cans of camping fuel, muffler, heating vents, copper pipes, radiator covers, sink, hot water tank) - Concrete (some charred) - Wooden debris	None	- Tiles (12" x 12") - Asphalt Shingles - Painted concrete - Painted wooden debris - Asbestos heat exchanger	None	60	0	20	0	- 18 m x 15 m surface staining under piles of waste west of Power House - 1 m x 1 m surface stained area east of Power House
West of Powerhouse on Beach	- Shower stall - Fluorescent light boxes (no ballasts present) - Nine radiator covers - Two empty cans of camping fuel - Half drum (empty) - Washing machine parts - Domestic waste pile - Two Narwhale carcasses	None	- Painted particle board	None	100	0	0	0	- 30 m x 10 m surface stain
DOT Garage	- Two utility poles - Scrap metal (piping, electrical box, Colman stove, muffler) - Wood and concrete debris - Charred wooden foundation - Domestic waste - Cement - Cable - Fiberglass insulation	None	- Asphalt shingles - Painted concrete slab - Particle board	None	5	0	2	0	- 4 m x 3 m stained area in footprint of building - Buried material north of garage in creek - Buried wood south east side of garage.
DOT Garage (1966)	- Three generators - Steel radio cabinet - One spool of copper ground wire - Bombardier tracks - 2 water holding tanks - Concrete foundation (8 m x 8m) - Furnace - Electrical boxes and cables - Scrap wood - Cable	- One open 205 L drum	- Asbestos shingles - Eleven wet cell batteries (some cracked open) - Paint cans - Crushed tiles and particle board - Cable with insulation	None	15	0	5	0	- 0.5 m x 0.5 m surface stain - 6 m x 3 m surface stain under generator - 1m x 1m surface stain northwest of foundation - Buried materials including shingles, scrap wood, and tiles located east of the foundation

Table F-2 **Surface Waste Observed at the Department of Transportation Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroluem Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
DOT Mess Hall	- Concrete slab - Pipe - Scrap wood (pilings) - Concrete filled drum - Cables - Small piece of fiberglass insulation		- Painted wood located in concrete filled drum	None	1	0	0.5	0	
DOT Wash House	- Scrap metal (electrical box, valves, wheels, washing machines, water tanks, pipes, heating ducts, dryer parts, shop lights, motors, radiator fins, radiators, hot water heater, sink, large metal box, large cylinder, radiator panels, oil burner) - Cable - Wooden debris	None	- Three waste piles of shingles, drywall, and tile. - Insulation inside of hot water heaters and metal boxes - Paint cans - Painted wood	- Ignition transformer - Two transformers located in radio box on south side of area.	40	0	20	0.5	- 8 m x 7 m surface stain inside footprint of building - 4 m x 4 m pile of insulation east of the building - 4 m x 2 m surface stain north of the building.
DOT Radiosonde	- Furnace - Rusted freezer with ignition transformer inside - Metal debris (cans, pipe joints) - Engine parts - Wires and cables (some partially buried) - Small pail full of debris - Scrap wood (utility pole, wooden boxes, wooden planks) - Drum of concrete - Cable	None	- Painted wood (Orange)	- Ignition transformer	15	0	2	0.5	- Based on observations, drums may have been previously located on the north and west sides of the former building. - Piles of soil with stressed or no vegetation throughout this area.

Table F-2 **Surface Waste Observed at the Department of Transportation Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroluem Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
DOT Building between Radiosonde and Wash House	- Scrap metal (equipment parts, tin cans, metal stripping, heating vents, empty paint cans, generator) - Scrap wood (two utility poles, planks) - Buried cable - Metal cable (on surface) - Half drum with utility pole (anchor) - Small domestic dump (2m x 1m)	None	- Painted wood - Rusted paint cans with paint - One waste pile located southwest of the building includes drywall, crushed tile, scrap wood, painted particle board, insulation (1m x 1m x 1m) - Asphalt shingles	None	5	0	5	0	- Spill area (0.5m x 0.5m) west of hydro pole - Two white stained areas located to the west
DOT Hydrogen Generating Building 1	- Scrap metal (generators, pipes, mufflers, hydrogen reactor, empty drum, empty metal canisters, generator box) - Wooden debris - Cable	None	- Piles of tiles, shingles, insulation and drywall - Tarpaper - One drum of asbestos tiles - Insulation (inside of building footprint)	None	20	0	30	0	- Stained area located northeast of the building (2 m x 2m) - Stained area surrounding the Hydrogen Generator (5 m x 2 m) - White stain adjacent to hydrogen generation building.
DOT Hydrogen Generating Building 2	- Scrap metal (piping) - Wood Debris [plywood (3 m x 1 m) - Broken up concrete foundation - Utility pole - Partially buried cable - Generator - Cable	None	- Tiles	None	15	0	5	0	- Stained area northwest of the foundation (1.3 m x 0.6 m)
DOT Hydrogen Generating Building 3	- Concrete slab - Wooden debris - Scrap metal (cans, machinery, furnace)	None	- Paint cans - White stain on west side of the building	None	5	0	2	0	- 4 m x 3 m stained area northwest side of building.
Building South of DOT Garage	- Scrap metal - Scrap wood (charred wooden foundation, plywood, - Domestic waste - Rebar - Melted unknown material	- 20 L rusted metal pail with oily sludge (Half full)	None	None	5	0	0	0	- 3 m x 2 m stained area northwest side of the Building south of DOT Garage
DOT Fuel Tanks	- Scrap metal from four 6000 L ASTs with flex connectors	- Four 6000 L Painted ASTs with unknown contents (estimated to be less than 100 L)	- Paint on ASTs	None	50	0	1	0	- ASTs are aligned side by side on wooden platforms - 5 m x 10 m stained area on the west side of the ASTs
TOTAL VOLUME OF WASTES (m^3)					**366**	**0**	**146**	**2**	

Table F-3 **Surface Waste Observed at the Department of Northern Affairs and National Resources Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroleum Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
DNANR Teacher's Residence	- Wood debris (burnt) - Washing machine	None	None	None	1	0	0	0	- Tent ring present for summer camping
DNANR School	- Gas cylinders - Metal debris (pipe, ducting)	None	None	None	2	0	0	0	
DNANR Powerhouse and Garage	- Snow machines (2) - Scrap metal (bath tubs, mattress coils, furnace, generator parts, hoists, power poles, radiator, copper piping, duct pieces, snow plow, metal snow blade) - Wooden debris (wooden foundation, wooden boards, sled, utility pole) - Concrete (3 m x 1.5 m)	None	- Painted snow blade (3 x 1 m) - Propane tank - Paint cans - Painted wood	None	15	0	5	0	
DNANR Hostel	- Scrap metal (heating ducts, laundry tub, disintegrated drums, piping, bed frame, metal poles, heating pipe) - Washing machine - Wood debris - Charred wooden posts - Cable	- Paint cans with black sludge (oil)	None	None	5	0	0	0	- Gravel pad with tent ring present for summer camping
Fuel Dump	- Copper wire and tubing - Scrap metal (including one bicycle, empty fuel cans, radiator, bicycle parts, furnace, wiring, car parts, mattress coils, metal pipes, ducting, and cables) - Propane cylinders - Empty fuel tank and drums - Charred garbage dump on beach (3 m x 4 m)	- Potential waste remaining in open drums, fuel cans and fuel tank	None	None	20	0	0	10	- Two 3 m x 2 m stained areas, one 4 m x 2 m stained area, one 5 m x 6 m stained area, and one 12 m x 3m stained area.

Table F-3 **Surface Waste Observed at the Department of Northern Affairs and National Resources Area**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroleum Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
Medical Building	- Stove - Cable - Metal antennae - Scrap metal (wiring and sheet metal) - Domestic waste inside of building footprint	None	None	None	15	0	5	0	- Stressed vegetation was observed in this area
Mission	- Incinerator (filled with various debris including tin cans and batteries) - Concrete foundation - Domestic waste (some charred) - Concrete supports for antennae - Scrap Metal (base of metal antennae)	None	- Painted wood	None	5	0	0.5	0	
TOTAL VOLUME OF WASTES (m^3)					**63**	**0**	**11**	**10**	

Table F-4 **Surface Wastes Observed at the Dump Areas**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroleum Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
Site Dump	- Scrap metal (reactor vessel, metal cans, furnace pieces, snowmobile parts, engine parts, mattress coils, radiators, reactor parts, washer parts, buckets, stoves, electrical boxes, sink, generator, water holding tank, hot water heater) - Wooden debris (pallets, boards) - Charred wooden debris - Charred domestic waste - Cable - Concrete filled cylinder	- 205 L drums (6 partially full)	- Batteries - Paint cans - Asbestos tiles and asphalt shingles - Painted wood	- Small transformer and several capacitors	600	1230	10	5	
Beach Dump	- Wood pallets - Plywood sheets - Wooden crates - Snow machine parts - Square steel cauldron - Furniture - Domestic debris - Crushed rusted 205 L drum	None	None	None	100	0	0	0	- Wood and drums have been used by campers to support tents - Drums are rusted - Two drums are full of debris - Cauldron full of burnt debris, mostly household wastes and electronics
Extreme S Beach Dump	- Snowmobile parts (track) - Metal Debris (including motor parts, cans, ducting, empty drum lids, sink, empty drums, engine parts, shop light boxes, cylinder with metal piping) - Wooden Debris (including power pole, walkway, pallets, - Drums with domestic waste - Propane cylinder - Tires - Water Tank - Wire box - Burned garbage piles - Cables - Pile of 20 L buckets	None	- Car batteries (7) - Paint Cans - Electrical Box (with insulation) - Stove with insulation - Tiles	None	50	0	2	0	- Tent rings present for summer camping - Potentially buried debris - Asphalt staining
TOTAL VOLUME OF WASTES (m^3)					**750**	**1,230**	**12**	**5**	

Table F-5 **Surface Waste Observed at Other Areas On-site**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Areas	Non Hazardous Waste	PHC Product Waste	Special Wastes	Hazardous Waste	Volume of Non Hazardous Waste (m^3)	Volume of Petroleum Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)	Comments
Upper Plateau Residential Area	- Wooden debris (pallets, walkways, two power poles) - Scrap metal (bath tubs, washing machine parts, tin cans, snowmobile parts, copper pipes, mattress coils, laundry tub, stove) - Burnt buckets - One intact drum (empty)	None	- Painted wood	None	10	0	1	0	- Tent rings for summer camping
Structure SE of Beach Dump	- Utility poles - Metal siding - Asphalt shingles - Electrical gear - Furnace	None	- Tiles	None	5	0	1	0	- Hydro poles form a rectangle
Area 50 m north of HBC Outbuildings along beach	- Pile of metal and wooden debris (8m x 5m x 0.5m) - Boulder piles - Domestic debris (garbage) and copper piping, 4 m x 3m. - Scrap metal (reactor vessel, generator, empty tank) - Concrete stairs - Trailer - Wooden Pallets - Buried drainage pipe - Pile of antennas - Box with beam supports	- Ten visible buried 205 L barrels (Unknown Contents) were observed in 2008. During the 2010 Phase III ESA field program, the drums were removed; liquid was noted in three of the drums.	None	None	20	615	0	0	- Stained surface soil (approximately 25 m x 15 m, unknown depth) located west of buried barrels.
TOTAL VOLUME OF WASTES (m^3)					**35**	**615**	**2**	**0**	

Table F-6 **Total Amount of Surface Waste Present On-site**
Old Town Clyde River
Clyde River, Nunavut
NSL Project No.: 123600063

Volume of Non Hazardous Waste (m^3)	Volume of Petroluem Products (L)	Volume of Special Wastes (m^3)	Volume of Hazardous Waste (m^3)
1,254	1,845	187	17

APPENDIX G

Analytical Tables

TABLE G-1 **SOIL PETROLEUM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Sample Depth (mbg)	Date Sampled	BTEX Parameters (mg/kg or ppm)				Petroleum Hydrocarbons (mg/kg or ppm)			
			Benzene	Toluene	Ethyl Benzene	Xylenes	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34
2010 Supplemental Phase III ESA										
TP0.5-G-1	0-0.3	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	120	70	<10
TP0.5-G-2	0.3-0.55	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**820**	150	<10
TP0.5-G-4	0.6-0.8	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1-F-3	0.9-1.0	10-Aug-10	<0.005	0.03	0.06	0.42	33	**720**	270	<10
TP1-F-4	1.8-1.9	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**240**	180	<10
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	-	-	-
TP1-FG-1	0-0.2	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**1100**	250	<10
TP1-G-2	0.5-1.0	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
	Lab-Dup		-	-	-	-	-	<10	<10	<10
TP1-H-2	0.35-0.7	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1-J-1	0-0.3	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1.5-E-1	0-0.4	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1.5-EF-3	0.7-1.2	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**260**	100	<10
TP1.5-F-1	0-0.3	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**580**	**540**	26
TP1.5-FG-4	0.9-1.0	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1.5-L-3	0.8-0.9	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1.5-M-2*	0.3-0.5	8-Aug-10	<0.03	<0.03	<0.03	<0.05	40.3	**1664**	**334****	-
TP1.5-M-4	1.0-1.1	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP1.5-N-1	0-0.15	7-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**230**	140	<10
	Lab-Dup		-	-	-	-	-	**230**	130	<10
TP1.5-P-1	0-0.3	7-Aug-10	0.021	0.05	<0.01	<0.04	<10	<10	78	25
TP2-DE-3	0.7-1.15	15-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP2-E-2	0.4-0.6	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	180	58
TP2-EF-1	0-0.45	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**190**	160	12
TP2-F-1	0-0.4	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	81	17
TP2-GH-2	0.35-0.4	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	87	18
TP2-J-1	0-0.3	10-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP2-K-2	0.2-0.6	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP2-M-2	0.25-0.5	8-Aug-10	<0.005	<0.02	<0.01	<0.04	180	**2600**	**22000**	1500
TP2-N-3	0.9-1.15	7-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP2.5-MN-3	0.25-0.65	13-Aug-10	<0.005	<0.02	<0.01	<0.04	140	**1500**	130	<10
TP2.5-NO-2	0.25-0.7	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	120	49
TP2.5-P-2	0.3-0.5	7-Aug-10	<0.005	<0.02	0.03	0.5	57	**910**	**380**	<10
TP3-D-2	0.35-0.4	11-Aug-10	<0.01	0.11	<0.02	<0.08	<20	<20	300	100
TP3-DE-3	0.5-1.0	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	26	99	29
TP3-E-2	0.3-0.6	12-Aug-10	<0.005	<0.02	<0.01	<0.04	15	**640**	200	23
TP3-F-3	0.6-1.0	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP3-FG-3	0.5-0.7	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	63	32
TP3-GH-2	0.4-0.7	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP3-K-2	0.15-0.3	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	22	11
TP3-L-1	0-0.35	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP3-M-3	0.8-0.9	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**770**	260	<10
TP3-N-2	0.4-0.6	7-Aug-10	<0.005	<0.02	<0.01	<0.04	150	**3700**	**360**	29
TP3-N-3	0.9-1.1	7-Aug-10	<0.005	<0.02	<0.01	<0.04	**240**	**3000**	**380**	22
TP3-O-3	0.65-0.75	6-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	39	24
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	-	-	-
TP3.5-DE-2	0.35-0.5	11-Aug-10	<0.005	<0.02	<0.01	<0.04	13	**460**	**1600**	1100
TP3.5-E-3	0.45-0.8	11-Aug-10	<0.05	<0.2	2.2	13	**550**	**17000**	**5400**	440
TP3.5-F-2	0.3-0.6	11-Aug-10	<0.05	<0.2	0.8	17	**1400**	**14000**	**1700**	34
TP3.5-FG-3	0.3-0.45	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	91	46
TP3.5-GH-1	0-0.5	15-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP3.5-I-3	0.45-0.6	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	18	<10
TP3.5-KL-3	0.6-0.95	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**1300**	210	<10
TP3.5-LM-4	0.8-1.05	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP3.5-MN-2	0.3-0.75	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP3.5-NO-2	0.01-0.5	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	84	37
TP4-E-3	0.3-0.5	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	130	52
TP4-F-2	0.1-0.25	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	68	39
TP4-K-2	0.15-0.7	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	53	28
TP4-L-4	0.8-0.85	9-Aug-10	<0.005	<0.02	<0.01	0.04	190	**5200**	**1500**	<10
TP4-L-5	0.85-1.1	9-Aug-10	<0.005	<0.02	<0.01	<0.04	48	**1800**	**560**	<10
TP4-M-2	0.2-0.35	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	36	<10
TP4-M-4	1.1-1.3	8-Aug-10	<0.005	<0.02	<0.01	<0.04	14	110	<10	<10
	Lab-Dup		-	-	-	-	-	110	<10	<10
TP4-N-2	0.3-0.5	7-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	39	22
TP4.5-JK-3	0.2-0.4	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	38	22
TP4.5-KL-3	0.5-0.8	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP4.5-LM-3	0.6-0.75	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	44	<10
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	<10	59	<10
TP4.5-MN-2	0.05-0.32	13-Aug-10	-	-	-	-	-	**1300**	260	39
TP4.5-MN-3	0.32-0.64	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	20	67	26
	Lab-Dup		-	-	-	-	-	28	76	25
TP5-B-1	0-0.15	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	33	<10
TP5-K-2	0.15-0.6	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	14	<10
RDL			0.005	0.02	0.01	0.04	10	10	10	10
CCME CSQGs Residential Land Use		SQG_{HH} Soil Ingestion	110	22,000	10,000	150,000	-	-	-	-
		SQG_E Soil Contact	31	75	55	95	-	-	-	-
GN Guidelines (based on CWS for PHC in Soil for F1/F2/F3/F4 Residential Land Use)		SQG_{HH} Direct Contact	-	-	-	-	12,000	6,800	15,000	21,000
		Management	-	-	-	-	700	1,000	2,500	10,000
		SQG_E Soil Contact	-	-	-	-	210	150	300	2,800

Notes:

RDL = Laboratory reportable detection limit
CCME = Canadian Council of Ministers of the Environment
CCME CSQG = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
SQG_{HH} = Soil Quality Guideline for Human Health; Soil Ingestion exposure pathway; $1x10^{-5}$ incremental risk for benzene
SQG_E = Soil Quality Guideline for Environmental Health, Soil Contact exposure pathway
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CWS for PHC (Residential) = Canada Wide Standards for Petroleum Hydrocarbons in Soil, 2008 (coarse-grained surface soil at residential sites, Tier 2 Pathway Specific Guidelines
F1/F2/F3/F4 = Equivalent normal straight-chain hydrocarbon boiling point ranges, divided into four fractions
BTEX = Benzene, toluene, ethylbenzene and xylenes
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
* = hydrocarbon sub-fractionation converted to F1-F3 fractions to compare with guidelines- see Table D-3 for sub-fractionation results
** = only partial F3 available from sub-fractionation (C16-C32)
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent Guideline
- = No applicable guideline/standard

Sample ID	Sample Depth (mbg)	Date Sampled	BTEX Parameters (mg/kg or ppm)				Petroleum Hydrocarbons (mg/kg or ppm)			
			Benzene	Toluene	Ethyl Benzene	Xylenes	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34
TP5-L-2	0.5-0.8	9-Aug-10	<0.005	<0.02	<0.01	<0.04	83	**11000**	**4300**	18
TP5-L-3	0.8-0.9	9-Aug-10	<0.005	<0.02	0.03	0.17	<10	**290**	170	13
TP5-M-2	0.25-0.35	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	85	48
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	-	-	-
TP5-N-2	0.1-0.3	7-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	48	22
TP5.5-E-3	0.3-0.5	12-Aug-10	<0.005	0.11	<0.01	<0.04	<10	<10	260	130
TP5.5-JK-3	0.6-0.75	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP5.5-KL-3	0.02-0.5	14-Aug-10	<0.005	<0.02	<0.01	0.04	18	**460**	150	<10
TP5.5-LM-2	0.05-0.55	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	39	<10
TP5.5-MN-5	0.4-0.5	13-Aug-10	<0.005	0.46	0.71	7.4	200	**3800**	**340**	11
TP6-K-2	0.24-0.5	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	30	<10
TP6-L-2	0.6-0.8	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	66	46	13
TP6-M-2	0.3-0.5	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**230**	64	23
TP6-N-2	0.2-0.3	7-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	94	53
TP6.5-FG-1	0-0.05	12-Aug-10	0.1	<0.04	<0.02	<0.08	<20	40	200	70
TP6.5-KL-3	0.3-0.45	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	73	17
TP6.5-LM-2	0.4-0.8	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP6.5-MN-2	0.1-0.2	13-Aug-10	-	-	-	-	-	**11000**	**1200**	<10
TP6.5-MN-7	0.8-1.1	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	74	14	<10
TP6.5-NO-3	0.45-0.65	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	75	35
TP7-C-2	0.15-0.45	11-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	85	31
TP7-H-1	0-0.1	12-Aug-10	<0.02	<0.06	<0.03	<0.1	<30	<30	260	210
TP7-L-2	0.15-0.5	9-Aug-10	<0.005	<0.02	<0.01	<0.04	13	**1800**	**310**	33
TP7-L-4	0.65-0.75	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP7-M-2	0.25-0.5	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	-	-	-
TP7-MN-5	0.4-0.5	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	120	10
TP7-N-2	0.4-0.6	7-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**190**	80	37
TP7.5-FG-3	0.6-0.85	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	38	19
TP7.5-KL-3	0.3-0.4	14-Aug-10	<0.005	0.22	<0.01	<0.04	<10	19	120	37
TP7.5-LM-1	0-0.5	13-Aug-10	<0.01	<0.04	<0.02	<0.08	<20	<20	99	<20
TP7.5-NO-2	0.1-0.5	13-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	120	43
TP8-H-3	0.5-0.7	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	33	16
TP8-L-2	0.2-0.65	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	47	<10
TP8-M-1	0-0.15	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	190	120
TP8.5-EF-2	0.3-0.6	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	22	<10
TP9-C-2	0.1-0.5	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP9-CD-2	0.1-0.3	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	71	18
TP9-L-3	0.5-0.8	9-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	73	10
TP9-M-2	0.4-0.5	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	110	13
TP9-N-2	0.5-0.6	6-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	31	13
TP9.5-I-2	0.05-0.45	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	60	13
TP9.5-MN-2	0.1-0.25	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	**270**	97	33
TP9.5-NO-3	0.6-0.8	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	26	19
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	<10	22	10
TP10-E-3	0.4-0.7	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	25	<10
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	<10	24	<10
TP10-N-2	0.4-0.5	6-Aug-10	<0.005	<0.02	<0.01	0.36	71	**390**	<10	<10
TP10-N-3	0.6-0.7	6-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP10-O-2	0.3-0.4	6-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	110	49
TP10.5-H-2	0.05-0.4	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	100	35
TP10.5-MN-1	0-0.3	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	45	18
TP10.5-NO-2	0.15-0.3	12-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	78	41
TP11-LM-1	0-0.2	8-Aug-10	<0.01	<0.04	<0.02	<0.08	<20	76	**340**	200
TP11-M-2	0.4-0.65	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	35	<10
TP11-N-3	0.7-0.8	6-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
	Lab-Dup		-	-	-	-	-	<10	<10	<10
TP11.6-LM-3	0.5-0.6	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	61	24
TP11.6-M-2	0.4-0.5	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	33	<10
TP12-N-2	0.4-0.5	6-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	59	32
TP12.3-LM-1	0-0.1	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	62	11
TP12.3-M-2	0.3-0.5	8-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	40	<10
TP12.5-E-1	0-0.1	12-Aug-10	<0.01	<0.04	<0.02	<0.08	<20	<20	62	<20
TP-Dump-2-3	1.0-1.15	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
	Lab-Dup		<0.005	<0.02	<0.01	<0.04	<10	-	-	-
TP-Dump-4-2	0.05-0.45	14-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	68	17
TP-NBDump-1-2	0.1-0.6	15-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP-NBDump-2-1	0.02-0.2	15-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP-NBDump-3-2	0.1-0.75	15-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
TP-NBDump-4-2	0.3-0.4	15-Aug-10	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10
SS 10-1	0-0.3	15-Aug-10	<0.05	<0.2	<0.1	<0.4	**260**	**10000**	**4000**	140
2008 Phase III ESA										
FD-TP2-SA3	0.5 - 0.7	12-Aug-08	<0.005	<0.02	<0.01	<0.04	<12	**2500**	**1800**	<10
FD-TP5-SA3	0.5 - 0.7	12-Aug-08	<0.005	<0.02	<0.01	<0.04	<12	**1600**	**1000**	13
WPH-TP1-SA2	0.2 - 0.5	12-Aug-08	<0.005	<0.02	<0.01	4	**1100**	**5800**	**5300**	700
WPH-TP2-SA4	0.8 - 1.0	12-Aug-08	<0.005	<0.02	<0.01	5.2	**310**	**6000**	**810**	89
WPH-TP6-SA3	0.6 - 0.7	12-Aug-08	<0.005	<0.02	<0.01	<0.04	31	**2700**	**620**	91
FT-TP1-SA4	0.8 - 1.0	13-Aug-08	<0.005	<0.02	<0.01	1.9	130	**850**	91	<10
FT-TP2-SA2	0.2 -0.4	13-Aug-08	<0.005	<0.02	<0.01	14	200	**5000**	**390**	<10
HGB2-TP1-SA2	0.1 - 0.3	13-Aug-08	<0.005	<0.02	<0.01	0.35	**390**	**18000**	**4200**	41
R-TP1-SA2	0.2 - 0.6	13-Aug-08	<0.005	<0.02	<0.01	4.7	**420**	**11000**	**1100**	37
SD-TP2-SA1	0.0 - 0.1	13-Aug-08	<0.005	<0.02	<0.01	0.042	49	**6900**	**73000**	**120000***
SW-TP1-SA3	0.4 - 0.6	13-Aug-08	<0.005	<0.02	<0.01	0.18	**1200**	**13000**	**1300**	37
SW-TP3-SA3	0.4 - 0.7	13-Aug-08	<0.005	<0.02	<0.01	2.2	130	**2800**	**720**	31
BRLBCH-TP2-SA3	0.3 - 0.9	14-Aug-08	<0.005	<0.02	<0.01	<0.04	<12	**640**	**240**	20
WH-TP2-SA3	0.5 - 0.7	14-Aug-08	<0.005	<0.02	<0.01	<0.04	<12	**11000**	**4100**	30
WH-TP5-SA2	0.2 - 0.6	14-Aug-08	N/A	N/A	N/A	N/A	N/A	**5700**	**2000**	<10
RDL			0.005	0.02	0.01	0.04	10	10	10	10
CCME CSQGs Residential Land Use		SQG_{HH} Soil Ingestion	110	22,000	10,000	150,000	-	-	-	-
		SQG_E Soil Contact	31	75	55	95	-	-	-	-
GN Guidelines (based on CWS for PHC in Soil for F1/F2/F3/F4 Residential Land Use)		SQG_{HH} Direct Contact	-	-	-	-	12,000	6,800	15,000	21,000
		Management	-	-	-	-	700	1,000	2,500	10,000
		SQG_E Soil Contact	-	-	-	-	210	150	300	2,800

Notes:

RDL = Laboratory reportable detection limit
CCME = Canadian Council of Ministers of the Environment
CCME CSQG = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
SQG_{HH} = Soil Quality Guideline for Human Health; Soil Ingestion exposure pathway; $1x10^{-5}$ incremental risk for benzene
SQG_E = Soil Quality Guideline for Environmental Health, Soil Contact exposure pathway
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CWS for PHC (Residential) = Canada Wide Standards for Petroleum Hydrocarbons in Soil, 2008 (coarse-grained surface soil at residential sites, Tier 2 Pathway Specific Guidelines
F1/F2/F3/F4 = Equivalent normal straight-chain hydrocarbon boiling point ranges, divided into four fractions
BTEX = Benzene, toluene, ethylbenzene and xylenes
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
* = hydrocarbon sub-fractionation converted to F1-F3 fractions to compare with guidelines- see Table D-3 for sub-fractionation results
** = only partial F3 available from sub-fractionation (C16-C32)
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent Guideline
- = No applicable guideline/standard

TABLE G-2 **SOIL PETROLEUM HYDROCARBON SUB-FRACTIONATION CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter			Sample ID, Depth, Date					RDL
			TP1.5-M-2	TP2-EF-1		TP3.5-F-2	TP4-L-4	
			0.3-0.5	0-0.45	Lab-Dup	0.3-0.6	0.8-0.85	
			8-Aug-10	11-Aug-10		11-Aug-10	9-Aug-10	
BTEX Parameters (mg/kg or ppm)	Benzene		<0.03	<0.03	-	<0.03	<0.03	0.030
	Toluene		<0.03	<0.03	-	<0.03	<0.03	0.03
	Ethylbenzene		<0.03	<0.03	-	0.26	<0.03	0.03
	Xylenes		<0.05	<0.05	-	8.5	<0.05	0.05
Petroluem Hydrocarbons (mg/kg or ppm)	Aliphatic	>C6-C8	39.5	0.5	-	47	5.9	0.5
	Aliphatic	>C8-C10	37	58	-	990	100	0.4
	Aromatic (-EX)	>C8-C10	2.5	2.2	-	230	7.8	0.1
	Aliphatic	>C10-C12	440	150	100	2300	1100	8.0
	Aromatic	>C10-C12	84	11	9.2	710	280	4.0
	Aliphatic	>C12-C16	910	390	270	4100	2700	15
	Aromatic	>C12-C16	230	71	58	1400	840	15
	Aliphatic	>C16-C21	180	84	61	590	1100	15
	Aromatic	>C16-C21	67	30	26	240	460	15
	Aliphatic	>C21-C32	67	31	22	19	33	15
	Aromatic	>C21-C32	20	31	38	65	44	15
	Modified TPH	(Tier 2)	2000	860	-	11000	6700	20
	Resemblance		fuel oil fraction	fuel oil fraction	-	fuel oil fraction	fuel oil fraction	-

Notes:

RDL = Laboratory reportable detection limit
BTEX = Benzene, toluene, ethylbenzene and xylenes
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram

TABLE G-3 **SOIL METALS CHEMISTRY**

Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG Residential Land Use)		Sample ID, Depth (mbg), Sample Date														
					2010 Supplemental Phase III ESA														
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	TP1-J-1 (0-0.3)	TP1.5-M-2 (0.3-0.5)	TP1.5-P-1 (0-0.3)	TP2-EF-1 (0-0.45)	TP2-J-1 (0-0.3)	TP2.5-NO-2 (0.25-0.7)		TP2.5-P-1 (0-0.15)	TP3-L-1 (0-0.35)	TP3-M-2 (0.35-0.5)		TP3-N-2 (0.4-0.6)	TP3.5-DE-1 (0.0-0.35)	TP3.5-E-1 (0.0-0.4)	TP3.5-F-2 (0.3-0.6)
					10-Aug-10	8-Aug-10	7-Aug-10	11-Aug-10	10-Aug-10	13-Aug-10	Lab-Dup	7-Aug-10	9-Aug-10	8-Aug-10	Lab-Dup	7-Aug-10	11-Aug-10	11-Aug-10	11-Aug-10
Aluminum	mg/kg	50	-	-	1800	1900	2700	4600	1200	12000	-	4900	2500	5900	6100	6700	920	6400	9900
Antimony	mg/kg	0.2	20*		0.7	<0.2	<0.2	<0.2	6.2	0.3	-	1.2	0.3	<0.2	<0.2	<0.2	<0.2	0.2	<0.2
Arsenic	mg/kg	1	12	17	<1	<1	<1	<1	<1	2	-	2	1	<1	<1	<1	<1	<1	<1
Barium	mg/kg	0.5	500*		13	12	16	26	56	51	-	64	17	30	31	32	7.5	38	41
Beryllium	mg/kg	0.2	4*		<0.2	<0.2	<0.2	<0.2	<0.2	0.3	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bismuth	mg/kg	1	-	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	<0.05	0.07	0.13	0.12	0.22	0.51	-	2.7	0.12	0.22	-	0.16	0.12	0.69	0.58
Cadmium	mg/kg	0.1	14	10	<0.1	<0.1	1	<0.1	<0.1	<0.1	-	1	0.1	<0.1	<0.1	<0.1	0.3	0.2	<0.1
Chromium	mg/kg	1	220	64	7	7	5	10	3	16	-	25	6	10	10	12	2	9	16
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2
Cobalt	mg/kg	0.1	50*		1.7	1.5	1.7	2.7	0.9	6.8	-	7.8	1.9	3.6	3.6	4.7	0.7	3.1	6.2
Copper	mg/kg	0.5	1100	63	21	4.3	8.3	7.2	4.9	39	-	**81**	19	9.2	10	5.1	2	11	11
Iron	mg/kg	50	-	-	9900	9100	7200	10000	4900	23000	-	16000	7700	12000	12000	17000	2000	11000	19000
Lead	mg/kg	1	140	300	29	4	22	10	70	37	-	100	45	9	13	6	3	14	6
Manganese	mg/kg	1	-	-	62	55	75	90	33	240	-	390	83	150	160	190	24	100	190
Mercury	mg/kg	0.05	6.6	12	<0.05	<0.05	<0.05	<0.05	<0.05	0.13	-	0.53	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum	mg/kg	0.5	10*		<0.5	<0.5	<0.5	<0.5	<0.5	0.8	-	2.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	-	50	2.8	2.3	2.9	4.9	1.6	9.8	-	15	4	5.9	5.8	7.2	1.5	5.8	9
Selenium	mg/kg	0.5	80**	1	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	0.7
Silver	mg/kg	0.2	20*		<0.2	0.2	1.1	<0.2	<0.2	<0.2	-	**36**	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Strontium	mg/kg	1	-	-	4	4	4	5	5	13	-	28	6	7	7	7	1	4	6
Thallium	mg/kg	0.05	1***	1.4	<0.05	0.07	0.08	0.13	<0.05	0.26	-	0.15	0.07	0.14	0.15	0.16	<0.05	0.15	0.24
Tin	mg/kg	5	50*		15	<5	11	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5
Uranium	mg/kg	0.05	23**	500	0.77	0.52	0.43	0.77	0.42	0.92	-	0.74	0.63	0.43	0.52	0.53	0.05	0.72	1.1
Vanadium	mg/kg	5	-	130	19	19	15	23	10	35	-	24	16	22	24	31	<5	21	35
Zinc	mg/kg	5	-	200	28	34	46	57	25	57	-	**470**	45	28	28	31	8	40	34

Notes:

RDL = Laboratory reportable detection limit
N/A = Parameter not analyzed
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for Residential Land Use, Coarse-grained Soil, Protection of [a] Human Health (soil ingestion pathway)and [b] Environmental (soil contact pathway) (1999; last update 2007)
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = background sample
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard

TABLE G-3 **SOIL METALS CHEMISTRY**

Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG Residential Land Use)		Sample ID, Depth (mbg), Sample Date														
					2010 Supplemental Phase III ESA														
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	TP3.5-GH-1 (0-0.5)	TP3.5-KL-2 (0.2-0.6)	TP4-M-2 (0.2-0.35)	TP4.5-LM-2 (0.05-0.6)	TP4.5-MN-2 (0.05-0.32)	TP5-B-1 (0-0.15)	TP5-M-1 (0-0.1)	TP5.5-LM-2 (0.05-0.55)	TP6-M-2 (0.3-0.5)	TP6-N-2 (0.2-0.3)	TP6.5-FG-1 (0-0.05)	TP6.5-LM-2 (0.4-0.8)	TP6.5-MN-6 (0.5-0.8)	TP6.5-NO-2 (0.1-0.45)	TP7-C-2 (0.1-0.3)
					15-Aug-10	14-Aug-10	8-Aug-10	14-Aug-10	13-Aug-10	11-Aug-10	8-Aug-10	14-Aug-10	8-Aug-10	7-Aug-10	12-Aug-10	14-Aug-10	13-Aug-10	13-Aug-10	11-Aug-10
Aluminum	mg/kg	50	-	-	5500	2100	12000	11000	14000	8100	12000	13000	6800	14000	6300	5900	11000	14000	9500
Antimony	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	1.2	<0.2	<0.2	<0.2	<0.2
Arsenic	mg/kg	1	12	17	<1	1	1	2	2	<1	1	2	<1	1	2	1	2	2	<1
Barium	mg/kg	0.5	500*		24	11	52	47	59	33	54	59	36	63	150	28	44	64	36
Beryllium	mg/kg	0.2	4*		<0.2	<0.2	0.2	0.3	0.3	0.2	0.4	0.3	<0.2	0.3	<0.2	<0.2	<0.2	0.2	0.3
Bismuth	mg/kg	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	0.07	0.2	0.13	0.1	0.25	1.2	0.24	0.23	0.28	0.19	0.67	0.2	0.68	0.21	0.11
Cadmium	mg/kg	0.1	14	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	1.3	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	1	220	64	13	6	17	18	21	12	20	21	14	22	16	12	16	23	14
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	mg/kg	0.1	50*		4.4	1.3	6.9	6.7	8.4	4.2	6.9	8	5	7.7	8.4	4.1	6.2	8.3	4.7
Copper	mg/kg	0.5	1100	63	3.2	1.8	20	9	9.4	7.9	8.1	10	6.8	9.8	**74**	6	10	10	10
Iron	mg/kg	50	-	-	17000	7800	21000	21000	25000	16000	23000	24000	17000	26000	15000	17000	21000	27000	16000
Lead	mg/kg	1	140	300	4	2	8	6	7	6	8	7	5	8	**1200**	5	5	8	6
Manganese	mg/kg	1	-	-	290	50	240	260	310	140	270	280	210	260	560	160	240	310	140
Mercury	mg/kg	0.05	6.6	12	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	0.36	<0.05	0.1	<0.05	<0.05
Molybdenum	mg/kg	0.5	10*		<0.5	2	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	-	50	6	2.5	10	10	12	7.5	11	12	7.4	13	22	6.3	10	13	8.1
Selenium	mg/kg	0.5	80**	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Strontium	mg/kg	1	-	-	4	2	8	9	9	9	9	8	7	9	21	8	10	10	5
Thallium	mg/kg	0.05	1***	1.4	0.15	0.06	0.3	0.31	0.37	0.19	0.33	0.38	0.21	0.36	0.14	0.18	0.28	0.39	0.23
Tin	mg/kg	5	50*		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	5	<5	<5	<5	<5
Uranium	mg/kg	0.05	23**	500	0.52	0.42	0.66	0.97	0.83	0.83	0.91	1.1	0.81	1	0.68	0.76	1.6	1.1	1.2
Vanadium	mg/kg	5	-	130	31	15	39	39	44	29	42	47	30	48	21	30	35	48	32
Zinc	mg/kg	5	-	200	32	10	45	40	48	28	47	47	29	50	**1500**	23	40	49	30

Notes:

RDL = Laboratory reportable detection limit
N/A = Parameter not analyzed
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for Residential Land Use, Coarse-grained Soil, Protection of [a] Human Health (soil ingestion pathway)and [b] Environmental (soil contact pathway) (1999; last update 2007)
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = background sample
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard

TABLE G-3 **SOIL METALS CHEMISTRY**

Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG Residential Land Use)		Sample ID, Depth (mbg), Sample Date														
					2010 Supplemental Phase III ESA														
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	TP7-H-1 (0-0.1)	TP7-M-2 (0.25-0.5)	TP7-MN-1 (0-0.1)	TP7-MN-2 (0.1-0.2)	TP7-MN-3 (0.2-0.3)	TP7-MN-4 (0.3-0.4)	TP7-MN-5 (0.4-0.5)		TP7-N-2 (0.4-0.6)	TP7.5-LM-1 (0-0.5)	TP7.5-MN-2 (0.04-0.5)	TP7.5-NO-2 (0.1-0.5)	TP8-L-1 (0-0.2)	TP8-M-1 (0-0.15)	TP8.5-EF-2 (0.3-0.6)
					12-Aug-10	8-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10	Lab-Dup	7-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10	9-Aug-10	8-Aug-10	12-Aug-10
Aluminum	mg/kg	50	-	-	8800	8500	340000	340000	100000	18000	22000	23000	15000	23000	11000	16000	1100	14000	3400
Antimony	mg/kg	0.2	20*		0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.5	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	mg/kg	1	12	17	1	<1	<1	1	1	1	<1	1	2	2	2	2	<1	1	<1
Barium	mg/kg	0.5	500*		78	39	1.8	4.6	41	62	70	69	65	48	43	69	24	48	20
Beryllium	mg/kg	0.2	4*		<0.2	<0.2	<0.2	<0.2	<0.2	0.3	0.2	0.4	0.2	<0.2	0.2	0.5	<0.2	<0.2	<0.2
Bismuth	mg/kg	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	2	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	2.7	0.54	3.4	2.1	1.3	0.58	0.79	-	0.29	1.7	0.12	0.32	0.22	0.25	0.08
Cadmium	mg/kg	0.1	14	10	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	0.2	<0.1
Chromium	mg/kg	1	220	64	13	14	2	4	14	18	19	19	23	15	15	25	1	19	7
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	mg/kg	0.1	50*		9.9	5.4	0.3	0.6	4.6	7.5	7.9	7.6	8.5	5.7	5.6	8.9	0.3	6.1	2.4
Copper	mg/kg	0.5	1100	63	20	15	10	20	12	4.8	5.6	5.8	14	55	7.6	14	2.8	**230**	3.4
Iron	mg/kg	50	-	-	16000	19000	1100	1600	16000	24000	29000	30000	26000	16000	18000	27000	1200	17000	9200
Lead	mg/kg	1	140	300	38	5	5	5	12	7	7	7	19	140	6	8	12	40	7
Manganese	mg/kg	1	-	-	810	210	17	40	520	560	520	490	290	480	200	370	110	290	86
Mercury	mg/kg	0.05	6.6	12	0.1	<0.05	<0.05	0.13	<0.05	<0.05	<0.05	<0.05	<0.05	0.14	0.17	0.1	<0.05	<0.05	<0.05
Molybdenum	mg/kg	0.5	10*		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	-	50	9.2	7.9	6.3	3.8	7.6	9.2	9.7	9.6	14	9.1	8.4	14	0.8	18	3.9
Selenium	mg/kg	0.5	80**	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Strontium	mg/kg	1	-	-	22	10	16	9	9	11	12	12	10	20	7	12	4	8	3
Thallium	mg/kg	0.05	1***	1.4	0.23	0.23	0.05	<0.05	0.24	0.36	0.35	0.33	0.42	0.21	0.27	0.45	<0.05	0.27	0.11
Tin	mg/kg	5	50*		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium	mg/kg	0.05	23**	500	1.2	0.58	0.34	0.6	0.9	0.65	1.1	1.1	1.2	0.75	0.97	1.2	0.07	0.51	0.55
Vanadium	mg/kg	5	-	130	29	34	9	7	24	31	32	32	49	28	34	52	<5	35	18
Zinc	mg/kg	5	-	200	59	32	58	31	65	44	46	44	58	120	35	59	14	50	20

Notes:

RDL = Laboratory reportable detection limit
N/A = Parameter not analyzed
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for Residential Land Use, Coarse-grained Soil, Protection of [a] Human Health (soil ingestion pathway)and [b] Environmental (soil contact pathway) (1999; last update 2007)
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TABLE G-3 **SOIL METALS CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG Residential Land Use)		Sample ID, Depth (mbg), Sample Date														
					2010 Supplemental Phase III ESA														
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	TP9-C-2 (0.1-0.5)	TP9-CD-2 (0.1-0.3)		TP9-M-2 (0.4-0.5)	TP9.5-I-2 (0.05-0.45)	TP10-E-1 (0-0.1)	TP10-N-2 (0.4-0.5)	TP10.5-H-2 (0.05-0.4)	TP11-LM-1 (0-0.2)	TP11-M-2 (0.4-0.65)	TP11.6-LM-1 (0-0.2)	TP11.6-M-1 (0-0.1)	TP12-N-2 (0.4-0.5)	TP12.3-LM-1 (0-0.1)	TP12.3-M-2 (0.3-0.5)
					14-Aug-10	14-Aug-10	Lab-Dup	8-Aug-10	14-Aug-10	12-Aug-10	6-Aug-10	14-Aug-10	8-Aug-10	8-Aug-10	8-Aug-10	8-Aug-10	6-Aug-10	8-Aug-10	8-Aug-10
Aluminum	mg/kg	50	-	-	13000	4800	4800	9000	15000	9300	6000	18000	13000	7700	11000	12000	13000	9300	4600
Antimony	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	1.1	<0.2	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	mg/kg	1	12	17	2	<1	<1	1	1	<1	<1	2	1	1	1	1	1	<1	<1
Barium	mg/kg	0.5	500*		65	18	18	45	61	90	29	74	61	34	55	53	54	36	20
Beryllium	mg/kg	0.2	4*		0.2	<0.2	<0.2	0.2	0.3	<0.2	<0.2	0.5	0.4	<0.2	0.2	0.2	0.3	0.2	<0.2
Bismuth	mg/kg	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	0.06	0.12		0.24	0.17	**3**	0.16	0.22	0.59	0.14	0.43	0.25	0.28	0.22	0.06
Cadmium	mg/kg	0.1	14	10	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	1	220	64	21	7	7	15	21	28	12	25	19	13	17	19	19	14	7
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	mg/kg	0.1	50*		8.8	2.4	2.4	6.4	8.7	10	4.4	12	11	5.7	6.4	6.7	7.2	4.9	3
Copper	mg/kg	0.5	1100	63	14	5.8	5.9	9	13	**85**	6.3	14	16	8.1	13	13	11	8.3	5.3
Iron	mg/kg	50	-	-	26000	8700	8900	21000	23000	15000	16000	31000	23000	15000	22000	23000	24000	18000	13000
Lead	mg/kg	1	140	300	8	4	3	7	7	**180**	4	8	9	5	7	7	7	6	3
Manganese	mg/kg	1	-	-	350	72	71	260	350	720	160	480	310	180	180	190	220	160	82
Mercury	mg/kg	0.05	6.6	12	<0.05	0.07	<0.05	<0.05	0.06	0.14	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum	mg/kg	0.5	10*		<0.5	<0.5	<0.5	<0.5	0.5	0.5	<0.5	0.7	<0.5	0.6	0.6	0.5	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	-	50	13	4.1	4.1	9.2	12	15	7	15	11	7.7	10	11	11	7.9	4.4
Selenium	mg/kg	0.5	80**	1	<0.5	<0.5	<0.5	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	mg/kg	0.2	20*		<0.2	<0.2	<0.2	0.5	<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Strontium	mg/kg	1	-	-	10	4	4	10	6	40	7	9	12	7	9	7	8	6	3
Thallium	mg/kg	0.05	1***	1.4	0.39	0.1	0.1	0.26	0.42	0.16	0.19	0.47	0.35	0.23	0.31	0.36	0.33	0.24	0.14
Tin	mg/kg	5	50*		<5	<5	<5	<5	<5	11	<5	<5	<5	<5	<5	<5	<5	<5	<5
Uranium	mg/kg	0.05	23**	500	1.1	0.52	0.56	0.75	1.3	1.6	0.76	1.4	1.1	0.87	1.5	1.2	1.2	0.88	0.59
Vanadium	mg/kg	5	-	130	46	17	18	35	45	21	31	52	41	29	39	44	41	33	19
Zinc	mg/kg	5	-	200	55	34	33	36	47	130	27	56	44	31	43	43	40	32	17

Notes:

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* = interim soil quality guideline (CCME 1991)
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TABLE G-3 **SOIL METALS CHEMISTRY**

Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG Residential Land Use)		Sample ID, Depth (mbg), Sample Date														
					2010 Supplemental Phase III ESA														
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	TP12.5-E-1 (0-0.1)	TP13-N-1 (0-0.1)	TP-Dump-1-1 (0-0.5)	TP-Dump-2-3 (1.0-1.15)	TP-Dump-4-2 (0.05-0.45)	TP-Dump-5-2 (0.05-0.55)	TP-NBDump-1-2 (0.1-0.6)	TP-NBDump-2-1 (0.02-0.2)	TP-NBDump-3-2 (0.1-0.75)		TP-NBDump-4-2 (0.3-0.4)	SS 10-1 (0-0.3)	OCR-S1 (0-0.1)	OCR-SE2 (0-0.1	OCR-S9 (0-0.1)
					12-Aug-10	6-Aug-10	14-Aug-10	14-Aug-10	14-Aug-10	15-Aug-10	15-Aug-10	15-Aug-10	15-Aug-10	Lab-Dup	15-Aug-10	15-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10
Aluminum	mg/kg	50	-	-	6600	15000	7300	3600	2100	9000	2300	6200	6200	-	10000	8000	9600	7700	5500
Antimony	mg/kg	0.2	20*		5.3	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	<0.2	-	<0.2	1.9	1	1.2	<0.2
Arsenic	mg/kg	1	12	17	2	1	1	<1	<1	1	<1	<1	<1	-	<1	1	2	4	1
Barium	mg/kg	0.5	500*		41	64	42	20	12	45	13	29	30	-	40	40	120	140	29
Beryllium	mg/kg	0.2	4*		<0.2	0.4	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	0.2	<0.2	0.3	<0.2	<0.2
Bismuth	mg/kg	1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	2	0.16	0.06	0.07	0.29	0.23	<0.05	0.14	0.62	-	0.26	0.36	3	0.76	0.64
Cadmium	mg/kg	0.1	14	10	1.5	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	1	0.6	<0.1
Chromium	mg/kg	1	220	64	18	22	13	9	6	15	6	11	12	-	15	16	17	13	8
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	<0.2	<0.2	**0.5**	**0.5**	<0.2	<0.2	<0.2
Cobalt	mg/kg	0.1	50*		4.5	8.2	6.1	3	1.8	5.3	1.9	3.8	4.6	-	6.1	5	17	13	3.5
Copper	mg/kg	0.5	1100	63	**65**	14	10	3.8	1.8	10	1.8	8.1	7.5	-	11	18	**71**	28	5.1
Iron	mg/kg	50	-	-	25000	25000	19000	12000	8500	18000	8400	14000	15000	-	17000	16000	17000	18000	9600
Lead	mg/kg	1	140	300	**1300**	7	24	4	2	6	3	4	4	-	6	29	110	**220**	4
Manganese	mg/kg	1	-	-	170	260	250	120	62	180	67	130	170	-	190	160	3100	3000	150
Mercury	mg/kg	0.05	6.6	12	0.21	<0.05	0.3	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	6.6	0.38	<0.05
Molybdenum	mg/kg	0.5	10*		0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	-	<0.5	<0.5	0.8	0.7	<0.5
Nickel	mg/kg	0.5	-	50	13	13	8	4.4	2.5	7.9	2.8	6.5	7.2	-	8.4	8.2	15	11	4.9
Selenium	mg/kg	0.5	80**	1	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	**2.7**	0.7	<0.5
Silver	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	0.7	0.7	<0.2
Strontium	mg/kg	1	-	-	19	8	9	5	3	4	3	5	8	-	5	7	65	15	5
Thallium	mg/kg	0.05	1***	1.4	0.13	0.42	0.23	0.13	0.07	0.26	0.09	0.19	0.21	-	0.28	0.24	0.24	0.23	0.15
Tin	mg/kg	5	50*		28	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	23	8	<5
Uranium	mg/kg	0.05	23**	500	0.61	1.3	0.95	0.62	0.39	1	0.44	0.63	0.82	-	1.1	1.1	1.4	0.58	0.57
Vanadium	mg/kg	5	-	130	23	46	31	23	16	33	16	26	27	-	33	29	24	26	24
Zinc	mg/kg	5	-	200	**260**	50	48	17	10	34	12	25	28	-	33	200	200	**210**	20

Notes:

RDL = Laboratory reportable detection limit
N/A = Parameter not analyzed
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for Residential Land Use, Coarse-grained Soil, Protection of [a] Human Health (soil ingestion pathway)and [b] Environmental (soil contact pathway) (1999; last update 2007)
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = background sample
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard

TABLE G-3 **SOIL METALS CHEMISTRY**

Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG Residential Land Use)		Sample ID, Depth (mbg), Sample Date														
					2010 Supplemental Phase III ESA					2008 Phase III ESA									
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	OCR-S12 (0-0.1)	OCR-S20 (0-0.1)	BCR-S21 (0-0.1)	BCR-S24 (0-0.1)	BCR-S26 (0-0.1)	OT-BKG-01 (0.0 - 0.4)	SW-TP1-SA3 (0.4 - 0.6)	WPH-TP1-SA2 (0.3 - 0.5)	FD-TP2-SA3 (0.5 -0.7)	R-TP1-SA1 (0.0 - 0.3)	HGB3-TP1-SA1 (0.0 - 0.1)	HGB1-TP1-SA3 (0.0 - 0.2)	SD-TP1-SA1 (0.0 - 0.3)	R-TP1-SA2 (0.3 - 0.6)	FT-TP2-SA2 (0.2 - 0.4)
					13-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10	13-Aug-10	14-Aug-08	13-Aug-08	12-Aug-08	12-Aug-08	14-Aug-08	13-Aug-08	13-Aug-08	13-Aug-08	13-Aug-08	13-Aug-08
Aluminum	mg/kg	50	-	-	13000	11000	7400	2200	9800	11000	12000	2800	N/A	150	110000	18000	13000	11000	N/A
Antimony	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<1	5	N/A	<1	<1	N/A
Arsenic	mg/kg	1	12	17	1	2	<1	<1	<1	2	2	<1	2	2	1	N/A	2	2	N/A
Barium	mg/kg	0.5	500*		65	53	37	13	35	51	48	18	19	44	33	N/A	53	49	N/A
Beryllium	mg/kg	0.2	4*		0.3	<0.2	0.2	<0.2	0.2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	N/A	<0.4	<0.4	N/A
Bismuth	mg/kg	1	-	-	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	1.1	0.2	0.6	0.09	0.19	0.1	0.4	<0.1	0.1	0.1	0.4	N/A	0.5	0.3	N/A
Cadmium	mg/kg	0.1	14	10	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	8.2	N/A	0.1	<0.1	N/A
Chromium	mg/kg	1	220	64	19	19	12	6	15	26	20	5	6	16	**160**	N/A	24	22	N/A
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	<0.2	<0.2	<0.2	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	N/A	<0.15	<0.15	N/A
Cobalt	mg/kg	0.1	50*		7.7	8.6	4.3	1.9	4.4	7	5	2	2	6	7	N/A	7	7	N/A
Copper	mg/kg	0.5	1100	63	10	8	6.1	3.5	7.6	10	7	<5	<5	7	**12000**	N/A	**64**	11	N/A
Iron	mg/kg	50	-	-	22000	24000	14000	8400	18000	-	-	-	-	-	**-**	-	**-**	-	-
Lead	mg/kg	1	140	300	8	7	5	5	6	5	6	2	4	6	**1200**	N/A	69	6	3
Manganese	mg/kg	1	-	-	390	350	150	56	140	-	-	-	-	-	**-**	-	-	-	-
Mercury	mg/kg	0.05	6.6	12	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	0.05	N/A	<0.05	<0.05	N/A
Molybdenum	mg/kg	0.5	10*		<0.5	0.5	<0.5	<0.5	<0.5	0.6	0.5	<0.4	1.6	0.4	<0.4	N/A	0.6	0.4	N/A
Nickel	mg/kg	0.5	-	50	12	11	7.4	2.5	7.9	14	11	3	3	10	**500**	N/A	15	13	N/A
Selenium	mg/kg	0.5	80**	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	<0.5	<0.5	N/A
Silver	mg/kg	0.2	20*		<0.2	<0.2	<0.2	<0.2	<0.2	<1	<1	<1	<1	<1	<1	N/A	<1	<1	N/A
Strontium	mg/kg	1	-	-	15	9	7	3	4	-	-	-	-	-	-	-	-	-	-
Thallium	mg/kg	0.05	1***	1.4	0.32	0.33	0.2	0.07	0.25	0.3	<0.3	<0.3	<0.3	0.5	0.8	N/A	0.3	0.3	N/A
Tin	mg/kg	5	50*		<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	9	N/A	1	<1	N/A
Uranium	mg/kg	0.05	23**	500	0.93	0.9	0.73	0.72	0.92	-	-	-	-	-	-	-	-	-	-
Vanadium	mg/kg	5	-	130	39	45	27	21	32	37	31	10	18	29	16	N/A	34	36	N/A
Zinc	mg/kg	5	-	200	44	44	29	12	35	43	36	17	19	38	**510**	N/A	190	46	N/A

Notes:

RDL = Laboratory reportable detection limit
N/A = Parameter not analyzed
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for Residential Land Use, Coarse-grained Soil, Protection of [a] Human Health (soil ingestion pathway)and [b] Environmental (soil contact pathway) (1999; last update 2007)
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = background sample
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard

TABLE G-4 **SOIL pH**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Sample Depth (mbg)	Date Sampled	pH
TP0.5-G-1	0-0.3	10-Aug-10	6.03
TP2-F-1	0-0.4	11-Aug-10	**5.1**
TP2.5-P-2	0.3-0.5	7-Aug-10	**4.72**
	Lab-Dup		**4.73**
TP5-K-2	0.15-0.6	9-Aug-10	**4.89**
TP5.5-MN-5	0.4-0.5	13-Aug-10	7.72
TP7-L-2	0.15-0.5	9-Aug-10	**5.09**
TP7-MN-1	0-0.1	13-Aug-10	7.89
TP10-O-2	0.3-0.4	6-Aug-10	**4.54**
TP11.6-LM-1	0-0.2	8-Aug-10	**4.35**
RDL			-
GN Guidelines (based on CCME CSQGs Residential Land Use)			6 to 8

Notes:

RDL = Laboratory reportable detection limit
CCME = Canadian Council of Ministers of the Environment
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CCME CSQG = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
mbg = Metres below grade
Bold & Underlined = Outside Guideline Range

TABLE G-5

SOIL POLYCYCLIC AROMATIC HYDROCARBON CHEMISTRY
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	RDL	Units	CCME Residential Land Use [1]		Sample ID & depth (mbg) 2010 Supplemental Phase III ESA															
			B(a)P PEF [6] (Human Health)	Individual PAH Compounds (Ecological Health)	TP1-J-1 (0-0.3)	TP1.5-M-2 (0.3-0.5)	TP2-EF-1 (0-0.45)	TP2.5-P-2 (0.3-0.5)	TP3-N-2 (0.4-0.6)		TP3.5-E-3 (0.45-0.8)	TP3.5-F-2 (0.3-0.6)	TP3.5-GH-1 (0-0.5)		TP3.5-KL-3 (0.6-0.95)	TP4-L-4 (0.8-0.85)	TP5-L-2 (0.5-0.8)	TP5.5-MN-5 (0.4-0.5)	TP9-CD-2 (0.1-0.3)	TP10-N-2 (0.4-0.5)	TP11.6-M-2 (0.4-0.5)
Non-Carcinognic PAHs			**Date collected:**		10-Aug-10	8-Aug-10	11-Aug-10	7-Aug-10	7-Aug-10	Lab-Dup	11-Aug-10	11-Aug-10	15-Aug-10	Lab-Dup	14-Aug-10	9-Aug-10	9-Aug-10	13-Aug-10	14-Aug-10	6-Aug-10	8-Aug-10
2-Methylnaphthalene	0.005	mg/kg	-	-	<0.0050	<0.0050	0.01	7.2	0.43	0.45	240	73	<0.0050	<0.0050	<0.0050	12	0.71	17	<0.0050	1.6	<0.0050
Acenaphthene	0.005	mg/kg	-	21.5[2]	<0.0050	0.027	<0.0050	0.43	0.32	0.34	4.8	2.5	<0.0050	<0.0050	<0.0050	0.57	0.91	<0.40	<0.0050	0.050	<0.0050
Acenaphthylene	0.005	mg/kg	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.90	0.31	<0.0050	<0.0050	<0.0050	0.19	0.26	0.050	<0.0050	<0.0050	<0.0050
Acridine	0.01	mg/kg	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	0.004	mg/kg	-	2.5[3]	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0095	<0.0040	0.0085	<0.0040
Fluoranthene	0.005	mg/kg	-	50[3]	<0.0050	0.013	0.0088	0.025	0.018	0.019	0.34	<0.0050	<0.0050	<0.0050	<0.0050	0.056	0.014	<0.0050	<0.0050	0.021	<0.0050
Fluorene	0.005	mg/kg	-	15.4[2]	<0.0050	0.022	<0.0050	0.97	0.27	0.28	13	4.9	<0.0050	<0.0050	<0.0050	2.7	3.4	0.59	<0.0050	0.098	<0.0050
Naphthalene	0.005	mg/kg	-	0.6[4]	<0.0050	<0.28	<0.013	**1.6**	0.47	0.46	**88**	**18**	<0.0050	<0.0050	0.040	**0.71**	<0.46	**6.8**	<0.0050	0.41	<0.0050
Perylene	0.005	mg/kg	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Phenanthrene	0.005	mg/kg	-	5[5]	<0.0050	<0.023	0.024	1.3	0.18	0.18	**9.5**	1.9	<0.0050	<0.0050	<0.0050	4.0	4.8	0.24	<0.0050	0.087	<0.0050
Pyrene	0.005	mg/kg	-	10[5]	<0.0050	0.013	0.0091	0.069	0.072	0.075	0.31	0.0089	<0.0050	<0.0050	0.048	0.056	0.029	<0.0050	<0.0050	0.011	<0.0050
Quinoline	0.01	mg/kg	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<1.0	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.0050	<0.010	<0.010	<0.010
Carcinogenic PAHs																					
Benzo[a]anthracene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	<0.0050	0.0082	0.0063	0.0054	0.046	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo[a]pyrene	0.005	mg/kg	1	0.7[4]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.011	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo[b]fluoranthene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.024	<0.0050	<0.0050	<0.0050	<0.0050	0.0078	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo[c]phenanthrene[9]	0.005	mg/kg	0.01	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo[e]pyrene [9]	0.005	mg/kg	0.01	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.017	<0.0050	<0.0050	<0.0050	<0.0050	0.0060	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo[ghi]perylene	0.005	mg/kg	0.01	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo[k]fluoranthene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0095	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chrysene	0.005	mg/kg	0.01	6.2[2]	<0.0050	0.0077	0.0084	0.051	0.0082	0.0078	0.085	<0.0050	<0.0050	<0.0050	<0.0050	0.020	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Indeno[1,2,3-cd]pyrene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dibenz[a,h]anthracene	0.005	mg/kg	1	1[5]	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
BaP TPE[7]			5.3 [8]		N/A	0.006	0.006	0.007	0.007	0.006	0.023	N/A	N/A	N/A	N/A	0.008	N/A	N/A	N/A	N/A	N/A

Notes:
RDL = laboratory's reportable detection limit
mbg = metres below grade
1. CCME Guidelines = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Environmental & Human Health (updated 2010):
Freshwater life and protection of potable water check values are not considered as groundwater and surface water samples have been collected
NOTE: B[a]P TPE should be multiplied by 3 if the source is from coal tar or its derivatives.
2. Based on provisional CCME soil and food ingestion guidelines (SQG_I) for the protection of Environmental Health (CCME, 2010)
3. Based on CCME Soil Contact guidelines (SQG_{SC}) for the protection of Environmental Health (CCME, 2010)
4. Based on CCME provisional SQG_E from CCME 1997 (CCME, 2010)
5. Based on CCME Interim Soil Quality Criteria from CCME 1991 (CCME, 2010)
6. PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme as shown.
7. TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used if concentration below RDL.
8. Based on CCME Direct Contact (ingestion, inhalation and dermal exposures) guidelines for the protection of human health (CCME, 2010); $1x10^{-5}$ incremental lifetime cancer risk.
9. The PEF is based on IPCS. 1998. Environmental Health Criteria 202 - Selected Non-Heterocyclic Polycyclic Aromatic Hydrocarbons. World Health Organization (WHO). International Programme on Chemical Safety
Health Canada. 2009. Federal Contaminated Site Risk Assessment in Canada Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA) – DRAFT. 2009
' -' = no guideline available
Bold & Underlined = parameter exceeds applicable guideline

TABLE G-5

SOIL POLYCYCLIC AROMATIC HYDROCARBON CHEMISTRY
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	RDL	Units	CCME Residential Land Use [1]		Sample ID & depth (mbg)							
					2010 Supplemental Phase III ESA				2008 Phase III ESA			
			B(a)P PEF [6] (Human Health)	Individual PAH Compounds (Ecological Health)	SE BEACH DUMP-1 (0-0.1)	SE BEACH DUMP-2 (0-0.1)	SE BEACH DUMP-3 (0-0.1)	SS10-1 (0-0.3)	R-TP1-SA2	SW-TP1-SA3	WPH-TP1-SA2	FD-TP2-SA3
Non-Carcinognic PAHs			**Date collected:**		**15-Aug-10**	**15-Aug-10**	**15-Aug-10**	**15-Aug-10**	**13-Aug-08**	**13-Aug-08**	**12-Aug-08**	**12-Aug-08**
2-Methylnaphthalene	0.005	mg/kg	-	-	<0.0050	<0.0050	<0.0050	<0.0050	13	3.1	11	0.045
Acenaphthene	0.005	mg/kg	-	21.5[2]	<0.0050	<0.0050	<0.0050	1.8	0.34	1.9	0.26	0.053
Acenaphthylene	0.005	mg/kg	-	-	<0.0050	<0.0050	<0.0050	<0.0050	0.31	0.51	0.23	0.046
Acridine	0.01	mg/kg	-	-	<0.010	<0.010	<0.010	1.2	0.06	0.26	0.06	0.18
Anthracene	0.004	mg/kg	-	2.5[3]	<0.040	<0.040	<0.0040	<0.0040	0.007	0.053	0.024	<0.005
Fluoranthene	0.005	mg/kg	-	50[3]	0.024	<0.0050	0.032	3.8	0.008	<0.005	0.041	0.023
Fluorene	0.005	mg/kg	-	15.4[2]	<0.0050	<0.0050	<0.0050	0.74	0.71	11	0.90	0.031
Naphthalene	0.005	mg/kg	-	0.6[4]	<0.0050	<0.0050	<0.0050	<0.0050	**<u>3.9</u>**	**<u>5.0</u>**	**<u>0.78</u>**	0.085
Perylene	0.005	mg/kg	-	-	<0.0050	<0.0050	<0.0050	0.017	0.012	0.005	0.045	0.042
Phenanthrene	0.005	mg/kg	-	5[5]	0.026	<0.0050	0.015	2.8	0.58	3.0	0.54	0.040
Pyrene	0.005	mg/kg	-	10[5]	0.014	<0.0050	0.025	3.2	<0.005	<0.005	<0.005	<0.005
Quinoline	0.01	mg/kg	-	-	<0.010	<0.010	<0.010	<0.010	0.63	3.2	0.46	0.14
Carcinogenic PAHs												
Benzo[a]anthracene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	0.0061	0.43	<0.005	<0.005	0.0190	<0.005
Benzo[a]pyrene	0.005	mg/kg	1	0.7[4]	<0.0050	<0.0050	0.0083	0.064	<0.005	<0.005	<0.005	<0.005
Benzo[b]fluoranthene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	0.014	0.23	<0.005	<0.005	<0.005	<0.005
Benzo[c]phenanthrene[9]	0.005	mg/kg	0.01	-	<0.0050	<0.0050	<0.0050	0.099	<0.005	<0.005	<0.005	<0.005
Benzo[e]pyrene [9]	0.005	mg/kg	0.01	-	<0.0050	<0.0050	0.0069	0.092	<0.005	<0.005	0.012	<0.005
Benzo[ghi]perylene	0.005	mg/kg	0.01	-	<0.0050	<0.0050	<0.0050	0.024	<0.005	<0.005	<0.005	<0.005
Benzo[k]fluoranthene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	0.0063	0.071	<0.005	<0.005	<0.005	<0.005
Chrysene	0.005	mg/kg	0.01	6.2[2]	0.0074	<0.0050	0.020	0.39	<0.005	<0.005	0.027	0.015
Indeno[1,2,3-cd]pyrene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	<0.0050	0.026	<0.005	<0.005	<0.005	<0.005
Dibenz[a,h]anthracene	0.005	mg/kg	1	1[5]	<0.0050	<0.0050	<0.0050	0.010	<0.005	<0.005	<0.005	<0.005
BaP TPE[7]			5.3 [8]		0.006	N/A	0.014	0.156	N/A	N/A	0.008	0.006

<u>Notes:</u>
RDL = laboratory's reportable detection limit
mbg = metres below grade
1. CCME Guidelines = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Environmental & Human Health (updated 2010):
Freshwater life and protection of potable water check values are not considered as groundwater and surface water samples have been collected
NOTE: B[a]P TPE should be multiplied by 3 if the source is from coal tar or its derivatives.
2. Based on provisional CCME soil and food ingestion guidelines (SQG_I) for the protection of Environmental Health (CCME, 2010)
3. Based on CCME Soil Contact guidelines (SQG_{SC}) for the protection of Environmental Health (CCME, 2010)
4. Based on CCME provisional SQG_E from CCME 1997 (CCME, 2010)
5. Based on CCME Interim Soil Quality Criteria from CCME 1991 (CCME, 2010)
6. PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme as shown.
7. TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used if concentration below RDL.
8. Based on CCME Direct Contact (ingestion, inhalation and dermal exposures) guidelines for the protection of human health (CCME, 2010); $1x10^{-5}$ incremental lifetime cancer risk.
9. The PEF is based on IPCS. 1998. Environmental Health Criteria 202 - Selected Non-Heterocyclic Polycyclic Aromatic Hydrocarbons. World Health Organization (WHO). International Programme on Chemical Safety
Health Canada. 2009. Federal Contaminated Site Risk Assessment in Canada Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA) – DRAFT. 2009
' -' = no guideline available
<u>Bold & Underlined</u> = parameter exceeds applicable guideline

TABLE G-6 **SOIL POLYCHLORINATED BIPHENYLS**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines (based on CCME CSQG for Human Health)	AENV Tier 2 Guidelines (Ecologigal Health)	Sample ID & Depth, Date					
					2010 Supplemental Phase III ESA	2008 Phase III ESA				
					TP3.5-F-2 (0.3-0.6)	R-TP1-SA2 (0.2-0.6)	FD-TP2-SA3 (0.5 - 0.7)	PH-TP1-SA1	WPH-TP1-SA2 (0.3-0.5)	SW-TP1-SA2
					11-Aug-10	14-Aug-08	12-Aug-08	12-Aug-08	12-Aug-08	13-Aug-08
Aroclor 1262	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1016	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1221	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1232	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1242	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1248	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1254	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1260	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aroclor 1268	mg/kg	0.01	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total PCBs	mg/kg	0.01	1.3*	22	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Notes:

RDL = Laboratory reportable detection limit
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009) derived from CCME CSQG
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
* = SQG_E based on the soil and food ingestion guideline for the protection of tertiary consumers
AENV Tier 2 Guidelines = Alberta Environment Tier 2 Guidelines for residential land use, coarse-grained soil, eco soil contact pathway, 2009
mbg = Metres below grade
mg/kg = Milligrams per kilogram
Bold & Underlined = parameter exceeds applicable guideline

TABLE G-7 **GROUNDWATER/MELTWATER PETROLEUM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Date Sampled	BTEX Parameters (mg/L)				Petroleum Hydrocarbons (mg/L)			
		Benzene	Toluene	Ethylbenzene	Xylenes	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34
2010 Supplemental Phase III ESA									
MW1	16-Aug-10	<0.0002	0.0002	<0.0002	<0.0004	<0.1	<0.1	-	-
MW3	16-Aug-10	<0.0002	0.0004	<0.0002	<0.0004	<0.1	-	-	-
MW5	16-Aug-10	<0.0002	0.0012	<0.0002	<0.0004	<0.1	-	-	-
MW7	16-Aug-10	<0.0002	0.0003	<0.0002	<0.0004	<0.1	<0.1	-	-
MW11	16-Aug-10	<0.0002	<0.0002	<0.0002	<0.0004	<0.1	-	-	-
MW12	16-Aug-10	<0.0002	0.0002	<0.0002	<0.0004	<0.1	-	-	-
MW13	16-Aug-10	<0.0002	<0.0002	<0.0002	<0.0004	<0.1	<0.1	-	-
	Lab-Dup	<0.0002	<0.0002	<0.0002	<0.0004	<0.1	-	-	-
MW14	16-Aug-10	<0.0002	0.0004	<0.0002	<0.0004	<0.1	<0.1	-	-
WS-10-1*	15-Aug-10	<0.0002	0.002	0.0009	0.013	0.17	0.74	-	-
	Lab-Dup	<0.0002	0.0019	0.0009	0.012	0.19	-	-	-
2008 Phase III ESA									
R-TP1	14-Aug-08	<0.0004	<0.0004	<0.0004	0.12	1.1	**33**	2.5	<0.1
FD-TP3	12-Aug-08	<0.0004	<0.0004	<0.0004	<0.0008	<0.1	**7.6**	6.5	<0.1
SW-TP1	13-Aug-08	0.0026	**0.025**	**0.0095**	0.095	**2.9**	**93**	11	0.3
WPH-TP1	12-Aug-08	<0.0004	<0.0004	<0.0004	0.27	0.36	**16**	59	7.3
RDL		0.0002	0.0002	0.0002	0.0004	0.1	0.1	0.1	0.1
AENV Guidelines (mg/L)	Potable	N/A			n/a	2.2	1.1	-	-
	Eco Soil Contact				31	7.1	1.8	-	-
	Aquatic Life				18	9.8	1.3	-	-
GCDWQs (mg/L)		0.005	0.024	0.0024	0.3	-	-	-	-
CCME CWQG (mg/L)	Freshwater	0.370	0.002	0.090	-		-	-	-
	Marine	0.11	0.215	0.025	-	-	-	-	-

Notes:

RDL = Laboratory reportable detection limit
CCME CWQG = Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Aquatic Life
AENV Guidelines = Alberta Environment Tier 2 Guidelines for residential land use and coarse-grained soil, 2009 shown for parameters that do not have CCME guidelines (xylenes and petroleum hydrocarbon fractions F1 and F2)
Potable = exposure pathway for protection of groundwater for potable drinking water
Eco Soil Contact = exposure pathway for protection of terrestrial plants and soil invertebrates in areas with shallow groundwater
Aquatic Life = exposure pathway for protection of groundwater discharging to a surface water body hosting aquatic life
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
BTEX = Benzene, toluene, ethylbenzene and xylenes
mg/L = Milligrams per litre
* = water sample collected while excavating an area of buried burnt debris at same location as surface soil sample SS-10
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard

TABLE G-8 **GROUNDWATER/MELTWATER DISSOLVED/TOTAL METALS CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date							
						2010 Supplemental Phase III ESA Groundwater					2008 Phase III ESA Meltwater		
						MW1	MW7	MW11	MW13	MW14	R-TP1	SW-TP1	WPH-TP1
			MAL	FWAL		16-Aug-10	16-Aug-10	16-Aug-10	16-Aug-10	16-Aug-10	14-Aug-08	13-Aug-08	12-Aug-08
Dissolved Aluminum	ug/L	5	-	100*	-	-	**300**	-	15	-	**3500**	**62000**	**3500**
Total Aluminum		50				**5500**	-	**19000**	-	**70000**	**190000**	**160000**	**57000**
Dissolved Antimony	ug/L	0.5	-	-	6	-	<0.5	-	<0.5	-	<0.2	<4	1.5
Total Antimony		5				<5	-	<0.5	-	<5	**10**	<0.2	1.7
Dissolved Arsenic	ug/L	1	12.5	5	10	-	<1	-	1	-	2	**110**	**21**
Total Arsenic		10				<50	-	3	-	**12**	**37**	**130**	**59**
Dissolved Barium	ug/L	5	-	-	1000	-	78	-	180	-	140	900	50
Total Barium		50				96	-	310	-	560	990	830	400
Dissolved Beryllium	ug/L	0.5	-	-	-	-	<0.5	-	<0.5	-	<1	<20	<1
Total Beryllium		5				<5	-	<0.5	-	<5	6	<10	<1
Dissolved Boron	ug/L	10	-		5000	-	150	-	400	-	20	200	50
Total Boron		100				2400	-	420	-	<100	90	220	60
Dissolved Cadmium	ug/L	0.1	120	17**	5	-	0.7	-	0.2	-	**20**	**830**	**190**
Total Cadmium		1				2	-	0.1	-	<1	**340**	**1500**	**1100**
Dissolved Chromium	ug/L	5	56	8.9	50	-	<5	-	**12**	-	7	**150**	5
Total Chromium		50				<50	-	**37**	-	**110**	**440**	**410**	**71**
Dissolved Cobalt	ug/L	0.5	-	-	-	-	1.3	-	5.9	-	5.9	24	2.2
Total Cobalt		5				16	-	12	-	56	170	89	20
Dissolved Copper	ug/L	1	-	2**	1000	-	**58**	-	**42**	-	**14**	**330**	**21**
Total Copper		10				**110**	-	**150**	-	**220**	**210**	**850**	**190**
Dissolved Iron	ug/L	100	-	300	300	-	170	-	**26000**	-	**10000**	**120000**	**2200**
Total Iron		1000				**13000**	-	**26000**	-	**290000**	**340000**	**260000**	**60000**
Dissolved Lead	ug/L	0.5	-	1**	10	-	**4.8**	-	<0.5	-	**2.6**	**260**	**4.4**
Total Lead		5				**8**	-	**13**	-	**78**	**92**	**410**	**200**
Dissolved Lithium	ug/L	5	-	-	-	-	7	-	16	-	<20	70	<20
Total Lithium		50				93	-	23	-	63	260	180	40
Dissolved Manganese	ug/L	2	-	-	50	-	**580**	-	**820**	-	**570**	**1100**	**230**
Total Manganese		20				**390**	-	**1100**	-	**3500**	**4500**	**3000**	**810**
Dissolved Molybdenum	ug/L	1	-	73	-	-	<1	-	3	-	1	22	23
Total Molybdenum		10				36	-	4	-	<10	3.3	55	43
Dissolved Nickel	ug/L	1	-	25**	-	-	11	-	18	-	8.2	**120**	**7.4**
Total Nickel		10				**49**	-	**33**	-	**120**	**270**	**230**	**42**
Dissolved Selenium	ug/L	2	-	1	10	-	<2	-	<2	-	<1	<20	<1
Total Selenium		20				<20	-	<2	-	<20	**4**	**20**	**3**

Notes:

RDL = Laboratory reportable detection limit
- = No guideline / standard available
CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
* = CCME FWAL Guideline for Aluminum provide a range of values based on pH. Nunami Stantec has applied the most stringent of the values provided.
** = CCME FWAL Guideline for Cadmium, Copper, Lead and Nickel provide a range of values based on Hardness. Nunami Stantec has applied the most stringent of the values provided.

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date							
						2010 Supplemental Phase III ESA Groundwater					2008 Phase III ESA Meltwater		
						MW1	MW7	MW11	MW13	MW14	R-TP1	SW-TP1	WPH-TP1
			MAL	FWAL		16-Aug-10	16-Aug-10	16-Aug-10	16-Aug-10	16-Aug-10	14-Aug-08	13-Aug-08	12-Aug-08
Dissolved Silicon	ug/L	50	-	-	-	-	5500	-	7800	-	44000	260000	15000
Total Silicon		500				12000	-	35000	-	7200	130000	180000	51000
Dissolved Silver	ug/L	0.1	-	-	-	-	0.1	-	<0.1	-	<0.1	<2	<0.1
Total Silver		1				<1	-	0.3	-	3	0.2	<1	<0.1
Dissolved Strontium	ug/L	1	-	-	-	-	190	-	350	-	60	450	40
Total Strontium		10				3200	-	60	-	810	200	400	100
Dissolved Thallium	ug/L	0.05	-	0.8	-	-	<0.05	-	<0.05	-	<0.2	**<4**	<0.2
Total Thallium		0.5				<0.5	-	0.59	-	**1.7**	**6.7**	**4**	**1**
Dissolved Tin	ug/L	1	-	-	-	-	<1	-	<1	-	<1	<20	<1
Total Tin		10				<10	-	2	-	<10	8	<10	2
Dissolved Titanium	ug/L	5	-	-	-	-	<5	-	<5	-	490	4000	92
Total Titanium		50				1100	-	2300	-	6800	35000	38000	4200
Dissolved Uranium	ug/L	0.1	-	-	20	-	0.2	-	4.5	-	0.4	**40**	1.8
Total Uranium		1				5	-	1.7	-	18	11	**49**	10
Dissolved Vanadium	ug/L	1	-	-	-	-	<1	-	<1	-	10	1300	23
Total Vanadium		50				<50	-	46	-	370	860	1600	140
Dissolved Zinc	ug/L	5	-	30	5000	-	**320**	-	**70**	-	17	<60	23
Total Zinc		50				**200**	-	**200**	-	**320**	**1100**	**470**	**250**

Notes:

RDL = Laboratory reportable detection limit

- = No guideline / standard available

CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)

CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria

CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria

GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008

Green = Most stringent guideline

Bold & Underlined = Exceeds the most stringent guideline

* = CCME FWAL Guideline for Aluminum provide a range of values based on pH. Nunami Stantec has applied the most stringent of the values provided.

** = CCME FWAL Guideline for Cadmium, Copper, Lead and Nickel provide a range of values based on Hardness. Nunami Stantec has applied the most stringent of the values provided.

TABLE G-9 **SURFACE WATER PETROLUEM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Date Sampled	BTEX Parameters (ug/L)				Petroleum Hydrocarbons (ug/L)	
		Benzene	Toluene	Ethylbenzene	Xylenes	F1 C6-C10	F2 >C10-C16
CW-BG	13-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
CW-1	12-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
CW-2	12-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
CW-3	12-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
CW-4	13-Aug-10	<0.2	0.9	0.7	5.8	<100	<100
CW-5	17-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
	Lab-Dup	<0.2	<0.2	<0.2	<0.4	<100	-
SW-DUMP	17-Aug-10	<0.2	0.3	<0.2	<0.4	<100	<100
RDL		0.2	0.2	0.2	0.4	100	100
AENV Guidelines (ug/L)	Potable	N/A			n/a	2200	1100
	Eco Soil Contact				31000	7100	1800
	Aquatic Life				18000	9800	1300
CDWQGs (ug/L)		5	24	2.4	300	-	-
CCME CWQG (ug/L)	Freshwater	370	2	90	-		-
	Marine	110	215	25	-	-	-

Notes:

RDL = Laboratory reportable detection limit
CCME CWQG = Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Aquatic Life
AENV Guidelines = Alberta Environment Tier 2 Guidelines for residential land use and coarse-grained soil, 2009 shown for parameters that do not have CCME guidelines (petroleum hydrocarbon fractions F1 and F2)
Potable = exposure pathway for protection of groundwater for potable drinking water
Eco Soil Contact = exposure pathway for protection of terrestrial plants and soil invertebrates in areas with shallow groundwater
Aquatic Life = exposure pathway for protection of groundwater discharging to a surface water body hosting aquatic life
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
BTEX = Benzene, toluene, ethylbenzene and xylenes
mg/L = Milligrams per litre
Green = Most stringent guideline
Blue = Background sample
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard

TABLE G-10 SURFACE WATER TOTAL METALS CHEMISTRY
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date									
						2010 Supplemental Phase III ESA									2008 Phase III ESA
						CW-BG	CW-1	CW-2		CW-3	CW-4	CW-5		SW-DUMP	OT-BKG-02
			MAL	FWAL		13-Aug-10	12-Aug-10	12-Aug-10	Lab-Dup	12-Aug-10	13-Aug-10	17-Aug-10	Lab-Dup	17-Aug-10	14-Aug-08
Aluminum	ug/L	5	-	100*	-	32	38	97	77	73	**27000**	90	91	**16000**	**110**
Antimony	ug/L	0.5	-	-	6	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	**29**	<0.2
Arsenic	ug/L	1	12.5	5	10	<1	<1	<1	<1	<1	**28**	<1	<1	**6**	<1
Barium	ug/L	5	-	-	1000	6	7	10	10	9	140	9	9	140	<10
Beryllium	ug/L	0.5	-		-	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<0.5	<0.5	<1
Boron	ug/L	10	-		5000	<10	11	19	17	<10	640	<10	<10	47	<20
Cadmium	ug/L	0.1	120	17**	5	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	2.6	<1
Chromium	ug/L	5	56	8.9	50	<5	<5	<5	<5	<5	<50	<5	<5	**30**	<1
Cobalt	ug/L	0.5	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	16	<0.5	<0.5	9.8	<0.3
Copper	ug/L	1	-	2**	1000	<1	1	**6**	2	**3**	**420**	1	1	**170**	0.7
Iron	ug/L	100	-	300	300	<100	<100	190	180	<100	**21000**	<100	<100	**53000**	90
Lead	ug/L	0.5	-	1**	10	<0.5	<0.5	<0.5	<0.5	<0.5	**83**	<0.5	<0.5	**830**	<0.2
Manganese	ug/L	2	-	-	50	<2	<2	15	15	4	**350**	3	3	**560**	<4
Molybdenum	ug/L	1	-	73	-	<1	<1	<1	<1	<1	31	<1	<1	6	<0.2
Nickel	ug/L	1	-	25**	-	<1	<1	<1	2	1	**65**	<1	<1	**41**	1
Selenium	ug/L	2	-	1	10	<2	<2	<2	<2	<2	<20	<2	<2	<2	<0.1
Silicon	ug/L	50	-	-	-	970	790	2300	2200	1300	39000	1800	1800	27000	1000
Silver	ug/L	0.1	-	-	-	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	0.7	<0.1
Strontium	ug/L	1	-	-	-	16	26	60	57	66	140	36	36	89	<20
Thallium	ug/L	0.05	-	0.8	-	<0.05	<0.05	<0.05	<0.05	<0.05	**1.1**	<0.05	<0.05	0.34	<0.2
Titanium	ug/L	5	-	-	-	<5	<5	6	<5	<5	2000	6	6	1700	13
Uranium	ug/L	0.1	-	-	20	<0.1	<0.1	<0.1	<0.1	<0.1	**26**	<0.1	<0.1	1.3	<0.1
Vanadium	ug/L	1	-	-	-	<1	<1	<1	<1	<1	130	<1	<1	62	<1
Zinc	ug/L	5	-	30	5000	<5	<5	6	7	19	**96**	<5	<5	**460**	**41**

Notes:

RDL = Laboratory reportable detection limit
- = No guideline / standard available
CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
Green = Most stringent guideline
Blue = Background sample
& Underlined = Exceeds the most stringent guideline
* = CCME FWAL Guideline for Aluminum provide a range of values based on pH. Nunami Stantec has applied the most stringent of the values provided.
** = CCME FWAL Guideline for Cadmium, Copper, Lead and Nickel provide a range of values based on Hardness. Nunami Stantec has applied the most stringent of the values provided.

TABLE G-11 **SURFACE WATER GENERAL CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date									
			MAL	FWAL		CW-BG		CW-1		CW-2		CW-3	CW-4	CW-5	
						13-Aug-10	Lab-Dup	12-Aug-10	Lab-Dup	12-Aug-10	Lab-Dup	12-Aug-10	13-Aug-10	17-Aug-10	Lab-Dup
Bicarbonate (as CaCO3)	mg/L	1	-	-	-	2	-	4	-	10	-	15	480	5	-
TDS (Calculated)	mg/L	1	-	-	500	32	-	51	-	102	-	86	**1210**	66	-
Carbonate (as CaCO3)	mg/L	1	-	-	-	<1	-	<1	-	<1	-	<1	196	<1	-
Hardness (as CaCO3)	mg/L	1	-	-	-	12	-	20	-	43	-	40	47	28	-
Langlier Index @ 20C	-	N/A	-	-	-	-4.51	-	-3.97	-	-3.05	-	-2.53	1.83	-2.89	-
Langlier Index @ 4C	-	N/A	-	-	-	-4.76	-	-4.23	-	-3.3	-	-2.78	1.58	-3.14	-
Saturation pH @ 20C	-	N/A	-	-	-	10.7	-	10.2	-	9.59	-	9.26	7.81	9.99	-
Saturation pH @ 4C	-	N/A	-	-	-	11	-	10.5	-	9.84	-	9.51	8.06	10.2	-
Total Ammonia (as N)	mg/L	0.05	-	0.152	-	<0.05	-	<0.05	-	<0.05	<0.05	<0.05	**0.87**	<0.05	-
Color	TCU	2	-	-	15	6	6	-	-	-	-	-	**1100**	9	-
Conductivity	umho/cm	1	-	-	-	68	-	113	-	229	-	191	2060	140	-
Total Organic Carbon	mg/L	0.2	-	-	-	1.7	-	1.7	-	5	-	5.3	148	2.7	-
Ortho Phosphate (as P)	mg/L	0.01	-	-	-	<0.01	-	<0.01	-	<0.01	<0.01	<0.01	0.9	<0.01	-
pH	-	N/A	7.0 - 8.7	6.5 - 9	6.5 - 8.5	**6.2**	-	**6.3**	-	**6.5**	-	**6.7**	**9.6**	7.1	-
Total Phosphorus	mg/L	0.1	-	-	-	<0.002	-	<0.002	-	0.012	-	0.014	3.4	0.003	-
Dissolved Sulphate	mg/L	1	-	-	500	1	-	5	-	8	7	2	58	4	-
Turbidity	NTU	0.1	<1000	<1000	-	0.3	-	0.6	-	0.5	-	0.9	230	0.8	-
Total Alkalinity (as CaCO3)	mg/L	1	-	-	-	2	-	4	-	10	-	15	678	5	-
Dissolved Chloride	mg/L	1	-	-	250	17	-	26	-	48	48	41	180	33	-
Nitrite (as N)	mg/L	0.01	-	0.06	-	<0.01	-	<0.01	<0.01	<0.01	-	<0.01	<0.1	<0.01	-
Nitrate (as N)	mg/L	0.1	3.6	2.9	45	<0.1	-	<0.1	<0.1	<0.1	-	<0.1	<1	<0.1	-
Reactive Silica	mg/L	0.05	-	-	-	2.2	-	1.8	-	4.8	-	2.7	19	3.6	3.3
Dissolved Calcium	mg/L	0.05	-	-	-	1.84	-	3.23	-	5.62	-	7.88	8.6	4.49	4.46
Total Calcium	mg/L	0.2				2		3.5	-	6.3	5.9	8.1	18	4.5	4.5
Dissolved Magnesium	mg/L	0.05	-	-	-	1.73	-	2.78	-	6.96	-	5.02	6.3	3.99	3.99
Total Magnesium	mg/L	0.05				1.7		2.6	-	7.3	7	4.7	14	4.5	4.5
Dissolved Potassium	mg/L	1	-	-	-	<1	-	<1	-	1	-	1	15	<1	<1
Total Potassium	mg/L	0.2				0.41		0.86	-	1.4	1.3	0.57	15	1	1
Dissolved Sodium	mg/L	0.5	-	-	200	6.5	-	10.8	-	22	-	16.7	**445**	12.9	12.9
Total Sodium	mg/L	0.1				6.5		10	-	23	22	16	**650**	14	14

Notes:

RDL = Laboratory reportable detection limit
- = No guideline / standard available
CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
Green = Most stringent guideline
Blue = Background sample
Bold & Underlined = Exceeds the most stringent guideline

TABLE G-12 **SURFACE WATER POLYCYCLIC AROMATIC HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date				
						CW-BG	CW-1	CW-2	CW-3	CW-4
			MAL	FWAL		13-Aug-10	12-Aug-10	12-Aug-10	12-Aug-12	13-Aug-10
Acenaphthene	µg/L	0.1	-	5.8	-	<0.10	<0.10	<0.10	<0.10	<0.25
Acenaphthylene	µg/L	0.1	-	-	-	<0.10	<0.10	<0.10	<0.10	<0.25
Acridine	µg/L	0.2	-	4.4	-	<0.20	<0.20	<0.20	<0.20	<0.50
Anthracene	µg/L	0.01	-	0.012	-	<0.010	<0.010	<0.010	<0.010	<0.025
Benz[a]anthracene	µg/L	0.0085	-	0.018	-	<0.0085	<0.0085	<0.0085	<0.0085	<0.021
Benzo[b]fluoranthene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	<0.0085	<0.0085	0.029
Benzo[k]fluoranthene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	<0.0085	<0.0085	<0.021
Benzo[ghi]perylene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	<0.0085	<0.0085	<0.021
Benzo[c]phenanthrene	µg/L	0.05	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.13
Benzo[a]pyrene	µg/L	0.0075	-	0.015	0.01	<0.0075	<0.0075	<0.0075	<0.0075	<0.019
Benzo[e]pyrene	µg/L	0.05	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.13
Chrysene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	<0.0085	<0.0085	0.053
Dibenz[a,h]anthracene	µg/L	0.0075	-	-	-	<0.0075	<0.0075	<0.0075	<0.0075	<0.019
Fluoranthene	µg/L	0.04	-	0.04	-	<0.040	<0.040	<0.040	<0.040	<0.10
Fluorene	µg/L	0.05	-	3	-	<0.050	<0.050	<0.050	<0.050	<0.13
Indeno[1,2,3-cd]pyrene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	<0.0085	<0.0085	<0.021
2-Methylnaphthalene	µg/L	0.1	-	-	-	<0.10	<0.10	<0.10	<0.10	0.62
Naphthalene	µg/L	0.1	1.4	1.1	-	<0.10	<0.10	<0.10	<0.10	**3.6**
Phenanthrene	µg/L	0.05	-	0.4	-	<0.050	<0.050	<0.050	<0.050	<0.13
Perylene	µg/L	0.05	-	-	-	<0.050	<0.050	<0.050	<0.050	<0.13
Pyrene	µg/L	0.02	-	0.025	-	<0.020	<0.020	<0.020	<0.020	**0.083**
Quinoline	µg/L	0.02	-	3.4	-	<0.20	<0.20	<0.20	<0.20	<0.50
B[a]P TPE					0.01	n/a	n/a	n/a	n/a	0.027

Notes:

RDL = Laboratory reportable detection limit
- = No guideline / standard available
CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used if concentration below RDL.
PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme (shown on Table D-6).
Green = Most stringent guideline
Blue = Background sample
Bold & Underlined = Exceeds the most stringent guideline

TABLE G-13 **SEDIMENT PETROLUEM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Date Sampled	BTEX Parameters (mg/kg or ppm)				Petroluem Hydrocarbons (mg/kg or ppm)				
		Benzene	Toluene	Ethylbenzene	Xylenes	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34	Modified TPH
SED-BG	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-1	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
	Lab-Dup	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-2	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-3	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-4	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-5	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-6	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-7	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-8	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	18	<10	<48
SED-9	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	11	<10	<41
SED-10	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
RDL		0.005	0.02	0.01	0.04	10	10	10	10	
Oakridge Guidelines, 1997 (Sediment Quality Guidelines)		0.0570	0.67	3.600	0.025	-	-	-	-	-
Atlantic Eco-RBCA, Draft 2010		-	-	-	-	-	-	-	-	500
CCME SQGs, $SQG_{HH,}$ Soil Ingestion, Residential Land Use		110	22,000	10,000	150,000	-	-	-	-	-
CCME CWS for PHC in Soil for F1/F2/F3/F4, SQG_{HH} Direct Contact, Residential Land Use		-	-	-	-	12,000	6,800	15,000	21,000	-

Notes:

RDL = Laboratory reportable detection limit
Oakridge Guidelines = Suter et al 1996 Toxicological Screening Benchmarks for Sediment and Aquatic Biota Oakridge National Lab
Atlantic Eco-RBCA = Atlantic Eco-Risk Based Corrective Action, Draft 2010
CCME = Canadian Council of Ministers of the Environment
CCME SQGs = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
SQG_{HH} = Soil Quality Guideline for Human Health; Soil Ingestion exposure pathway; $1x10^{5}$ incremental risk for benzene
CCME CWS = Canadian Council of Ministers of the Environment Tier I Canada Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008) for residential land use and coarse-grained soil conditions, Tier 2 Pathway Specific Guidelines
F1/F2/F3/F4 = Equivalent normal straight-chain hydrocarbon boiling point ranges, divided into four fractions
BTEX = Benzene, toluene, ethylbenzene and xylenes
Modified TPH = Total Petroleum Hydrocarbons - BTEX
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = Background sample
Bold & Underlined = Exceeds the most stringent Guideline
- = No applicable guideline/standard

TABLE G-14 **SEDIMENT METALS CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME SQG_{HH}	CCME CSQG (PELs)		Sample ID, Depth (mbg), Sample Date										
						SED-BG	SED-1		SED-2	SED-3	SED-4	SED-5	SED-6	SED-7	SED-8	SED-9	SED-10
				FAL	MAL	12-Aug-10	12-Aug-10	Lab-Dup	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10
Aluminum	mg/kg	50	-	-	-	3300	1600	1600	900	3100	820	930	830	850	2800	4100	6100
Antimony	mg/kg	0.2	20*	-	-	<0.2	<0.2	<0.2	<0.2	0.7	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arsenic	mg/kg	1	12	17	41.6	<1	1	1	<1	1	1	<1	<1	<1	<1	1	<1
Barium	mg/kg	0.5	500*	-	-	16	6.1	5.5	3.3	11	3.9	4.8	4.6	4.4	15	21	46
Beryllium	mg/kg	0.2	4*	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bismuth	mg/kg	1	-	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	-	0.06	1		1	0.21	1	0.27	0.59	0.76	0.12	0.07	0.07
Cadmium	mg/kg	0.1	14	3.5	4.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	mg/kg	1	220	90	160	6	3	4	10	10	2	4	2	6	5	8	14
Hex. Chromium	mg/kg	0.2	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Cobalt	mg/kg	0.1	50*	-	-	2	0.9	0.9	1.2	1.4	0.6	1.9	0.6	0.9	2.3	3.5	6.1
Copper	mg/kg	0.5	1100	197	108	3.8	10	14	4.8	14	3.2	2.6	2.1	0.7	3.1	5.5	8.9
Iron	mg/kg	50	-	-	-	7800	4600	5000	15000	6100	2900	6000	2700	9300	7100	14000	22000
Lead	mg/kg	1	140	91.3	112	3	10	10	10	28	10	3	3	2	7	8	9
Manganese	mg/kg	1	-	-	-	64	34	31	34	66	26	32	24	31	68	150	270
Mercury	mg/kg	0.05	6.6	0.486	0.7	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Molybdenum	mg/kg	0.5	10*	-	-	<0.5	<0.5	<0.5	<0.5	2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Nickel	mg/kg	0.5	-	-	-	3.5	1.5	2	2	3.3	1.2	1.6	1	1.3	2.9	4.6	7.4
Selenium	mg/kg	0.5	80**	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Silver	mg/kg	0.2	20*	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Strontium	mg/kg	1	-	-	-	3	3	4	4	5	2	3	3	3	7	6	6
Thallium	mg/kg	0.05	1***	-	-	0.08	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	0.1	0.25
Tin	mg/kg	5	50*	-	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	17	<5
Uranium	mg/kg	0.05	23**	-	-	0.44	0.35	0.4	0.36	0.43	0.17	0.42	0.22	0.27	0.4	0.48	0.77
Vanadium	mg/kg	5	-	-	-	17	11	12	32	12	6	14	7	21	13	20	39
Zinc	mg/kg	5	-	315	271	14	11	11	7	25	7	6	6	<5	27	25	45

Notes:

RDL = Laboratory reportable detection limit
CCME SQG_{HH} = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Human Health (soil ingestion pathway) (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (1999; last update 2002); Probable Effect Levels (PELs)
FAL = Freshwater Aquatic Life
MAL = Marine Aquatic Life
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = Background sample
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard
orange = Laboratory noted that recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

TABLE G-15 **SEDIMENT POLYCYCLIC AROMATIC HYDROCARBONS CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME SQG B(a)P PEF (Human Health)	CCME CSQG (Individual PAH Compounds [Ecological Health])		Sample ID, Depth (mbg), Sampling Date										
				FAL	MAL	SED-BG	SED-1	SED-2	SED-3	SED-4	SED-5	SED-6	SED-7	SED-8	SED-9	SED-10
						12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10	12-Aug-10
Non-Carcinogenic PAHs																
2-Methylnapthalene	mg/kg	0.005	-	0.201	0.201	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenapthene	mg/kg	0.005	-	0.0889	0.0889	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acenapthylene	mg/kg	0.005	-	0.128	0.128	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Acridine	mg/kg	0.01	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Anthracene	mg/kg	0.004	-	0.245	0.245	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040
Fluroanthene	mg/kg	0.005	-	2.355	1.494	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Fluorene	mg/kg	0.005	-	0.144	0.144	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Napthalene	mg/kg	0.005	-	0.391	0.391	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Perylene	mg/kg	0.005	-	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Phenanthrene	mg/kg	0.005	-	0.515	0.544	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Pyrene	mg/kg	0.005	-	0.875	1.398	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Quinoline	mg/kg	0.01	-	-	-	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Carcinogenic PAHs																
Benzo(a)anthracene	mg/kg	0.005	0.1	0.385	0.693	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(a)pyrene	mg/kg	0.005	1	0.782	0.763	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(b)fluoranthene	mg/kg	0.005	0.1	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(c)phenanthrene	mg/kg	0.005	0.01[a]	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(e)pyrene	mg/kg	0.005	0.01[a]	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(g,h,i)perylene	mg/kg	0.005	0.01	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Benzo(k)fluoranthene	mg/kg	0.005	0.1	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Chrysene	mg/kg	0.005	0.01	0.862	0.846	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Indeno(1,2,3-cd)pyrene	mg/kg	0.005	0.1	-	-	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Dibenz(a,h)anthracene	mg/kg	0.005	1	0.135	0.135	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
BaP TPE			5300*			n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Notes:

RDL = Laboratory reportable detection limit
CCME SQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Human Health (updated 2010)
B(a)P PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme as shown.
a = The PEF is based on IPCS. 1998. Environmental Health Criteria 202 - Selected Non-Heterocyclic Polycyclic Aromatic Hydrocarbons. World Health Organization (WHO). International Programme on Chemical Safety Health Canada. 2009. Federal Contaminated Site Risk Assessmer
TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used if concentration below RDL.
* = Based on CCME Direct Contact (ingestion, inhalation and dermal exposures) guidelines for the protection of human health (CCME, 2010); 1x10-5 incremental lifetime cancer risk.
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (1999; last update 2002); Probable Effect Levels (PELs)
FAL = Freshwater Aquatic Life
MAL = Marine Aquatic Life
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Blue = background sample
Bold & Underlined = parameter exceeds applicable guideline
N/A = Parameter not analyzed
- = No applicable guideline/standard

TABLE G-16 **WASTE BASIC CLASS II LANDFILL PACKAGE CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	Sample ID, Sample Date				
			WASTE-1	WASTE-2	WASTE-3	WASTE-4	
			15-Aug-10	15-Aug-10	15-Aug-10	15-Aug-10	Lab-Dup
Leachable Elements							
Leachable Antimony	mg/L	1	<1	<1	<1	<1	-
Leachable Arsenic	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Leachable Barium	mg/L	1	<1	<1	<1	<1	-
Leachable Beryllium	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Leachable Boron	mg/L	1	<1	<1	<1	<1	-
Leachable Cadmium	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	-
Leachable Chromium	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Leachable Cobalt	mg/L	1	<1	<1	<1	<1	-
Leachable Copper	mg/L	1	<1	15	<1	1	-
Leachable Iron	mg/L	1	<1	1	<1	<1	-
Leachable Lead	mg/L	0.5	<0.5	230	<0.5	<0.5	-
Leachable Mercury	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	-
Leachable Nickel	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Leachable Selenium	mg/L	0.1	<0.1	<0.1	<0.1	<0.1	-
Leachable Silver	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Leachable Thallium	mg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Leachable Uranium	mg/L	0.2	<0.2	<0.2	<0.2	<0.2	-
Leachable Vanadium	mg/L	1	<1	<1	<1	<1	-
Leachable Zinc	mg/L	1	<1	36	<1	1	-
Leachable Zirconium	mg/L	1	<1	<1	<1	<1	-
Leachable BTEX							
Leachable Benzene	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Leachable Toluene	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Leachable Ethylbenzene	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Leachable Total Xylenes	mg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Physical Properties & Soluble Parameters							
Closed Cup Flashpoint	°C	-	>75	>75	>75	>61	-
Free Liquid	-	-	pass	pass	pass	pass	-
Soluble pH	-	-	9.37	7.14	8.15	6.33	-

Notes:

RDL = Laboratory reportable detection limit
mg/L = Milligrams per litre

TABLE G-17 **DRUM CHARACTERIZATION**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	Sample ID, Depth and Date						
			DRUM-01	DRUM-2	DRUM-3	DRUM-4	DRUM-5	DRUM-6	DRUM-7
			17-Aug-10	17-Aug-10	17-Aug-10	17-Aug-10	17-Aug-10	17-Aug-10	17-Aug-10
Polychlorinated Biphenyls (water)									
Aroclor 1016	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1221	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1232	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1242	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1248	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1254	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1260	ug/L	1	-	-	-	<1	<1	<1	<1
Aroclor 1268	ug/L	1	-	-	-	<1	<1	<1	<1
Total PCBs	ug/L	1	-	-	-	<1	<1	<1	<1
Polychlorinated Biphenyls (oil)									
Aroclor 1016	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1221	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1232	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1242	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1248	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1254	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1260	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1262	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Aroclor 1268	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Total PCBs	ug/L	0.05	<0.05	<0.05	<0.05	-	<3	-	-
Misc Organics, Physical Properties, & Elements (water)									
Adsorbable Organic Halogen	mg/L	-	0.005	0.02	0.13	-	0.15	-	-
Closed Cup Flashpoint	°C	-	>100.0	>100.0	>100.0	-	>100.0	-	-
Dissolved Cadmium	mg/L	0.02	<0.02	<0.02	<0.02	-	<0.02	-	-
Dissolved Chromium	mg/L	0.1	<0.1	<0.1	<0.1	-	<0.1	-	-
Dissolved Lead	mg/L	0.02	<0.02	<0.02	<0.02	-	0.02	-	-
Misc Organics, Physical Properties, & Elements (oil)									
Total Organic Halogen	mg/kg	-	-	-	-	<2	-	<2	<2
Ash Content	mass%	-	-	-	-	0.83	-	0.58	1
Closed Cup Flashpoint	°C	-	-	-	-	172	-	162	170
Dissolved Cadmium	mg/kg	1	-	-	-	<1	-	<1	<1
Dissolved Chromium	mg/kg	-	-	-	-	4	-	2	2
Dissolved Lead	mg/kg	-	-	-	-	14	-	16	16

Notes:

RDL = Laboratory reportable detection limit
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009) derived from CCME CSQG
CCME SQG_{HH} = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (1999; last update 2002); Probable Effect Levels (PELs)
FAL = Freshwater Aquatic Life
MAL = Marine Aquatic Life
µg/g = Micrograms per gram
Bold & Underlined = parameter exceeds applicable guideline

TABLE G-18 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SOIL PETROLEUM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Towr
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Sample Depth (mbg)	Date Sampled		BTEX Parameters (mg/kg or ppm)				Petroleum Hydrocarbons (mg/kg or ppm)			
				Benzene	Toluene	Ethylbenzene	Xylenes	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34
TP10-N-2	0.4-0.5	6-Aug-10		<0.005	<0.02	<0.01	0.36	71	**390**	<10	<10
DUPA				<0.005	<0.02	<0.01	0.15	19	**300**	12	<10
Relative Percent Difference				NC	NC	NC	See Note 1	See Note 1	26.1%	See Note 1	NC
TP2.5-P-2	0.3-0.5	7-Aug-10		<0.005	<0.02	0.03	0.5	57	**910**	**380**	<10
DUPB				<0.005	<0.02	0.03	0.48	48	**2,600**	**1,000**	30
Relative Percent Difference				NC	NC	See Note 1	4.1%	See Note 1	**96.3%**	**89.9%**	See Note 1
TP3.5-DE-2	0.35-0.5	11-Aug-10		<0.005	<0.02	<0.01	<0.04	13	**460**	**1,600**	1,100
DUPC				<0.005	<0.02	<0.01	<0.04	14	**850**	**1,900**	1,300
Relative Percent Difference				NC	NC	NC	NC	See Note 1	**59.5%**	17.1%	17%
TP8-H-3	0.5-0.7	12-Aug-10		<0.005	<0.02	<0.01	<0.04	<10	<10	33	16
DUPD				<0.005	<0.02	<0.01	<0.04	<10	<10	63	29
Relative Percent Difference				NC	NC	NC	NC	NC	NC	See Note 1	See Note 1
TP3-E-2	0.3-0.6	11-Aug-10		<0.005	<0.02	<0.01	<0.04	15	**640**	200	23
DUPE				<0.005	<0.02	<0.01	0.06	<10	24	21	<10
Relative Percent Difference				NC	NC	NC	See Note 1	See Note 1	See Note 1	See Note 1	See Note 1
TP5-B-1	0-0.15	11-Aug-10		<0.005	<0.02	<0.01	<0.04	<10	<10	33	<10
DUPF				<0.01	<0.04	<0.02	<0.08	<20	<20	82	<20
Relative Percent Difference				NC	NC	NC	NC	NC	NC	See Note 1	NC
RDL				0.0050	0.020	0.010	0.040	10	10	10	10
CCME SQGs Residential Land Use			SQG_{HH} Soil Ingestion	110	22,000	10,000	150,000	-	-	-	-
			SQG_E Soil Contact	31	75	55	95	-	-	-	-
GN Guidelines (based on CWS for PHC in Soil for F1/F2/F3/F4 Residential Land Use)			SQG_{HH} Direct Contact	-	-	-	-	12,000	6,800	15,000	21,000
			Management	-	-	-	-	700	1,000	2,500	10,000
			SQG_E Soil Contact	-	-	-	-	210	150	300	2,800

Notes:

RDL = Laboratory reportable detection limit
CCME = Canadian Council of Ministers of the Environment
CCME SQG = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
SQG_{HH} = Soil Quality Guideline for Human Health; Soil Ingestion exposure pathway; $1x10^{-5}$ incremental risk for benzene
SQG_E = Soil Quality Guideline for Environmental Health, Soil Contact exposure pathway
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009), Tier 2 Pathway Specific Guidelines
CWS for PHC (Residential) = Canada Wide Standards for Petroleum Hydrocarbons in Soil, 2008 (coarse-grained surface soil at residential sites, Tier 2 Pathway Specific Guidelines
F1/F2/F3/F4 = Equivalent normal straight-chain hydrocarbon boiling point ranges, divided into four fractions
BTEX = Benzene, toluene, ethylbenzene and xylenes
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent Guideline
- = No applicable guideline/standard
1. RPD value not considered applicable because the concentration of parameters is less than 5 times the laboratory RDL
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
Red and Bold = Value exceeds the acceptable 100 % RPD for soil.

TABLE G-19 QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SOIL METALS CHEMISTRY
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	GN Guidelines		Sample ID, Depth (mbg), Sample Date																
			CCME CSQG Human Health (mg/kg) [a]	CCME CSQG Ecological Health (mg/kg) [b]	TP10-N-2	DUPA	Relative Percent Difference	TP5-B-1	DUPF	Relative Percent Difference	TP3.5-KL-2	DUPH	Relative Percent Difference	TP-Dump-4-2	DUPI	Relative Percent Difference	TP4.5-LM-2	DUPJ	Relative Percent Difference	TP6.5-NO-2	DUPK	Relative Percent Difference
					6-Aug-10			11-Aug-10			14-Aug-10			14-Aug-10			14-Aug-10			13-Aug-10		
Aluminum	mg/kg	50	-	-	6,000	6,000	0.0%	8,100	6,300	25.0%	2,100	1,500	33.3%	2,100	9,900	**130.0%**	11,000	12,000	8.7%	14,000	14,000	0.0%
Antimony	mg/kg	0.2	20*		<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	0.2	See Note 1
Arsenic	mg/kg	1	12	17	<1	<1	-	<1	<1	-	1	<1	See Note 1	<1	<1	-	2	1	See Note 1	2	2	See Note 1
Barium	mg/kg	0.5	500*		29	30	3.4%	33	27	20.0%	11	8.1	30.4%	12	40	**107.7%**	47	51	8.2%	64	64	0.0%
Beryllium	mg/kg	0.2	4*		<0.2	<0.2	-	0.2	<0.2	See Note 1	<0.2	<0.2	-	<0.2	0.2	See Note 1	0.3	0.2	See Note 1	0.2	0.2	See Note 1
Bismuth	mg/kg	1	-	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	0.16	0.15	See Note 1	1.2	1.6	28.6%	0.2	0.07	See Note 1	0.29	0.24	See Note 1	0.1	0.23	See Note 1	0.21	0.18	See Note 1
Cadmium	mg/kg	0.1	14	10	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	<0.1	-
Chromium	mg/kg	1	220	64	12	12	0.0%	12	12	0.0%	6	5	18.2%	6	15	85.7%	18	18	0.0%	23	23	0.0%
Hexavalent chromium	mg/kg	0.2	-	0.4***	<0.2	<0.2	-	<2	<2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-
Cobalt	mg/kg	0.1	50*		4.4	4.3	2.3%	4.2	3.5	18.2%	1.3	0.9	36.4%	1.8	7	**118.2%**	6.7	7	4.4%	8.3	8.4	1.2%
Copper	mg/kg	0.5	1100	63	6.3	6.1	3.2%	7.9	6.2	24.1%	1.8	1.8	See Note 1	1.8	9.2	See Note 1	9	9.8	8.5%	10	10	0.0%
Iron	mg/kg	50	-	-	16,000	16,000	0.0%	16,000	14,000	13.3%	7,800	7,500	3.9%	8,500	17,000	66.7%	21,000	23,000	9.1%	27,000	25,000	7.7%
Lead	mg/kg	1	140	300	4	4	See Note 1	6	6	0.0%	2	2	See Note 1	2	5	See Note 1	6	7	15.4%	8	8	0.0%
Manganese	mg/kg	1	-	-	160	150	6.5%	140	120	15.4%	50	36	32.6%	62	240	**117.9%**	260	270	3.8%	310	270	13.8%
Mercury	mg/kg	0.05	6.6	12	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	0.08	See Note 1	0.05	0.07	See Note 1	<0.05	<0.05	-	<0.05	0.06	See Note 1
Molybdenum	mg/kg	0.5	10*		<0.5	<0.5	-	0.5	<0.5	See Note 1	2	2.3	See Note 1	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-
Nickel	mg/kg	0.5	-	50	7	6.6	5.9%	7.5	5.7	27.3%	2.5	1.7	See Note 1	2.5	8.1	**105.7%**	10	11	9.5%	13	13	0.0%
Selenium	mg/kg	0.5	80**	1	<0.5	<0.5	-	<0.5	0.5	See Note 1	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	0.5	See Note 1
Silver	mg/kg	0.2	20*		<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	<0.2	-
Strontium	mg/kg	1	-	-	7	7	0.0%	9	8	11.8%	2	2	See Note 1	3	5	See Note 1	9	10	10.5%	10	9	10.5%
Thallium	mg/kg	0.05	1***	1.4	0.19	0.2	See Note 1	0.19	0.14	See Note 1	0.06	<0.05	See Note 1	0.07	0.24	**109.7%**	0.31	0.31	0.0%	0.39	0.4	2.5%
Tin	mg/kg	5	50*		<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-	<5	<5	-
Uranium	mg/kg	0.05	23**	500	0.76	0.78	2.6%	0.83	0.55	40.6%	0.42	0.41	2.4%	0.39	1	87.8%	0.97	1.1	12.6%	1.1	1.2	8.7%
Vanadium	mg/kg	5	-	130	31	31	0.0%	29	28	3.5%	15	14	See Note 1	16	34	See Note 1	39	39	0.0%	48	48	0.0%
Zinc	mg/kg	5	-	200	27	27	0.0%	28	24	See Note 1	10	9	See Note 1	10	29	See Note 1	40	42	4.9%	49	50	2.0%

Notes:

RDL = Laboratory reportable detection limit
N/A = Parameter not analyzed
GN Guidelines = Government of Nunavut Environmental Guideline for Site Remediation (2009)
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for Residential Land Use, Coarse-grained Soil, Protection of [a] Human Health (soil ingestion pathway)and [b] Environmental (soil contact pathway) (1999; last update 2007)
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
mbg = Metres below grade
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
old & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard
1. RPD value not considered applicable because the concentration of parameters is less than 5 times the laboratory RDL
- = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
Red and Bold = Value exceeds the acceptable 100 % RPD for soil.

TABLE G-20 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SOIL POLYCYCLIC AROMATIC HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	RDL	Units	CCME Residential Land Use [1]		Sample ID, depth, date		
			B(a)P PEF [6] (Human Health)	Individual PAH Compounds (Ecological Health)	TP2.5-P-2 (0.3-0.5) 7-Aug-10	DUP B (0.3-0.5) 7-Aug-10	Relative Percent Difference
Non-Carcinognic PAHs							
1-Methylnaphthalene	0.005	mg/kg	-	-			
2-Methylnaphthalene	0.005	mg/kg	-	-	7.2	11	41.8%
Acenaphthene	0.005	mg/kg	-	21.5[2]	0.43	0.81	61.3%
Acenaphthylene	0.005	mg/kg	-	-	<0.0050	<0.0050	NC
Acridine	0.01	mg/kg	-	-	<0.010	<0.010	NC
Anthracene	0.004	mg/kg	-	2.5[3]	<0.0040	<0.0040	NC
Fluoranthene	0.005	mg/kg	-	50[3]	0.025	0.053	71.8%
Fluorene	0.005	mg/kg	-	15.4[2]	0.97	1.90	64.8%
Naphthalene	0.005	mg/kg	-	0.6[4]	**1.6**	**1.6**	0.0%
Perylene	0.005	mg/kg	-	-	<0.0050	<0.0050	NC
Phenanthrene	0.005	mg/kg	-	5[5]	1.3	2.7	70.0%
Pyrene	0.005	mg/kg	-	10[5]	0.069	0.13	61.3%
Quinoline	0.01	mg/kg			<0.010	<0.010	NC
Carcinogenic PAHs							
Benzo[a]anthracene	0.005	mg/kg	0.1	1[5]	0.0082	0.018	See Note 10
Benzo[a]pyrene	0.005	mg/kg	1	0.7[4]	<0.0050	<0.0050	NC
Benzo[b]fluoranthene	0.005	mg/kg	0.1	1[5]	<0.0050	0.0064	See Note 10
Benzo[c]phenanthrene[9]	0.005	mg/kg	0.01	-	<0.0050	<0.0050	NC
Benzo[e]pyrene [9]	0.005	mg/kg	0.01	-	<0.0050	0.0069	See Note 10
Benzo[ghi]perylene	0.005	mg/kg	0.01	-	<0.0050	<0.0050	NC
Benzo[k]fluoranthene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	NC
Chrysene	0.005	mg/kg	0.01	6.2[2]	0.051	0.10	64.9%
Indeno[1,2,3-cd]pyrene	0.005	mg/kg	0.1	1[5]	<0.0050	<0.0050	NC
Dibenz[a,h]anthracene	0.005	mg/kg	1	1[5]	<0.0050	<0.0050	NC
BaP TPE[7]			5.3 [8]		0.007	0.009	See Note 11

Notes:
RDL = laboratory's reportable detection limit
mbg = metres below grade
1. CCME Guidelines = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Environmental & Human Health (updated 2010): Freshwater life and protection of potable water check values are not considered as groundwater and surface water samples have been collected
NOTE: B[a]P TPE should be multiplied by 3 if the source is from coal tar or its derivatives.
2. Based on provisional CCME soil and food ingestion guidelines (SQG$_I$) for the protection of Environmental Health (CCME, 2010)
3. Based on CCME Soil Contact guidelines (SQG$_{SC}$) for the protection of Environmental Health (CCME, 2010)
4. Based on CCME provisional SQG$_E$ from CCME 1997 (CCME, 2010)
5. Based on CCME Interim Soil Quality Criteria from CCME 1991 (CCME, 2010)
6. PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme as shown.
7. TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used if concentration below RDL.
8. Based on CCME Direct Contact (ingestion, inhalation and dermal exposures) guidelines for the protection of human health (CCME, 2010); 1x10^{-5} incremental lifetime cancer risk.
9. The PEF is based on IPCS. 1998. Environmental Health Criteria 202 - Selected Non-Heterocyclic Polycyclic Aromatic Hydrocarbons. World Health Organization (WHO). International Programme on Chemical Safety
Health Canada. 2009. Federal Contaminated Site Risk Assessment in Canada Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA) – DRAFT. 2009
' -' = no guideline available
Bold & Underlined = parameter exceeds applicable guideline
10. RPD Value not considered applicable because the concentration of parameters is less than 5 times the reportable detection limit
11. Parameter is a calculated value and does not identify laboratory RDL; therefore, the RPD for this paramter could not be determined.
NC = Parameter was below detectable limits in orgininal and/or duplicate analyses; therefore, the relative percent difference cannot be calculated.
Red and Bold = Value exceeds the acceptable 100 % RPD for soil.

TABLE G-21 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SURFACE WATER PETROLEUM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Date Sampled	BTEX Parameters (ug/L)				Petroleum Hydrocarbons (ug/L)	
		Benzene	Toluene	Ethylbenzene	Xylenes	F1 C6-C10	F2 >C10-C16
Field Duplicate							
CW-1	12-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
CW-D	13-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
Relative Percent Difference		NC	NC	NC	NC	NC	NC
Trip Blank							
TBLK-F24W-10-476*	-	-	-	-	-	-	<100
TBLK-F1BW-10-464*	-	<0.2	<0.2	<0.2	<0.4	<100	-
Field Blank							
FB	17-Aug-10	<0.2	<0.2	<0.2	<0.4	<100	<100
RDL		0.2	0.2	0.2	0.4	100	100
AENV Guidelines (ug/L)	Potable	N/A				2200	1100
	Eco Soil Contact					7100	1800
	Aquatic Life					9800	1300
CDWQGs (ug/L)		5	24	2.4	300	-	-
CCME CWQG (ug/L)	Freshwater	370	see BC MOE	90	-		-
	Marine	110	215	25	see BC MOE	-	-
BC MOE (ug/L)		n/a	39	n/a	30	n/a	n/a

Notes:

RDL = Laboratory reportable detection limit
*= trip blank
FB = field blank
CCME CWQG = Canadian Council of Ministers of the Environment Water Quality Guidelines for the Protection of Aquatic Life
AENV Guidelines = Alberta Environment Tier 2 Guidelines for residential land use and coarse-grained soil, 2009 shown for parameters that do not have CCME guidelines (petroleum hydrocarbon fractions F1 and F2)
Potable = exposure pathway for protection of groundwater for potable drinking water
Eco Soil Contact = exposure pathway for protection of terrestrial plants and soil invertebrates in areas with shallow groundwater
Aquatic Life = exposure pathway for protection of groundwater discharging to a surface water body hosting aquatic life
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
BC MOE = British Columbia Ministry of the Environment, Ambient Water Quality Guidelines for Toluene (2000); Ambient Water Quality Guidelines for Xylene (2007)
BTEX = Benzene, toluene, ethylbenzene and xylenes
mg/L = Milligrams per litre
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard
1. RPD value not considered applicable because the concentration of parameters is less than 5 times the laboratory RDL
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
Red and Bold = Value exceeds the acceptable 50 % RPD for water.

TABLE G-22 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SURFACE WATER GENERAL CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date			Relative Percent Difference
						CW-1	CW-D		
			MAL	FWAL		12-Aug-10	13-Aug-10	Lab-Dup	
Bicarbonate (as CaCO3)	mg/L	1	-	-	-	4	5	-	22.2%
TDS (Calculated)	mg/L	1	-	-	500	51	55	-	7.5%
Carbonate (as CaCO3)	mg/L	1	-	-	-	<1	<1	-	NC
Hardness (as CaCO3)	mg/L	1	-	-	-	20	20	-	0.0%
Langlier Index @ 20C	-	N/A	-	-	-	-3.97	-3.53	-	See Note 2
Langlier Index @ 4C	-	N/A	-	-	-	-4.23	-3.78	-	See Note 2
Saturation pH @ 20C	-	N/A	-	-	-	10.2	10.1	-	See Note 2
Saturation pH @ 4C	-	N/A	-	-	-	10.5	10.4	-	See Note 2
Total Ammonia (as N)	mg/L	0.05	-	0.152	-	<0.05	<0.05	-	NC
Color	TCU	2	-	-	15	-	5	-	-
Conductivity	uS/cm	1	-	-	-	113	115	-	1.8%
Total Organic Carbon	mg/L	0.2	-	-	-	1.7	2	-	16.2%
Ortho Phosphate (as P)	mg/L	0.01	-	-	-	<0.01	<0.01	-	-
pH	-	N/A	7.0 - 8.7	6.5 - 9	6.5 - 8.5	6.3	6.6	-	See Note 2
Total Phosphorus	mg/L	0.1	-	-	-	<0.002	<0.002	-	-
Dissolved Sulphate	mg/L	1	-	-	500	5	5	-	0.0%
Turbidity	NTU	0.1	<1000	<1000	-	0.6	0.6	0.6	0.0%
Total Alkalinity (as CaCO3)	mg/L	1	-	-	-	4	5	-	See Note 1
Dissolved Chloride	mg/L	1	-	-	250	26	26	-	0.0%
Nitrite (as N)	mg/L	0.01	-	0.06	-	<0.01	<0.01	-	-
Nitrate (as N)	mg/L	0.1	3.6	2.9	45	<0.1	<0.1	-	-
Reactive Silica	mg/L	0.05	-	-	-	1.8	1.9	-	5.4%
Dissolved Calcium	mg/L	0.05	-	-	-	3.23	3.33	-	3.0%
Total Calcium	mg/L	0.2				3.5	3.4		2.9%
Dissolved Magnesium	mg/L	0.05	-	-	-	2.78	2.89	-	3.9%
Total Magnesium	mg/L	0.05				2.6	2.7		3.8%
Dissolved Potassium	mg/L	1	-	-	-	<1	2	-	See Note 1
Total Potassium	mg/L	0.2				0.86	0.86		See Note 1
Dissolved Sodium	mg/L	0.5	-	-	200	10.8	11.0	-	1.8%
Total Sodium	mg/L	0.1				10	11.0		9.5%

Notes:

RDL = Laboratory reportable detection limit
- = No guideline / standard available
CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
Red and Bold = Value exceeds the acceptable 50 % RPD for water.

1. RPD value not considered applicable because the concentration of parameters is less than 5 times the laboratory RDL
2. Parameter is a calculated value and does not identify laboratory RDL; therefore, the RPD for this paramter could not be determined.

TABLE G-23 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SURFACE WATER TOTAL METALS CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date			
						CW-1	CW-D	Relative Percent Difference	TBLK-M-10-476*
			MAL	FWAL		12-Aug-10	13-Aug-10		
Aluminum	ug/L	5	-	100*	-	38	39	2.6%	11
Antimony	ug/L	0.5	-	-	6	<0.5	<0.5	NC	<0.5
Arsenic	ug/L	1	12.5	5	10	<1	<1	NC	<1
Barium	ug/L	5	-	-	1000	7	6	See Note 1	<5
Beryllium	ug/L	0.5	-		-	<0.5	<0.5	NC	<0.5
Boron	ug/L	10	-		5000	11	10	See Note 1	<10
Cadmium	ug/L	0.1	120	17**	5	<0.1	<0.1	NC	<0.1
Chromium	ug/L	5	56	8.9	50	<5	<5	NC	<5
Cobalt	ug/L	0.5	-	-	-	<0.5	<0.5	NC	<0.5
Copper	ug/L	1	-	2**	1000	1	2	See Note 1	<1
Iron	ug/L	100	-	300	300	<100	<100	NC	<100
Lead	ug/L	0.5	-	1**	10	<0.5	<0.5	NC	<0.5
Manganese	ug/L	2	-	-	50	<2	<2	NC	<2
Molybdenum	ug/L	1	-	73	-	<1	<1	NC	<1
Nickel	ug/L	1	-	25**	-	<1	<1	NC	<1
Selenium	ug/L	2	-	1	10	<2	<2	NC	<2
Silicon	ug/L	50	-	-	-	790	820	3.7%	<50
Silver	ug/L	0.1	-	-	-	<0.1	<0.1	NC	<0.1
Strontium	ug/L	1	-	-	-	26	27	3.8%	<1
Thallium	ug/L	0.05	-	0.8	-	<0.05	<0.05	NC	<0.05
Titanium	ug/L	5	-	-	-	<5	<5	NC	<5
Uranium	ug/L	0.1	-	-	20	<0.1	<0.1	NC	<0.1
Vanadium	ug/L	1	-	-	-	<1	<1	NC	<1
Zinc	ug/L	5	-	30	5000	<5	7	See Note 1	<5

Notes:

RDL = Laboratory reportable detection limit
*= trip blank
- = No guideline / standard available

CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
* = CCME FWAL Guideline for Aluminum provide a range of values based on pH. Nunami Stantec has applied the most stringent of the values provided.
** = CCME FWAL Guideline for Cadmium, Copper, Lead and Nickel provide a range of values based on Hardness. Nunami Stantec has applied the most stringent of the values provided.
1. RPD value not considered applicable because the concentration of parameters is less than 5 times the laboratory RDL
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
Red and Bold = Value exceeds the acceptable 50 % RPD for water.

TABLE G-24 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SURFACE WATER POLYCYCLIC AROMATIC HYDROCARBON CHE**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME CWQG		GCDWQ	Sample ID and Date		Relative Percent Difference
			MAL	FWAL		CW-1 12-Aug-10	CW-D 13-Aug-10	
Acenaphthene	µg/L	0.1	-	5.8	-	<0.10	<0.10	NC
Acenaphthylene	µg/L	0.1	-	-	-	<0.10	<0.10	NC
Acridine	µg/L	0.2	-	4.4	-	<0.20	<0.20	NC
Anthracene	µg/L	0.01	-	0.012	-	<0.010	<0.010	NC
Benz[a]anthracene	µg/L	0.0085	-	0.018	-	<0.0085	<0.0085	NC
Benzo[b]fluoranthene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	NC
Benzo[k]fluoranthene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	NC
Benzo[ghi]perylene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	NC
Benzo[c]phenanthrene	µg/L	0.05	-	-	-	<0.050	<0.050	NC
Benzo[a]pyrene	µg/L	0.0075	-	0.015	0.01	<0.0075	<0.0075	NC
Benzo[e]pyrene	µg/L	0.05	-	-	-	<0.050	<0.050	NC
Chrysene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	NC
Dibenz[a,h]anthracene	µg/L	0.0075	-	-	-	<0.0075	<0.0075	NC
Fluoranthene	µg/L	0.04	-	0.04	-	<0.040	<0.040	NC
Fluorene	µg/L	0.05	-	3	-	<0.050	<0.050	NC
Indeno[1,2,3-cd]pyrene	µg/L	0.0085	-	-	-	<0.0085	<0.0085	NC
2-Methylnaphthalene	µg/L	0.1	-	-	-	<0.10	<0.10	NC
Naphthalene	µg/L	0.1	1.4	1.1	-	<0.10	<0.10	NC
Phenanthrene	µg/L	0.05	-	0.4	-	<0.050	<0.050	NC
Perylene	µg/L	0.05	-	-	-	<0.050	<0.050	NC
Pyrene	µg/L	0.02	-	0.025	-	<0.020	<0.020	NC
Quinoline	µg/L	0.02	-	3.4	-	<0.20	<0.20	NC
B[a]P TPE					0.01	n/a	n/a	See Note 1

Notes:

RDL = Laboratory reportable detection limit
- = No guideline / standard available
CCME CWQG = Canadian Council of Ministers of the Environment Canadian Water Quality Guidelines (1999, updated 2007)
CCME FWAL= CCME CWQG for the Protection of Aquatic Life - Freshwater Criteria
CCME MAL = CCME CWQG for the Protection of Aquatic Life - Marine Criteria
GCDWQ = Guidelines for Canadian Drinking Water Quality, 2008
TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used if concentration below RDL.
PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme (shown on Table 5).
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
1. Parameter is a calculated value and does not identify laboratory RDL; therefore, the RPD for this parameter could not be determined.

TABLE G-25 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SEDIMENT METALS CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME SQG_{HH}	CCME CSQG (PELs)		Sample ID, Sample Date		Relative Percent Difference
						SED-3	SED-D	
				FAL	MAL	12-Aug-10	12-Aug-10	
Aluminum	mg/kg	50	-	-	-	3100	2900	6.7%
Antimony	mg/kg	0.2	20*	-	-	0.7	2.7	See Note 1
Arsenic	mg/kg	1	12	17	41.6	1	2	See Note 1
Barium	mg/kg	0.5	500*	-	-	11	9.1	18.9%
Beryllium	mg/kg	0.2	4*	-	-	<0.2	<0.2	NC
Bismuth	mg/kg	1	-	-	-	<1	<1	NC
Boron (Hot Water Soluble)	mg/kg	0.05	-	-	-	0.21	0.26	See Note 1
Cadmium	mg/kg	0.1	14	3.5	4.2	<0.1	<0.1	NC
Chromium	mg/kg	1	220	90	160	10	4	See Note 1
Hex. Chromium	mg/kg	0.2	-	-	-	<0.2	<0.2	NC
Cobalt	mg/kg	0.1	50*	-	-	1.4	1.3	7.4%
Copper	mg/kg	0.5	1100	197	108	14	18	25.0%
Iron	mg/kg	50	-	-	-	6100	5700	6.8%
Lead	mg/kg	1	140	91.3	112	28	26	7.4%
Manganese	mg/kg	1	-	-	-	66	60	9.5%
Mercury	mg/kg	0.05	6.6	0.486	0.7	<0.05	<0.05	NC
Molybdenum	mg/kg	0.5	10*	-	-	2	<0.5	NC
Nickel	mg/kg	0.5	-	-	-	3.3	2.6	23.7%
Selenium	mg/kg	0.5	80**	-	-	<0.5	<0.5	NC
Silver	mg/kg	0.2	20*	-	-	<0.2	<0.2	NC
Strontium	mg/kg	1	-	-	-	5	4	See Note 1
Thallium	mg/kg	0.05	1***	-	-	<0.05	<0.05	NC
Tin	mg/kg	5	50*	-	-	<5	9	NC
Uranium	mg/kg	0.05	23**	-	-	0.43	0.36	17.7%
Vanadium	mg/kg	5	-	-	-	12	10	See Note 1
Zinc	mg/kg	5	-	315	271	25	26	3.9%

Notes:

RDL = Laboratory reportable detection limit
CCME SQG_{HH} = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Human Health
Soil
* = interim soil quality guideline (CCME 1991)
** = direct contact pathway
*** = provisional SQG
CCME CSQG = Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (1999; last update 2002); Probable Effect Levels (PELs)
FAL = Freshwater Aquatic Life
MAL = Marine Aquatic Life
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent guideline
- = No applicable guideline/standard
1. RPD value not considered applicable because the concentration of parameters is less than 5 times the laboratory RDL
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined
Red and Bold = Value exceeds the acceptable 100 % RPD for sediment.

TABLE G-26 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SEDIMENT PETROLEUM HYDROCARBON CHEMISTRY**
Supplemental Phase III Environmental Site Assessment - Old Town
Clyde River, Nunavut
Nunami Stantec Project No. 123600017

Sample ID	Date Sampled	BTEX Parameters (mg/kg or ppm)				Petroleum Hydrocarbons (mg/kg or ppm)				
		Benzene	Toluene	Ethylbenzene	Xylenes	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34	Modified TPH
SED-3	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	<10	<10	<40
SED-D	**12-Aug-10**	<0.005	<0.02	<0.01	<0.04	<10	<10	18	<10	<48
Relative Percent Difference		NC	NC	NC	NC	NC	NC	NC	NC	NC
RDL		0.005	0.02	0.01	0.04	10	10	10	10	
Oakridge Guidelines, 1997 (Sediment Quality		0.0570	0.67	3.600	0.025	-	-	-	-	-
Atlantic Eco-RBCA, Draft 2010		-	-	-	-	-	-	-	-	500
CCME SQGs, $SQG_{HH,}$ Soil Ingestion, Residential Land Use		110	22,000	10,000	150,000	-	-	-	-	-
CCME CWS for PHC in Soil for F1/F2/F3/F4, SQG_{HH} Direct Contact, Residential Land Use		-	-	-	-	12,000	6,800	15,000	21,000	-

Notes:

RDL = Laboratory reportable detection limit
Oakridge Guidelines = Suter et al 1996 Toxicological Screening Benchmarks for Sediment and Aquatic Biota Oakridge National Lab
Atlantic Eco-RBCA = Atlantic Eco-Risk Based Corrective Action, Draft 2010
CCME = Canadian Council of Ministers of the Environment
CCME SQGs = Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health (1999; last update 2007); Residential land use, Coarse Grained Surface Soil
SQG_{HH} = Soil Quality Guideline for Human Health; Soil Ingestion exposure pathway; $1x10^{-5}$ incremental risk for benzene
CCME CWS = Canadian Council of Ministers of the Environment Tier I Canada Wide Standards for Petroleum Hydrocarbons (PHC) in Soil (2008) for residential land use and coarse-grained soil conditions, Tier 2 Pathway Specific Guidelines
F1/F2/F3/F4 = Equivalent normal straight-chain hydrocarbon boiling point ranges, divided into four fractions
BTEX = Benzene, toluene, ethylbenzene and xylenes
Modified TPH = Total Petroleum Hydrocarbons - BTEX
ppm = Parts per million
mg/kg = Milligrams per kilogram
Green = Most stringent guideline
Bold & Underlined = Exceeds the most stringent Guideline
- = No applicable guideline/standard
NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined

TABLE G-27 **QUALITY ASSURANCE / QUALITY CONTROL PROGRAM - SEDIMENT POLYCYCLIC AROMATIC HYDROCARBONS CHEMIS**

Supplemental Phase III Environmental Site Assessment - Old Town

Clyde River, Nunavut

Nunami Stantec Project No. 123600017

Parameter	Units	RDL	CCME SQG B(a)P PEF (Human Health)	CCME CSQG (Individual PAH Compounds [Ecological Health])		Sample ID, Depth (mbg), Sampling Date		Relative Percent Difference
						SED-3	SED-D	
				FAL	MAL	12-Aug-10	12-Aug-10	
Non-Carcinogenic PAHs								
2-Methylnapthalene	mg/kg	0.005	-	0.201	0.201	<0.0050	<0.0050	NC
Acenapthene	mg/kg	0.005	-	0.0889	0.0889	<0.0050	<0.0050	NC
Acenapthylene	mg/kg	0.005	-	0.128	0.128	<0.0050	<0.0050	NC
Acridine	mg/kg	0.01	-	-	-	<0.010	<0.010	NC
Anthracene	mg/kg	0.004	-	0.245	0.245	<0.0040	<0.0040	NC
Fluroanthene	mg/kg	0.005	-	2.355	1.494	<0.0050	<0.0050	NC
Fluorene	mg/kg	0.005	-	0.144	0.144	<0.0050	<0.0050	NC
Napthalene	mg/kg	0.005	-	0.391	0.391	<0.0050	<0.0050	NC
Perylene	mg/kg	0.005	-	-	-	<0.0050	<0.0050	NC
Phenanthrene	mg/kg	0.005	-	0.515	0.544	<0.0050	<0.0050	NC
Pyrene	mg/kg	0.005	-	0.875	1.398	<0.0050	<0.0050	NC
Quinoline	mg/kg	0.01	-	-	-	<0.010	<0.010	NC
Carcinogenic PAHs								
Benzo(a)anthracene	mg/kg	0.005	0.1	0.385	0.693	<0.0050	<0.0050	NC
Benzo(a)pyrene	mg/kg	0.005	1	0.782	0.763	<0.0050	<0.0050	NC
Benzo(b)fluoranthene	mg/kg	0.005	0.1	-	-	<0.0050	<0.0050	NC
Benzo(c)phenanthrene	mg/kg	0.005	0.01[a]	-	-	<0.0050	<0.0050	NC
Benzo(e)pyrene	mg/kg	0.005	0.01[a]	-	-	<0.0050	<0.0050	NC
Benzo(g,h,i)perylene	mg/kg	0.005	0.01	-	-	<0.0050	<0.0050	NC
Benzo(k)fluoranthene	mg/kg	0.005	0.1	-	-	<0.0050	<0.0050	NC
Chrysene	mg/kg	0.005	0.01	0.862	0.846	<0.0050	<0.0050	NC
Indeno(1,2,3-cd)pyrene	mg/kg	0.005	0.1	-	-	<0.0050	<0.0050	NC
Dibenz(a,h)anthracene	mg/kg	0.005	1	0.135	0.135	<0.0050	<0.0050	NC
BaP TPE			5300*			n/a	n/a	See Note 1

Notes:

RDL = Laboratory reportable detection limit

CCME SQG = Canadian Council of Ministers of the Environment Canadian Soil Quality Guidelines for the Protection of Human Health (updated 2010)

B(a)P PEF = benzo[a]pyrene Potency Equivalence Factor (order of magnitude estimates of carcinogenic potential based on the World Health Organization (WHO/IPCS 1998) scheme as shown.

a = The PEF is based on IPCS. 1998. Environmental Health Criteria 202 - Selected Non-Heterocyclic Polycyclic Aromatic Hydrocarbons. World Health Organization (WHO). International Programme on Chemical Safety Health Canada. 2009. Federal Contaminated Site Risk Assessment i Canada Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA) – DRAFT. 2009

TPE = Total Potency Equivalent = concentrations of individual carcinogenic PAHs mutiplied by the BaP PEF and subsequently summed. 1/2 RDL used concentration below RDL.

* = Based on CCME Direct Contact (ingestion, inhalation and dermal exposures) guidelines for the protection of human health (CCME, 2010); 1x10-5 incremental lifetime cancer risk.

CCME CSQG = Canadian Council of Ministers of the Environment Canadian Sediment Quality Guidelines for the Protection of Aquatic Life (1999; last update 2002); Probable Effect Levels (PELs)

FAL = Freshwater Aquatic Life

MAL = Marine Aquatic Life

µg/kg = Micrograms per kilogram

Bold & Underlined = parameter exceeds applicable guideline

N/A = Parameter not analyzed

- = No applicable guideline/standard

NC = Parameter was below detectable limits in original and/or duplicate analysis, therefore relative percent difference cannot be determined

1. Parameter is a calculated value and does not identify laboratory RDL; therefore, the RPD for this paramter could not be determined.

APPENDIX H

Laboratory Certificates of Analyses

Your Project #: B0B3701

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/09/13

Job/Sample	Analysis Type	Well Name/Sample ID	Sample Point
B075819/ W45662	Certificate of Analysis	MAXXAMANALYTICS	GW8760-01R \ DRUM-01
B075819/ W45663	Certificate of Analysis	MAXXAMANALYTICS	GW8762-01R \ DRUM-3
B075819/ W45664	Certificate of Analysis	MAXXAMANALYTICS	GW8763-01R \ DRUM-4
B075819/ W45665	Certificate of Analysis	MAXXAMANALYTICS	GW8764-01R \ DRUM-5
B075819/ W45666	Certificate of Analysis	MAXXAMANALYTICS	GW8765-01R \ DRUM-6
B075819/ W45667	Certificate of Analysis	MAXXAMANALYTICS	GW8766-01R \ DRUM-7
B075819/ W49871	Certificate of Analysis	MAXXAMANALYTICS	GW8761-01R \ DRUM-2

Encryption Key

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

STEPHANIE EWASIUK,
Email: stephanie.ewasiuk@maxxamanalytics.com
Phone# (780) 378-8580

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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.

Report Distribution

0	Reports(B075819) SUB CONTRACTOR	MAXXAM ANALYTICS INC.	6740 CAMPOBELLO ROAD	MISSISSAUGA,CANADA
0	Reports(B075819) Renata Spena	MAXXAM ANALYTICS INC.	6740 CAMPOBELLO ROAD	MISSISSAUGA,CANADA

Date of Issue 2010/09/13

All analyses are performed according to internal procedures that are based on current published reference methods.

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45662

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8760-01R \ DRUM-01	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery	Interval From:	Interval To:	Elevations (m) KB	Elevations (m) GRD	Well Fluid Status	Well Status Mode

Production Rates Water m3/d	Production Rates Oil m3/d	Production Rates Gas 1000m3/d	Gauge Pressures kPa Source	Gauge Pressures kPa As Received	Temperature °C Source	Temperature °C As Received	Well Status Type	Well Type
						23.0		

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Misc. Organics			
Adsorbable Organic halogen	0.005	mg/L	Coulometric - Titr.
Physical Properties			
Closed Cup Flash point	>100.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45662

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8760-01R \ DRUM-01	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<0.02	mg/L	EPA 200.8
Dissolved Chromium (Cr)	<0.1	mg/L	EPA 200.8
Dissolved Lead (Pb)	<0.02	mg/L	EPA 200.8

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45663

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8762-01R \ DRUM-3	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Misc. Organics			
Adsorbable Organic halogen	0.13	mg/L	Coulometric - Titr.
Physical Properties			
Closed Cup Flash point	>100.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45663

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8762-01R \ DRUM-3	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<0.02	mg/L	EPA 200.8
Dissolved Chromium (Cr)	<0.1	mg/L	EPA 200.8
Dissolved Lead (Pb)	<0.02	mg/L	EPA 200.8

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45664

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8763-01R \ DRUM-4	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval: From: / To:

Elevations (m): KB / GRD

Well Fluid Status	Well Status Mode

Production Rates: Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa: Source / As Received

Temperature °C: Source / As Received = 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	HF,MC3,MH3,MN2

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<1	mg/kg	ASTM D5708A
Dissolved Chromium (Cr)	4	mg/kg	ASTM D5708A
Dissolved Lead (Pb)	14	mg/kg	ASTM D5708A
Misc. Organics			
Total Organic halogen	<2	mg/kg	Coulometric-Titr.
Physical Properties			
Ash Content	0.83	mass%	ASTM D482
Closed Cup Flash point	172.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON OIL LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45665

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8764-01R \ DRUM-5	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Misc. Organics			
Adsorbable Organic halogen	0.15	mg/L	Coulometric - Titr.
Physical Properties			
Closed Cup Flash point	>100.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45665

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8764-01R \ DRUM-5	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<0.02	mg/L	EPA 200.8
Dissolved Chromium (Cr)	<0.1	mg/L	EPA 200.8
Dissolved Lead (Pb)	0.02	mg/L	EPA 200.8

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45666

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8765-01R \ DRUM-6	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	HF,MC3,MH3,MN2

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<1	mg/kg	ASTM D5708A
Dissolved Chromium (Cr)	2	mg/kg	ASTM D5708A
Dissolved Lead (Pb)	16	mg/kg	ASTM D5708A
Misc. Organics			
Total Organic halogen	<2	mg/kg	Coulometric-Titr.
Physical Properties			
Ash Content	0.58	mass%	ASTM D482
Closed Cup Flash point	162.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON OIL LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W45667

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8766-01R \ DRUM-7	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery	Interval From:	Interval To:	Elevations (m) KB	Elevations (m) GRD	Well Fluid Status	Well Status Mode

Production Rates Water m3/d	Production Rates Oil m3/d	Production Rates Gas 1000m3/d	Gauge Pressures kPa Source	Gauge Pressures kPa As Received	Temperature °C Source	Temperature °C As Received	Well Status Type	Well Type
						23.0		

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	HF ,MC3,MH3,MN2

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<1	mg/kg	ASTM D5708A
Dissolved Chromium (Cr)	2	mg/kg	ASTM D5708A
Dissolved Lead (Pb)	16	mg/kg	ASTM D5708A
Misc. Organics			
Total Organic halogen	<2	mg/kg	Coulometric-Titr.
Physical Properties			
Ash Content	1.0	mass%	ASTM D482
Closed Cup Flash point	170.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON OIL LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W49871

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8761-01R \ DRUM-2	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval — From: / To:

Elevations (m) — KB / GRD

Well Fluid Status	Well Status Mode

Production Rates — Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa — Source / As Received

Temperature °C — Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Misc. Organics			
Adsorbable Organic halogen	0.02	mg/L	Coulometric - Titr.
Physical Properties			
Closed Cup Flash point	>100.0	°C	ASTM D93

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

CERTIFICATE OF ANALYSIS

MaxxID	Client ID	Meter Number	Laboratory Number
			B075819:W49871

Operator Name	LSD	Well ID
MAXXAM ANALYTICS INC.		

Well Name	Initials of Sampler	Sampling Company
MAXXAM ANALYTICS	N/A	MAXXAM ANALYTICS

Field or Area	Pool or Zone	Sample Point	Container Identity	Percent Full
		GW8761-01R \ DRUM-2	GLASS BOTTLE	

Test Recovery	Sample Gathering Point	Solution Gas

Test Type	No.	Multiple Recovery

Interval: From: / To:

Elevations (m): KB / GRD

Well Fluid Status	Well Status Mode

Production Rates: Water m3/d / Oil m3/d / Gas 1000m3/d

Gauge Pressures kPa: Source / As Received

Temperature °C: Source / As Received: 23.0

Well Status Type	Well Type

Gas or Condensate Project	Licence No.

Date Sampled Start	Date Sampled End	Date Received	Date Reported	Date Reissued	Analyst
2010/08/17		2010/08/25	2010/09/02	2010/09/13	MN2,TDB,MH3

PARAMETER DESCRIPTION	Result	unit	
Elements			
Dissolved Cadmium (Cd)	<0.02	mg/L	EPA 200.8
Dissolved Chromium (Cr)	<0.1	mg/L	EPA 200.8
Dissolved Lead (Pb)	<0.02	mg/L	EPA 200.8

** Information not supplied by client -- data derived from LSD information

Results relate only to items teste

Remarks:

TEST ON WATER LAYER

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER
Your C.O.C. #: 20063301, 200633-0, 104000

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/19

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0A7205
Received: 2010/08/10, 08:30

Sample Matrix: Soil
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	7	2010/08/16	2010/08/16	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (1)	3	N/A	2010/08/13	BRL SOP-00106	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (1)	4	N/A	2010/08/17	BRL SOP-00106	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	15	2010/08/11	2010/08/13	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	15	2010/08/11	2010/08/12	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	7	2010/08/13	2010/08/13	CAM SOP-00447	EPA 6020
Moisture	16	N/A	2010/08/12	CAM SOP-00445	McKeague 2nd ed 1978

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GT8131	GT8132	GT8133	GT8133	GT8134		
Sampling Date		2010/08/06 10:30	2010/08/06 13:15	2010/08/07 11:30	2010/08/07 11:30	2010/08/07 11:00		
COC Number		200633-0	200633-0	200633-0	200633-0	200633-0		
	Units	**TP3-0-3**	**TP10-0-2**	**TP2-N-3**	**TP2-N-3 Lab-Dup**	**TP3-N-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g					<0.2	0.2	2234478
Moisture	%	15	25	14	13	6	1	2233209

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GT8135	GT8136	GT8137		GT8138		
Sampling Date		2010/08/07 11:05	2010/08/07 10:35	2010/08/07 10:10		2010/08/07 09:40		
COC Number		200633-0	200633-0	200633-0		200633-0		
	Units	**TP3-N-3**	**TP4-N-2**	**TP5-N-3**	**QC Batch**	**TP6-N-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g				2234478	<0.2	0.2	2233801
Moisture	%	8	16	14	2233209	15	1	2233209

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GT8139		GT8155	GT8156		GT8157		
Sampling Date		2010/08/07 09:10		2010/08/06 15:50	2010/08/06 15:50		2010/08/06 15:50		
COC Number		200633-0		104000	104000		104000		
	Units	**TP7-N-2**	**QC Batch**	**TP10-N-2**	**TP10-N-3**	**QC Batch**	**DUPA**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	2234478	<0.2		2233801	<0.2	0.2	2234478
Moisture	%	15	2233209	12	15	2233209	10	1	2233209

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GT8158		GT8159		GT8160		
Sampling Date		2010/08/06 15:40		2010/08/06 15:15		2010/08/06 14:40		
COC Number		104000		104000		104000		
	Units	**TP11-N-3**	**QC Batch**	**TP12-N-2**	**QC Batch**	**TP13-N-1**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g		2234478	<0.2	2233801	<0.2	0.2	2234478
Moisture	%	10	2233209	20	2233209	14	1	2233570

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GT8161		
Sampling Date		2010/08/06 13:45		
COC Number		104000		
	Units	**TP9-N-2**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	11	1	2233209

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GT8134	GT8138	GT8139	GT8155		
Sampling Date		2010/08/07 11:00	2010/08/07 09:40	2010/08/07 09:10	2010/08/06 15:50		
COC Number		200633-0	200633-0	200633-0	104000		
	Units	**TP3-N-2**	**TP6-N-2**	**TP7-N-2**	**TP10-N-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.16	0.19	0.29	0.16	0.05	2235695
Acid Extractable Aluminum (Al)	ug/g	6700	14000	15000	6000	50	2234663
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2234663
Acid Extractable Arsenic (As)	ug/g	<1	1	2	<1	1	2234663
Acid Extractable Barium (Ba)	ug/g	32	63	65	29	0.5	2234663
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.3	0.2	<0.2	0.2	2234663
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2234663
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2234663
Acid Extractable Chromium (Cr)	ug/g	12	22	23	12	1	2234663
Acid Extractable Cobalt (Co)	ug/g	4.7	7.7	8.5	4.4	0.1	2234663
Acid Extractable Copper (Cu)	ug/g	5.1	9.8	14	6.3	0.5	2234663
Acid Extractable Iron (Fe)	ug/g	17000	26000	26000	16000	50	2234663
Acid Extractable Lead (Pb)	ug/g	6	8	19	4	1	2234663
Acid Extractable Manganese (Mn)	ug/g	190	260	290	160	1	2234663
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2234663
Acid Extractable Nickel (Ni)	ug/g	7.2	13	14	7.0	0.5	2234663
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2234663
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2234663
Acid Extractable Thallium (Tl)	ug/g	0.16	0.36	0.42	0.19	0.05	2234663
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2234663
Acid Extractable Uranium (U)	ug/g	0.53	1.0	1.2	0.76	0.05	2234663
Acid Extractable Vanadium (V)	ug/g	31	48	49	31	5	2234663
Acid Extractable Zinc (Zn)	ug/g	31	50	58	27	5	2234663
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	2234663

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GT8157	GT8159	GT8160		
Sampling Date		2010/08/06 15:50	2010/08/06 15:15	2010/08/06 14:40		
COC Number		104000	104000	104000		
	Units	**DUPA**	**TP12-N-2**	**TP13-N-1**	**RDL**	**QC Batch**
Metals						
Hot Water Ext. Boron (B)	ug/g	0.15	0.28	0.16	0.05	2235695
Acid Extractable Aluminum (Al)	ug/g	6000	13000	15000	50	2234663
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	0.2	2234663
Acid Extractable Arsenic (As)	ug/g	<1	1	1	1	2234663
Acid Extractable Barium (Ba)	ug/g	30	54	64	0.5	2234663
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.3	0.4	0.2	2234663
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	1	2234663
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	0.1	2234663
Acid Extractable Chromium (Cr)	ug/g	12	19	22	1	2234663
Acid Extractable Cobalt (Co)	ug/g	4.3	7.2	8.2	0.1	2234663
Acid Extractable Copper (Cu)	ug/g	6.1	11	14	0.5	2234663
Acid Extractable Iron (Fe)	ug/g	16000	24000	25000	50	2234663
Acid Extractable Lead (Pb)	ug/g	4	7	7	1	2234663
Acid Extractable Manganese (Mn)	ug/g	150	220	260	1	2234663
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	0.5	2234663
Acid Extractable Nickel (Ni)	ug/g	6.6	11	13	0.5	2234663
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	0.5	2234663
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	0.2	2234663
Acid Extractable Thallium (Tl)	ug/g	0.20	0.33	0.42	0.05	2234663
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	5	2234663
Acid Extractable Uranium (U)	ug/g	0.78	1.2	1.3	0.05	2234663
Acid Extractable Vanadium (V)	ug/g	31	41	46	5	2234663
Acid Extractable Zinc (Zn)	ug/g	27	40	50	5	2234663
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	0.05	2234663

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GT8131	GT8131	GT8132	GT8133		
Sampling Date		2010/08/06 10:30	2010/08/06 10:30	2010/08/06 13:15	2010/08/07 11:30		
COC Number		200633-0	200633-0	200633-0	200633-0		
	Units	**TP3-0-3**	**TP3-0-3 Lab-Dup**	**TP10-0-2**	**TP2-N-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2232536
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2232536
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2232536
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2232536
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2232536
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2232536
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2232536
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2232536
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10		<10	<10	10	2232524
F3 (C16-C34 Hydrocarbons)	ug/g	39		110	<10	10	2232524
F4 (C34-C50 Hydrocarbons)	ug/g	24		49	<10	10	2232524
Reached Baseline at C50	ug/g	Yes		Yes	Yes		2232524
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	101	102	100	105		2232536
4-Bromofluorobenzene	%	99	98	98	99		2232536
D10-Ethylbenzene	%	120	116	113	118		2232536
D4-1,2-Dichloroethane	%	100	98	98	99		2232536
o-Terphenyl	%	103		106	104		2232524

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

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Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GT8134	GT8135	GT8136	GT8137		
Sampling Date		2010/08/07 11:00	2010/08/07 11:05	2010/08/07 10:35	2010/08/07 10:10		
COC Number		200633-0	200633-0	200633-0	200633-0		
	Units	**TP3-N-2**	**TP3-N-3**	**TP4-N-2**	**TP5-N-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2232536
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2232536
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2232536
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2232536
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2232536
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2232536
F1 (C6-C10)	ug/g	150	240	<10	<10	10	2232536
F1 (C6-C10) - BTEX	ug/g	150	240	<10	<10	10	2232536
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	3700	3000	<10	<10	10	2232524
F3 (C16-C34 Hydrocarbons)	ug/g	360	380	39	48	10	2232524
F4 (C34-C50 Hydrocarbons)	ug/g	29	22	22	22	10	2232524
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2232524
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	91	96	103	100		2232536
4-Bromofluorobenzene	%	107	108	97	99		2232536
D10-Ethylbenzene	%	122	124	113	116		2232536
D4-1,2-Dichloroethane	%	89	91	98	103		2232536
o-Terphenyl	%	103	117	102	102		2232524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GT8138	GT8139	GT8155	GT8156		
Sampling Date		2010/08/07 09:40	2010/08/07 09:10	2010/08/06 15:50	2010/08/06 15:50		
COC Number		200633-0	200633-0	104000	104000		
	Units	**TP6-N-2**	**TP7-N-2**	**TP10-N-2**	**TP10-N-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2232536
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2232536
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2232536
o-Xylene	ug/g	<0.02	<0.02	0.29	<0.02	0.02	2232536
p+m-Xylene	ug/g	<0.04	<0.04	0.07	<0.04	0.04	2232536
Total Xylenes	ug/g	<0.04	<0.04	0.36	<0.04	0.04	2232536
F1 (C6-C10)	ug/g	<10	<10	72	<10	10	2232536
F1 (C6-C10) - BTEX	ug/g	<10	<10	71	<10	10	2232536
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	190	390	<10	10	2232524
F3 (C16-C34 Hydrocarbons)	ug/g	94	80	<10	<10	10	2232524
F4 (C34-C50 Hydrocarbons)	ug/g	53	37	<10	<10	10	2232524
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2232524
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	100	103	103		2232536
4-Bromofluorobenzene	%	97	99	99	97		2232536
D10-Ethylbenzene	%	114	115	117	110		2232536
D4-1,2-Dichloroethane	%	99	97	98	97		2232536
o-Terphenyl	%	105	102	102	98		2232524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GT8157	GT8158	GT8158	GT8159		
Sampling Date		2010/08/06 15:50	2010/08/06 15:40	2010/08/06 15:40	2010/08/06 15:15		
COC Number		104000	104000	104000	104000		
	Units	**DUPA**	**TP11-N-3**	**TP11-N-3 Lab-Dup**	**TP12-N-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005		<0.005	0.005	2232536
Toluene	ug/g	<0.02	<0.02		<0.02	0.02	2232536
Ethylbenzene	ug/g	<0.01	<0.01		<0.01	0.01	2232536
o-Xylene	ug/g	0.15	<0.02		<0.02	0.02	2232536
p+m-Xylene	ug/g	<0.04	<0.04		<0.04	0.04	2232536
Total Xylenes	ug/g	0.15	<0.04		<0.04	0.04	2232536
F1 (C6-C10)	ug/g	19	<10		<10	10	2232536
F1 (C6-C10) - BTEX	ug/g	19	<10		<10	10	2232536
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	300	<10	<10	<10	10	2232524
F3 (C16-C34 Hydrocarbons)	ug/g	12	<10	<10	59	10	2232524
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	32	10	2232524
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2232524
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	107		102		2232536
4-Bromofluorobenzene	%	99	99		99		2232536
D10-Ethylbenzene	%	111	123		114		2232536
D4-1,2-Dichloroethane	%	99	100		98		2232536
o-Terphenyl	%	101	101	103	102		2232524

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GT8161		
Sampling Date		2010/08/06 13:45		
COC Number		104000		
	Units	**TP9-N-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
Benzene	ug/g	<0.005	0.005	2232536
Toluene	ug/g	<0.02	0.02	2232536
Ethylbenzene	ug/g	<0.01	0.01	2232536
o-Xylene	ug/g	<0.02	0.02	2232536
p+m-Xylene	ug/g	<0.04	0.04	2232536
Total Xylenes	ug/g	<0.04	0.04	2232536
F1 (C6-C10)	ug/g	<10	10	2232536
F1 (C6-C10) - BTEX	ug/g	<10	10	2232536
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	2232524
F3 (C16-C34 Hydrocarbons)	ug/g	31	10	2232524
F4 (C34-C50 Hydrocarbons)	ug/g	13	10	2232524
Reached Baseline at C50	ug/g	Yes		2232524
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		2232536
4-Bromofluorobenzene	%	100		2232536
D10-Ethylbenzene	%	127		2232536
D4-1,2-Dichloroethane	%	99		2232536
o-Terphenyl	%	82		2232524

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 #: B0A7205
Report Date: 2010/08/19

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER
Your P.O. #: 16300NR
Sampler Initials: PC

GENERAL COMMENTS

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report

Maxxam Job Number: TB0A7205

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2232524 JJE	Matrix Spike						
	[GT8158-01]	o-Terphenyl	2010/08/12		100	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2010/08/12		85	%	60 - 130
		F3 (C16-C34 Hydrocarbons)	2010/08/12		85	%	60 - 130
		F4 (C34-C50 Hydrocarbons)	2010/08/12		85	%	60 - 130
	Spiked Blank	o-Terphenyl	2010/08/12		99	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2010/08/12		81	%	60 - 130
		F3 (C16-C34 Hydrocarbons)	2010/08/12		81	%	60 - 130
		F4 (C34-C50 Hydrocarbons)	2010/08/12		81	%	60 - 130
	Method Blank	o-Terphenyl	2010/08/12		105	%	30 - 130
		F2 (C10-C16 Hydrocarbons)	2010/08/12	<10		ug/g	
		F3 (C16-C34 Hydrocarbons)	2010/08/12	<10		ug/g	
		F4 (C34-C50 Hydrocarbons)	2010/08/12	<10		ug/g	
	RPD [GT8158-01]	F2 (C10-C16 Hydrocarbons)	2010/08/12	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2010/08/12	NC		%	50
		F4 (C34-C50 Hydrocarbons)	2010/08/12	NC		%	50
2232536 LRA	Matrix Spike						
	[GT8131-01]	1,4-Difluorobenzene	2010/08/13		101	%	60 - 140
		4-Bromofluorobenzene	2010/08/13		98	%	60 - 140
		D10-Ethylbenzene	2010/08/13		118	%	30 - 130
		D4-1,2-Dichloroethane	2010/08/13		97	%	60 - 140
		Benzene	2010/08/13		85	%	60 - 140
		Toluene	2010/08/13		94	%	60 - 140
		Ethylbenzene	2010/08/13		93	%	60 - 140
		o-Xylene	2010/08/13		95	%	60 - 140
		p+m-Xylene	2010/08/13		95	%	60 - 140
		F1 (C6-C10)	2010/08/13		78	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene	2010/08/13		99	%	60 - 140
		4-Bromofluorobenzene	2010/08/13		98	%	60 - 140
		D10-Ethylbenzene	2010/08/13		110	%	30 - 130
		D4-1,2-Dichloroethane	2010/08/13		98	%	60 - 140
		Benzene	2010/08/13		82	%	60 - 140
		Toluene	2010/08/13		85	%	60 - 140
		Ethylbenzene	2010/08/13		90	%	60 - 140
		o-Xylene	2010/08/13		92	%	60 - 140
		p+m-Xylene	2010/08/13		87	%	60 - 140
		F1 (C6-C10)	2010/08/13		77	%	60 - 140
	Method Blank	1,4-Difluorobenzene	2010/08/13		107	%	60 - 140
		4-Bromofluorobenzene	2010/08/13		100	%	60 - 140
		D10-Ethylbenzene	2010/08/13		119	%	30 - 130
		D4-1,2-Dichloroethane	2010/08/13		98	%	60 - 140
		Benzene	2010/08/13	<0.005		ug/g	
		Toluene	2010/08/13	<0.02		ug/g	
		Ethylbenzene	2010/08/13	<0.01		ug/g	
		o-Xylene	2010/08/13	<0.02		ug/g	
		p+m-Xylene	2010/08/13	<0.04		ug/g	
		Total Xylenes	2010/08/13	<0.04		ug/g	
		F1 (C6-C10)	2010/08/13	<10		ug/g	
		F1 (C6-C10) - BTEX	2010/08/13	<10		ug/g	
	RPD [GT8131-01]	Benzene	2010/08/13	NC		%	50
		Toluene	2010/08/13	NC		%	50
		Ethylbenzene	2010/08/13	NC		%	50
		o-Xylene	2010/08/13	NC		%	50
		p+m-Xylene	2010/08/13	NC		%	50
		Total Xylenes	2010/08/13	NC		%	50

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: TB0A7205

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2232536	LRA	RPD [GT8131-01]	F1 (C6-C10)	2010/08/13	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/13	NC		%	50
2233209	DEE	RPD [GT8133-01]	Moisture	2010/08/12	8.4		%	20
2233570	LKA	RPD	Moisture	2010/08/12	1		%	20
2233801	SAC	Matrix Spike	Chromium (VI)	2010/08/13		0 (1)	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/13		94	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/13	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/13	NC		%	25
2234478	SAC	Matrix Spike	Chromium (VI)	2010/08/17		86	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/17		91	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/17	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/17	NC		%	25
2234663	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/13		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/13		84	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/13		99	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/13		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/13		97	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/13		97	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/13		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/13		96	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/13		95	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/13		91	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/13		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/13		95	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/13		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/13		102	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/13		94	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/13		100	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/13		98	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/13		77	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/13		103	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/13		101	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/13		105	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/13		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/13		100	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/13		104	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/13		95	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/13		95	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/13		98	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/13		100	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/13		100	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/13		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/13		93	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/13		93	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/13		93	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/13		105	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/13		99	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/13		99	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/13		99	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/13		94	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/13		95	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/13		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/13		94	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/13		99	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/13		102	%	75 - 125

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: TB0A7205

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2234663	KCO	QC Standard	Acid Extractable Vanadium (V)	2010/08/13		97	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/13		96	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/13		109	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/13	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/13	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/13	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/13	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/13	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/13	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/13	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/13	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/13	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/13	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/13	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/13	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/13	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/13	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/13	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/13	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/13	<0.2		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/13	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/13	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/13	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/13	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/13	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/13	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/13	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/13	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/13	0.1		%	35
			Acid Extractable Beryllium (Be)	2010/08/13	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/13	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/13	2.5		%	35
			Acid Extractable Cobalt (Co)	2010/08/13	32.2		%	35
			Acid Extractable Copper (Cu)	2010/08/13	3.9		%	35
			Acid Extractable Lead (Pb)	2010/08/13	3.7		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/13	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/13	NC		%	35
			Acid Extractable Selenium (Se)	2010/08/13	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/13	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/13	NC		%	35
			Acid Extractable Vanadium (V)	2010/08/13	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/13	0.6		%	35
2235695	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/16		102	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/16	<0.05		ug/g	

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: TB0A7205

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
(1) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.								

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

CHAIN OF CUSTODY RECORD

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

INVOICE INFORMATION:
Company Name: #24125 Stantec Consulting Ltd
Contact Name: Patricia Coyne
Address: PO Box 1680, Yellowknife NT X1A2P3
Phone: (867)920-2216 Fax: (867)920-2278
Email: Patricia.Coyne@stantec.com

REPORT INFORMATION (if differs from invoice):
Company Name:
Contact Name: Same
Address:
Phone: Fax:
Email:

PROJECT INFORMATION:
Quotation #: ~~B5~~ B05402
P.O. #: 123600017
Project #: 123600017 Soils
Project Name: Clyde River Phase III ESA
Site #:
Sampled By: PC/MR/MN

Laboratory Use Only:
MAXXAM JOB #:
BOTTLE ORDER #: 200633
CHAIN OF CUSTODY #: C#200633-01-01
PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:
☐ MISA Reg. 153/04 Sewer Use ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
☐ Reg. 558 Municipality
Other (specify) CCME/CWS Report Criteria on C of A ? ☐
Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required: ☐
Rush Confirmation Number: (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Hold (metals)	BTEX/F1-F4 CCME	Metals (CCME) ATI	PAHs	extract + hold hydrocarbons	# of Bottles	Comments
1		TP2-0-2	Aug6/10	1000	Soil			✓				✓	3	
2		TP3-0-3	Aug6/10	1030	Soil				✓				3	
3		TP10-0-2	Aug6/10	1315	Soil				✓				2	
4		TP2-N-3	Aug7/10	1130	Soil				✓				3	
5		TP3-N-2	Aug7/10	1100	Soil				✓	✓	✓		3	
6		TP3-N-3	Aug7/10	1105	Soil				✓				3	
7		TP4-N-2	Aug7/10	1035	Soil				✓				3	
8		TP5-N-3	Aug7/10	1010	Soil				✓				3	
9		TP6-N-2	Aug7/10	940	Soil				✓	✓			3	
10		TP7-N-2	Aug7/10	910	Soil				✓	✓			3	

10-Aug-10 08:30
RENATA SPENA
B0A7205

*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 Intact on Cooler?
	10/08/08	10:00		2010/08/10	8:30		☐	4/4/5	☐ Yes ☐ No

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.

Maxxam Analytics — CHAIN OF CUSTODY 104000

Page: 2 of 2

Calgary: 4000 19st St. NE, T2E 6P8 — Ph: (403) 291-3077 — Fax: (403) 735-2240 — Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 — Ph: (780) 465-1212 — Fax: (780) 450-4187 — Toll free: (877) 465-8889
www.maxxamanalytics.com

Invoice To: Require Report? Yes ☐ No ☑

Company Name: #24125 Stantec Consulting
Contact Name: Patricia Coyne
Address: P.O Box 1680, Yellowknife
Prov: ~~XTA2P~~ NT PC: X1A-2P3
Contact #s: Ph: (867) 920-2216 Fax: (867) 920-~~2378~~ 2278

Report To: Patricia Coyne - Stantec Consulting
P.O Box 1689 Yellowknife
Prov: NT PC: X1A-2P3
Ph: (867) 920-2216 Fax: (867) 920-2278.

PO # / AFE #:
Quotation #: B05402
Project #: 123600017
Project Name: Clyde River Phase III ESA
Location: Clyde River NU.
Sampler's Initials: PC/MN/JMR.

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
☐ AT1
☑ CCME Residential
☐ OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S): Patricia.Coyne@stantec.com.

SERVICE REQUESTED:
☐ **RUSH** (Please ensure you contact the lab to reserve)
Date Required:
☑ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter	Flashpoint	pH (1:1)	TCLP	BTEX	Metals	PAHs	WATERS: BTEX F1	VOCs	BTEX F1-F2	BTEX F1-F4	Routine Water Package	Turb	F	REGULATED METALS (CCME / AT1)[3] Total	Preserved	Not Preserved	Dissolved	Preserved	Not Preserved	Filtered	Not Filtered	Mercury	Total	Dissolved	Ammonia	TKN	COD	TOC	DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	TP10-N-2	S	Aug 6/2010 15:50	✓			✓								✓																										3
2	TP10-N-3	S	Aug 6/2010 1550	✓			✓																																		W
3	DUP A	S	Aug 6/2010 1550	✓			✓																																		S
4	TP11-N-3	S	Aug 6/2010 1540	✓																																					W
5	TP12-N-2	S	Aug 6/2010 1515	✓			✓																																		S
6	TP13-N-1	S	Aug 6/2010 1440	✓			✓																																		W
7	TP9-N-2	S	Aug 6/2010 1345	✓																																					2
8	~~TP8-N-3~~	~~S~~	~~Aug 6/2010 1330~~	✓																																					3
9																																									
10																																									
11																																									
12																																									

Maxxam Job #:

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: Patricia Coyne Date/Time: 2010/08/08.
Sign and Print: Patricia Coyne
COMMENTS/SPECIAL INSTRUCTIONS:

JARS USED & NOT SUBMITTED
2010/08/10 Received By: 8:30 AM
J. Clement
CUSTODY SEAL YES / NO

Temperature			Ice
4	4	5	

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Your Project #: B0A7205

Attention: Renata Spena
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/14

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B069464
Received: 2010/08/11, 9:00

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	2	N/A	2010/08/12	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	2	N/A	2010/08/14	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	2	2010/08/11	2010/08/14	AB SOP-00003 AB WI-00016	EPA 3540C/8270D

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

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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

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W11556	W11557		
Sampling Date		2010/08/07	2010/08/07		
	Units	**GT8134-03R\TP3-N-2**	**GT8155-03R\TP10-N-2**	**RDL**	**QC Batch**
Physical Properties					
Moisture	%	6.0	8.5	0.3	4175748

RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W11556	W11556	W11557		
Sampling Date		2010/08/07	2010/08/07	2010/08/07		
	Units	**GT8134-03R\TP3-N-2**	**GT8134-03R\TP3-N-2 Lab-Dup**	**GT8155-03R\TP10-N-2**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Acenaphthene	mg/kg	0.32	0.34	0.050	0.0050	4173213
Benzo[a]pyrene equivalency	mg/kg	<0.1	N/A	<0.1	0.1	4171487
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Acridine	mg/kg	<0.010	<0.010	<0.010	0.010	4173213
Anthracene	mg/kg	<0.0040	<0.0040	0.0085	0.0040	4173213
Benzo(a)anthracene	mg/kg	0.0063	0.0054	<0.0050	0.0050	4173213
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Chrysene	mg/kg	0.0082	0.0078	<0.0050	0.0050	4173213
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Fluoranthene	mg/kg	0.018	0.019	0.021	0.0050	4173213
Fluorene	mg/kg	0.27	0.28	0.098	0.0050	4173213
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
2-Methylnaphthalene	mg/kg	0.43	0.45	1.6	0.0050	4173213
Naphthalene	mg/kg	0.47	0.46	0.41	0.0050	4173213
Phenanthrene	mg/kg	0.18	0.18	0.087	0.0050	4173213
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4173213
Pyrene	mg/kg	0.072	0.075	0.011	0.0050	4173213
Quinoline	mg/kg	<0.010	<0.010	<0.010	0.010	4173213
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	109	108	108	N/A	4173213
D12-BENZO(A)PYRENE (sur.)	%	105	105	105	N/A	4173213
D8-ACENAPHTHYLENE (sur.)	%	98	99	96	N/A	4173213
TERPHENYL-D14 (sur.)	%	102	101	102	N/A	4173213

N/A = Not Applicable
RDL = Reportable Detection Limit

Package 1	13.0°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0A7205
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB069464

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4173213	JA3	Matrix Spike						
		[W11557-01]	D10-ANTHRACENE (sur.)	2010/08/14		104	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/14		101	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/14		91	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/14		96	%	30 - 130
			Acenaphthene	2010/08/14		83	%	30 - 130
			Acenaphthylene	2010/08/14		86	%	30 - 130
			Acridine	2010/08/14		59	%	30 - 130
			Anthracene	2010/08/14		75	%	30 - 130
			Benzo(a)anthracene	2010/08/14		88	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/14		94	%	30 - 130
			Benzo(k)fluoranthene	2010/08/14		87	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/14		85	%	30 - 130
			Benzo(c)phenanthrene	2010/08/14		84	%	30 - 130
			Benzo(a)pyrene	2010/08/14		94	%	30 - 130
			Benzo[e]pyrene	2010/08/14		89	%	30 - 130
			Chrysene	2010/08/14		105	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/14		96	%	30 - 130
			Fluoranthene	2010/08/14		87	%	30 - 130
			Fluorene	2010/08/14		77	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/14		89	%	30 - 130
			2-Methylnaphthalene	2010/08/14		NC	%	30 - 130
			Naphthalene	2010/08/14		NC	%	30 - 130
			Phenanthrene	2010/08/14		79	%	30 - 130
			Perylene	2010/08/14		84	%	30 - 130
			Pyrene	2010/08/14		87	%	30 - 130
			Quinoline	2010/08/14		98	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/14		104	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/14		103	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/14		91	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/14		98	%	30 - 130
			Acenaphthene	2010/08/14		100	%	30 - 130
			Acenaphthylene	2010/08/14		96	%	30 - 130
			Acridine	2010/08/14		54	%	30 - 130
			Anthracene	2010/08/14		87	%	30 - 130
			Benzo(a)anthracene	2010/08/14		100	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/14		112	%	30 - 130
			Benzo(k)fluoranthene	2010/08/14		99	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/14		97	%	30 - 130
			Benzo(c)phenanthrene	2010/08/14		95	%	30 - 130
			Benzo(a)pyrene	2010/08/14		108	%	30 - 130
			Benzo[e]pyrene	2010/08/14		103	%	30 - 130
			Chrysene	2010/08/14		121	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/14		111	%	30 - 130
			Fluoranthene	2010/08/14		101	%	30 - 130
			Fluorene	2010/08/14		97	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/14		101	%	30 - 130
			2-Methylnaphthalene	2010/08/14		93	%	30 - 130
			Naphthalene	2010/08/14		99	%	30 - 130
			Phenanthrene	2010/08/14		100	%	30 - 130
			Perylene	2010/08/14		98	%	30 - 130
			Pyrene	2010/08/14		100	%	30 - 130
			Quinoline	2010/08/14		116	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/14		109	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/14		106	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0A7205
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB069464

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4173213	JA3	Method Blank	D8-ACENAPHTHYLENE (sur.)	2010/08/14		95	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/14		101	%	30 - 130
			Acenaphthene	2010/08/14	<0.0050		mg/kg	
			Acenaphthylene	2010/08/14	<0.0050		mg/kg	
			Acridine	2010/08/14	<0.010		mg/kg	
			Anthracene	2010/08/14	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/14	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/14	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/14	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/14	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/14	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/14	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/14	<0.0050		mg/kg	
			Chrysene	2010/08/14	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/14	<0.0050		mg/kg	
			Fluoranthene	2010/08/14	<0.0050		mg/kg	
			Fluorene	2010/08/14	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/14	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/14	<0.0050		mg/kg	
			Naphthalene	2010/08/14	<0.0050		mg/kg	
			Phenanthrene	2010/08/14	<0.0050		mg/kg	
			Perylene	2010/08/14	<0.0050		mg/kg	
			Pyrene	2010/08/14	<0.0050		mg/kg	
			Quinoline	2010/08/14	<0.010		mg/kg	
		RPD [W11556-01]	Acenaphthene	2010/08/14	6.5		%	50
			Acenaphthylene	2010/08/14	NC		%	50
			Acridine	2010/08/14	NC		%	50
			Anthracene	2010/08/14	NC		%	50
			Benzo(a)anthracene	2010/08/14	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/14	NC		%	50
			Benzo(k)fluoranthene	2010/08/14	NC		%	50
			Benzo(g,h,i)perylene	2010/08/14	NC		%	50
			Benzo(c)phenanthrene	2010/08/14	NC		%	50
			Benzo(a)pyrene	2010/08/14	NC		%	50
			Benzo[e]pyrene	2010/08/14	NC		%	50
			Chrysene	2010/08/14	NC		%	50
			Dibenz(a,h)anthracene	2010/08/14	NC		%	50
			Fluoranthene	2010/08/14	NC		%	50
			Fluorene	2010/08/14	4.5		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/14	NC		%	50
			2-Methylnaphthalene	2010/08/14	5.3		%	50
			Naphthalene	2010/08/14	0.7		%	50
			Phenanthrene	2010/08/14	1.6		%	50
			Perylene	2010/08/14	NC		%	50
			Pyrene	2010/08/14	4.2		%	50
			Quinoline	2010/08/14	NC		%	50
4175748	ALN	Method Blank	Moisture	2010/08/12	<0.3		%	
		RPD	Moisture	2010/08/12	1.1		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0A7205
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

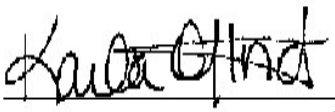
Maxxam Job Number: EB069464

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 #: B069464

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



KARLA OFFORD, Senior Analyst

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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.

Your Project #: B0A8033

Attention: Renata Spena
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/19

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B071243
Received: 2010/08/13, 18:43

Sample Matrix: Soil
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	9	N/A	2010/08/16	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	6	N/A	2010/08/19	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	6	2010/08/15	2010/08/19	AB SOP-00003 AB WI-00016	EPA 3540C/8270D

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

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Total cover pages: 1

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W20530	W20531	W20532	W20533		
Sampling Date		2010/08/07	2010/08/07	2010/08/07	2010/08/08		
	Units	**GU1980-01R\TP2.5-P-2**	**GU1981-01R\DUB P**	**GU1984-01R\TP1.5-M-2**	**GU2019-01R\TP11-M-2**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	17	14	13	13	0.3	4181264

RDL = Reportable Detection Limit

Maxxam ID		W20534	W20535	W20536		
Sampling Date		2010/08/08	2010/08/08	2010/08/08		
	Units	**GU2021-01R\TP11.6-M-2**	**GU2022-01R\TP12.3-M-2**	**GU2025-01R\TP11.6-LM-3**	**RDL**	**QC Batch**
Physical Properties						
Moisture	%	12	15	16	0.3	4181436

RDL = Reportable Detection Limit

Maxxam ID		W20537	W20538	W20538		
Sampling Date		2010/08/08	2010/08/08	2010/08/08		
	Units	**GU2051-01R\TP4-L-4**	**GU2053-01R\TP5-L-2**	**GU2053-01R\TP5-L-2 Lab-Dup**	**RDL**	**QC Batch**
Physical Properties						
Moisture	%	12	17	17	0.3	4181436

RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W20530	W20531		W20532		
Sampling Date		2010/08/07	2010/08/07		2010/08/07		
	Units	**GU1980-01R\TP2.5-P-2**	**GU1981-01R\DUB P**	**RDL**	**GU1984-01R\TP1.5-M-2**	**RDL**	**QC Batch**
Polycyclic Aromatics							
Acenaphthene	mg/kg	0.43	0.81	0.0050	0.027	0.0050	4181856
Benzo[a]pyrene equivalency	mg/kg	<0.1	<0.1	0.1	<0.1	0.1	4179286
Acenaphthylene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Acridine	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	4181856
Anthracene	mg/kg	<0.0040	<0.0040	0.0040	<0.0040	0.0040	4181856
Benzo(a)anthracene	mg/kg	0.0082	0.018	0.0050	<0.0050	0.0050	4181856
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0064	0.0050	<0.0050	0.0050	4181856
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo[e]pyrene	mg/kg	<0.0050	0.0069	0.0050	<0.0050	0.0050	4181856
Chrysene	mg/kg	0.051	0.10	0.0050	0.0077	0.0050	4181856
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Fluoranthene	mg/kg	0.025	0.053	0.0050	0.013	0.0050	4181856
Fluorene	mg/kg	0.97	1.9	0.0050	0.022	0.0050	4181856
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
2-Methylnaphthalene	mg/kg	7.2	11	0.0050	<0.0050	0.0050	4181856
Naphthalene	mg/kg	1.6	1.6	0.0050	<0.28 (1)	0.28	4181856
Phenanthrene	mg/kg	1.3	2.7	0.0050	<0.023 (1)	0.023	4181856
Perylene	mg/kg	<0.0050	<0.0050	0.0050	<0.0050	0.0050	4181856
Pyrene	mg/kg	0.069	0.13	0.0050	0.013	0.0050	4181856
Quinoline	mg/kg	<0.010	<0.010	0.010	<0.010	0.010	4181856
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	108	117	N/A	109	N/A	4181856
D12-BENZO(A)PYRENE (sur.)	%	111	128	N/A	104	N/A	4181856
D8-ACENAPHTHYLENE (sur.)	%	105	106	N/A	107	N/A	4181856
TERPHENYL-D14 (sur.)	%	113	129	N/A	105	N/A	4181856

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

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W20534		W20537		
Sampling Date		2010/08/08		2010/08/08		
	Units	**GU2021-01R\TP11.6-M-2**	**RDL**	**GU2051-01R\TP4-L-4**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Acenaphthene	mg/kg	<0.0050	0.0050	0.57	0.0050	4181856
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	<0.1	0.1	4179286
Acenaphthylene	mg/kg	<0.0050	0.0050	0.19	0.0050	4181856
Acridine	mg/kg	<0.010	0.010	<0.010	0.010	4181856
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	0.0040	4181856
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	0.011	0.0050	4181856
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	0.0078	0.0050	4181856
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
Benzo[e]pyrene	mg/kg	<0.0050	0.0050	0.0060	0.0050	4181856
Chrysene	mg/kg	<0.0050	0.0050	0.020	0.0050	4181856
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
Fluoranthene	mg/kg	<0.0050	0.0050	0.056	0.0050	4181856
Fluorene	mg/kg	<0.0050	0.0050	2.7	0.0050	4181856
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	12 (1)	0.050	4181856
Naphthalene	mg/kg	<0.0050	0.0050	0.71 (2)	0.71	4181856
Phenanthrene	mg/kg	<0.0050	0.0050	4.0	0.0050	4181856
Perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4181856
Pyrene	mg/kg	<0.0050	0.0050	0.056	0.0050	4181856
Quinoline	mg/kg	<0.010	0.010	<0.010	0.010	4181856
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	114	N/A	114	N/A	4181856
D12-BENZO(A)PYRENE (sur.)	%	109	N/A	126	N/A	4181856
D8-ACENAPHTHYLENE (sur.)	%	105	N/A	108	N/A	4181856
TERPHENYL-D14 (sur.)	%	110	N/A	128	N/A	4181856

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.
(2) Detection limits raised due to matrix interference

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W20538		
Sampling Date		2010/08/08		
	Units	**GU2053-01R\TP5-L-2**	**RDL**	**QC Batch**
Polycyclic Aromatics				
Acenaphthene	mg/kg	0.91	0.0050	4181856
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	4179286
Acenaphthylene	mg/kg	0.26	0.0050	4181856
Acridine	mg/kg	<0.010	0.010	4181856
Anthracene	mg/kg	<0.0040	0.0040	4181856
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	4181856
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	4181856
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	4181856
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	4181856
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	4181856
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	4181856
Benzo[e]pyrene	mg/kg	<0.0050	0.0050	4181856
Chrysene	mg/kg	<0.0050	0.0050	4181856
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	4181856
Fluoranthene	mg/kg	0.014	0.0050	4181856
Fluorene	mg/kg	3.4	0.0050	4181856
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	4181856
2-Methylnaphthalene	mg/kg	0.71	0.0050	4181856
Naphthalene	mg/kg	<0.46 (1)	0.46	4181856
Phenanthrene	mg/kg	4.8	0.0050	4181856
Perylene	mg/kg	<0.0050	0.0050	4181856
Pyrene	mg/kg	0.029	0.0050	4181856
Quinoline	mg/kg	<0.010	0.010	4181856
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	118	N/A	4181856
D12-BENZO(A)PYRENE (sur.)	%	129	N/A	4181856
D8-ACENAPHTHYLENE (sur.)	%	106	N/A	4181856
TERPHENYL-D14 (sur.)	%	134 (2)	N/A	4181856

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference
(2) One of four PAH surrogates fail. Surrogate recovery meets acceptance criteria.

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0A8033
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB071243

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4181264	ALN	Method Blank	Moisture	2010/08/16	<0.3		%	
		RPD	Moisture	2010/08/16	4.0		%	20
4181436	ALN	Method Blank	Moisture	2010/08/16	<0.3		%	
		RPD [W20538-01]	Moisture	2010/08/16	0		%	20
4181856	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/19		104	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/19		95	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/19		97	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/19		100	%	30 - 130
			Acenaphthene	2010/08/19		95	%	30 - 130
			Acenaphthylene	2010/08/19		94	%	30 - 130
			Acridine	2010/08/19		66	%	30 - 130
			Anthracene	2010/08/19		87	%	30 - 130
			Benzo(a)anthracene	2010/08/19		96	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/19		96	%	30 - 130
			Benzo(k)fluoranthene	2010/08/19		95	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/19		92	%	30 - 130
			Benzo(c)phenanthrene	2010/08/19		92	%	30 - 130
			Benzo(a)pyrene	2010/08/19		95	%	30 - 130
			Benzo[e]pyrene	2010/08/19		92	%	30 - 130
			Chrysene	2010/08/19		117	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/19		104	%	30 - 130
			Fluoranthene	2010/08/19		97	%	30 - 130
			Fluorene	2010/08/19		98	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/19		95	%	30 - 130
			2-Methylnaphthalene	2010/08/19		90	%	30 - 130
			Naphthalene	2010/08/19		92	%	30 - 130
			Phenanthrene	2010/08/19		94	%	30 - 130
			Perylene	2010/08/19		89	%	30 - 130
			Pyrene	2010/08/19		97	%	30 - 130
			Quinoline	2010/08/19		118	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/19		102	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/19		96	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/19		95	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/19		98	%	30 - 130
			Acenaphthene	2010/08/19		95	%	30 - 130
			Acenaphthylene	2010/08/19		94	%	30 - 130
			Acridine	2010/08/19		50	%	30 - 130
			Anthracene	2010/08/19		87	%	30 - 130
			Benzo(a)anthracene	2010/08/19		96	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/19		87	%	30 - 130
			Benzo(k)fluoranthene	2010/08/19		97	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/19		95	%	30 - 130
			Benzo(c)phenanthrene	2010/08/19		92	%	30 - 130
			Benzo(a)pyrene	2010/08/19		97	%	30 - 130
			Benzo[e]pyrene	2010/08/19		94	%	30 - 130
			Chrysene	2010/08/19		122	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/19		104	%	30 - 130
			Fluoranthene	2010/08/19		98	%	30 - 130
			Fluorene	2010/08/19		96	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/19		96	%	30 - 130
			2-Methylnaphthalene	2010/08/19		89	%	30 - 130
			Naphthalene	2010/08/19		92	%	30 - 130
			Phenanthrene	2010/08/19		95	%	30 - 130
			Perylene	2010/08/19		92	%	30 - 130
			Pyrene	2010/08/19		97	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0A8033
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB071243

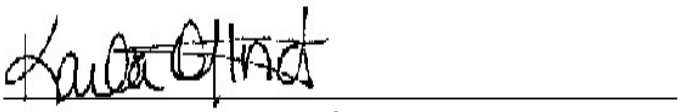
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4181856	JA3	Spiked Blank	Quinoline	2010/08/19		119	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/18		111	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/18		102	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/18		106	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/18		106	%	30 - 130
			Acenaphthene	2010/08/18	<0.0050		mg/kg	
			Acenaphthylene	2010/08/18	<0.0050		mg/kg	
			Acridine	2010/08/18	<0.010		mg/kg	
			Anthracene	2010/08/18	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/18	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/18	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/18	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/18	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/18	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/18	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/18	<0.0050		mg/kg	
			Chrysene	2010/08/18	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/18	<0.0050		mg/kg	
			Fluoranthene	2010/08/18	<0.0050		mg/kg	
			Fluorene	2010/08/18	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/18	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/18	<0.0050		mg/kg	
			Naphthalene	2010/08/18	<0.0050		mg/kg	
			Phenanthrene	2010/08/18	<0.0050		mg/kg	
			Perylene	2010/08/18	<0.0050		mg/kg	
			Pyrene	2010/08/18	<0.0050		mg/kg	
			Quinoline	2010/08/18	<0.010		mg/kg	
		RPD	Acenaphthene	2010/08/19	NC		%	50
			Acenaphthylene	2010/08/19	NC		%	50
			Anthracene	2010/08/19	NC		%	50
			Benzo(a)anthracene	2010/08/19	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/19	NC		%	50
			Benzo(k)fluoranthene	2010/08/19	NC		%	50
			Benzo(g,h,i)perylene	2010/08/19	NC		%	50
			Benzo(a)pyrene	2010/08/19	NC		%	50
			Chrysene	2010/08/19	19.3		%	50
			Dibenz(a,h)anthracene	2010/08/19	NC		%	50
			Fluoranthene	2010/08/19	NC		%	50
			Fluorene	2010/08/19	NC		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/19	NC		%	50
			Naphthalene	2010/08/19	NC		%	50
			Phenanthrene	2010/08/19	39.5		%	50
			Pyrene	2010/08/19	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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 #: B071243

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



KARLA OFFORD, Senior Analyst

==========

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

Your P.O. #: 16300R
Your Project #: 123600017
Your C.O.C. #: 20064101, 200641-0, 103999, 104001, 103997

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/10/14
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0A8033
Received: 2010/08/11, 08:46

Sample Matrix: Soil
Samples Received: 36

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	18	2010/08/18	2010/08/19	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (2)	18	N/A	2010/08/20	CAM SOP-00436	EPA SW846-3060/7199
TEH in Soil (AA PIRI) (1)	2	2010/08/12	2010/08/19	ATL SOP 00116 R3	Based on Atl. PIRI
Petroleum Hydro. CCME F1 & BTEX in Soil	16	2010/08/12	2010/08/17	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	11	2010/08/12	2010/08/18	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2010/09/08	2010/09/09	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	2010/08/12	2010/08/16	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	19	2010/08/18	2010/08/19	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2010/09/08	2010/09/11	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2010/09/09	2010/09/10	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	13	2010/08/18	2010/08/19	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	5	2010/08/19	2010/08/19	CAM SOP-00447	EPA 6020
Moisture (1)	2	N/A	2010/08/13	ATL SOP 00001 R3	MOE Handbook 1983
MOISTURE (2)	1	N/A	2010/09/07	CAM SOP-00445	MOE HANDBOOK(1983)
Moisture	35	N/A	2010/08/18	CAM SOP-00445	McKeague 2nd ed 1978
pH CaCl2 EXTRACT	2	2010/08/31	2010/08/31	CAM SOP-00413	SM 4500 H
VPH in Soil (PIRI2) (1)	2	2010/08/12	2010/08/16	ATL SOP 00120 R4	Based on Atl. PIRI
Sieve, 75um (2)	5	N/A	2010/08/18	CAM SOP-00467	
ModTPH (T2) Calc. for Soil (1)	2	N/A	2010/08/20	n/a	Based on Atl. PIRI

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

(1) This test was performed by Bedford
(2) This test was performed by Maxxam Ottawa
(3) Soils are reported on a dry weight basis unless otherwise specified.
(4) The Sieve test has been validated in accordance with ISO Guide 17025 requirements. SCC accreditation pending.

../2

Your P.O. #: 16300R
Your Project #: 123600017
Your C.O.C. #: 20064101, 200641-0, 103999, 104001, 103997

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/10/14
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0A8033
Report Date: 2010/10/14

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300R

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GU1978	GU1978		GU1979		GU1980		
Sampling Date		2010/08/07	2010/08/07		2010/08/07		2010/08/07		
COC Number		200641-0	200641-0		200641-0		200641-0		
	Units	**TP1.5-P-1**	**TP1.5-P-1 Lab-Dup**	**QC Batch**	**TP2.5-P-1**	**QC Batch**	**TP2.5-P-2**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	<0.2	2238816	<0.2	2238816		0.2	2238816
Moisture	%	4		2238813	59	2238883	16	1	2238813
Available (CaCl2) pH	pH						4.72		2251401

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GU1980	GU1981	GU1983		GU1984		
Sampling Date		2010/08/07	2010/08/07	2010/08/07		2010/08/07		
COC Number		200641-0	200641-0	200641-0		200641-0		
	Units	**TP2.5-P-2 Lab-Dup**	**DUB B**	**TP1.5-N-1**	**QC Batch**	**TP1.5-M-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g				2238816	<0.2	0.2	2238816
Moisture	%		14	2	2238813	9	1	2233383
Available (CaCl2) pH	pH	4.73			2251401			

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GU1985			GU1992			GU1993		
Sampling Date		2010/08/07			2010/08/08			2010/08/08		
COC Number		200641-0			103999			103999		
	Units	**TP1.5-M-4**	**RDL**	**QC Batch**	**TP2-M-2**	**RDL**	**QC Batch**	**TP3-M-2**	**RDL**	**QC Batch**
Inorganics										
Chromium (VI)	ug/g		0.2	2238816		0.2	2238816	<0.2	0.2	2238816
Moisture	%	17	1	2238813	8.7	0.2	2257660	9	1	2239342

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0A8033
Report Date: 2010/10/14

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300R

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GU1994		GU1995		GU1996		GU1997		
Sampling Date		2010/08/08		2010/08/08		2010/08/08		2010/08/08		
COC Number		103999		103999		103999		103999		
	Units	**TP3-M-3**	**QC Batch**	**TP4-M-2**	**QC Batch**	**TP4-M-4**	**QC Batch**	**TP5-M-1**	**RDL**	**QC Batch**
Inorganics										
Chromium (VI)	ug/g		2238816	<0.2	2238816		2238816	<0.2	0.2	2238816
Moisture	%	10	2239078	11	2238883	12	2239078	18	1	2238883

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GU1998	GU1999		GU2000		GU2001		
Sampling Date		2010/08/08	2010/08/08		2010/08/08		2010/08/08		
COC Number		103999	103999		103999		103999		
	Units	**TP5-M-2**	**TP6-M-2**	**QC Batch**	**TP7-M-2**	**QC Batch**	**TP8-M-1**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g		<0.2	2238816	<0.2	2238816	<0.2	0.2	2238816
Moisture	%	18	10	2239078	12	2238716	20	1	2239078

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GU2002	GU2019		GU2020		GU2021		
Sampling Date		2010/08/08	2010/08/08		2010/08/08		2010/08/08		
COC Number		103999	104001		104001		104001		
	Units	**TP9-M-2**	**TP11-M-2**	**QC Batch**	**TP11.6-M-1**	**QC Batch**	**TP11.6-M-2**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	<0.2	2238816	<0.2	2238816		0.2	2238816
Moisture	%	16	12	2238716	19	2238883	12	1	2238716

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0A8033
Report Date: 2010/10/14

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300R

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GU2022	GU2023		GU2024		GU2025		
Sampling Date		2010/08/08	2010/08/08		2010/08/08		2010/08/08		
COC Number		104001	104001		104001		104001		
	Units	**TP12.3-M-2**	**TP11-LM-1**	**QC Batch**	**TP11.6-LM-1**	**QC Batch**	**TP11.6-LM-3**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	<0.2	2238816	<0.2	2238816		0.2	2238816
Moisture	%	13	60	2238716	23	2238883	22	1	2239078
Available (CaCl2) pH	pH				4.35	2251401			
Miscellaneous Parameters									
Grain Size	%						FINE	N/A	2239350
Sieve - #200 (<0.075mm)	%						72	N/A	2239350
Sieve - #200 (>0.075mm)	%						28	N/A	2239350

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GU2026	GU2027	GU2029		GU2051		
Sampling Date		2010/08/08	2010/08/08	2010/08/08		2010/08/08		
COC Number		104001	104001	104001		103997		
	Units	**TP12.3-LM-1**	**TP1.5-L-3**	**TP3-L-1**	**QC Batch**	**TP4-L-4**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2		<0.2	2238816		0.2	2238816
Moisture	%	18	17	4	2238716	9	1	2233383
Miscellaneous Parameters								
Grain Size	%		COARSE		2239350	COARSE	N/A	2239350
Sieve - #200 (<0.075mm)	%		4.1		2239350	20	N/A	2239350
Sieve - #200 (>0.075mm)	%		96		2239350	80	N/A	2239350

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 #: B0A8033
Report Date: 2010/10/14

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300R

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GU2052		GU2053	GU2053	GU2054		
Sampling Date		2010/08/08		2010/08/08	2010/08/08	2010/08/08		
COC Number		103997		103997	103997	103997		
	Units	**TP4-L-5**	**QC Batch**	**TP5-L-2**	**TP5-L-2 Lab-Dup**	**TP5-L-3**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	2	2238716	15	15	11	1	2238813

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GU2055	GU2056		GU2057	GU2059		
Sampling Date		2010/08/08	2010/08/08		2010/08/08	2010/08/08		
COC Number		103997	103997		103997	103997		
	Units	**TP6-L-2**	**TP8-L-1**	**QC Batch**	**TP8-L-2**	**TP9-L-3**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g		<0.2	2238816			0.2	2238816
Moisture	%	9	16	2238883	12	16	1	2238813
Miscellaneous Parameters								
Grain Size	%	COARSE		2239350		FINE	N/A	2239350
Sieve - #200 (<0.075mm)	%	44		2239350		65	N/A	2239350
Sieve - #200 (>0.075mm)	%	56		2239350		35	N/A	2239350

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A8033
Report Date: 2010/10/14

Stantec Consulting Ltd
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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GU1978		GU1979	GU1984	GU1993	GU1993		
Sampling Date		2010/08/07		2010/08/07	2010/08/07	2010/08/08	2010/08/08		
COC Number		200641-0		200641-0	200641-0	103999	103999		
	Units	**TP1.5-P-1**	**QC Batch**	**TP2.5-P-1**	**TP1.5-M-2**	**TP3-M-2**	**TP3-M-2 Lab-Dup**	**RDL**	**QC Batch**
Metals									
Hot Water Ext. Boron (B)	ug/g	0.13	2238732	2.7	0.07	0.22		0.05	2238732
Acid Extractable Aluminum (Al)	ug/g	2700	2239517	4900	1900	5900	6100	50	2239326
Acid Extractable Antimony (Sb)	ug/g	<0.2	2239517	1.2	<0.2	<0.2	<0.2	0.2	2239326
Acid Extractable Arsenic (As)	ug/g	<1	2239517	2	<1	<1	<1	1	2239326
Acid Extractable Barium (Ba)	ug/g	16	2239517	64	12	30	31	0.5	2239326
Acid Extractable Beryllium (Be)	ug/g	<0.2	2239517	<0.2	<0.2	<0.2	<0.2	0.2	2239326
Acid Extractable Bismuth (Bi)	ug/g	<1	2239517	<1	<1	<1	<1	1	2239326
Acid Extractable Cadmium (Cd)	ug/g	1.0	2239517	1.0	<0.1	<0.1	<0.1	0.1	2239326
Acid Extractable Chromium (Cr)	ug/g	5	2239517	25	7	10	10	1	2239326
Acid Extractable Cobalt (Co)	ug/g	1.7	2239517	7.8	1.5	3.6	3.6	0.1	2239326
Acid Extractable Copper (Cu)	ug/g	8.3	2239517	81	4.3	9.2	10	0.5	2239326
Acid Extractable Iron (Fe)	ug/g	7200	2239517	16000	9100	12000	12000	50	2239326
Acid Extractable Lead (Pb)	ug/g	22	2239517	100	4	9	13	1	2239326
Acid Extractable Manganese (Mn)	ug/g	75	2239517	390	55	150	160	1	2239326
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2239517	2.3	<0.5	<0.5	<0.5	0.5	2239326
Acid Extractable Nickel (Ni)	ug/g	2.9	2239517	15	2.3	5.9	5.8	0.5	2239326
Acid Extractable Selenium (Se)	ug/g	<0.5	2239517	<0.5	<0.5	<0.5	<0.5	0.5	2239326
Acid Extractable Silver (Ag)	ug/g	1.1	2239517	36	0.2	<0.2	<0.2	0.2	2239326
Acid Extractable Strontium (Sr)	ug/g	4	2239517	28	4	7	7	1	2239326
Acid Extractable Thallium (Tl)	ug/g	0.08	2239517	0.15	0.07	0.14	0.15	0.05	2239326
Acid Extractable Tin (Sn)	ug/g	11	2239517	<5	<5	<5	<5	5	2239326
Acid Extractable Uranium (U)	ug/g	0.43	2239517	0.74	0.52	0.43	0.52	0.05	2239326
Acid Extractable Vanadium (V)	ug/g	15	2239517	24	19	22	24	5	2239326
Acid Extractable Zinc (Zn)	ug/g	46	2239517	470	34	28	28	5	2239326
Acid Extractable Mercury (Hg)	ug/g	<0.05	2239517	0.53	<0.05	<0.05	<0.05	0.05	2239326

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GU1995	GU1997		GU1999		GU2000		
Sampling Date		2010/08/08	2010/08/08		2010/08/08		2010/08/08		
COC Number		103999	103999		103999		103999		
	Units	**TP4-M-2**	**TP5-M-1**	**QC Batch**	**TP6-M-2**	**QC Batch**	**TP7-M-2**	**RDL**	**QC Batch**
Metals									
Hot Water Ext. Boron (B)	ug/g	0.13	0.24	2238732	0.28	2238825	0.54	0.05	2238732
Acid Extractable Aluminum (Al)	ug/g	12000	12000	2239326	6800	2239326	8500	50	2239517
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	2239326	<0.2	2239326	<0.2	0.2	2239517
Acid Extractable Arsenic (As)	ug/g	1	1	2239326	<1	2239326	<1	1	2239517
Acid Extractable Barium (Ba)	ug/g	52	54	2239326	36	2239326	39	0.5	2239517
Acid Extractable Beryllium (Be)	ug/g	0.2	0.4	2239326	<0.2	2239326	<0.2	0.2	2239517
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	2239326	<1	2239326	<1	1	2239517
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	2239326	<0.1	2239326	<0.1	0.1	2239517
Acid Extractable Chromium (Cr)	ug/g	17	20	2239326	14	2239326	14	1	2239517
Acid Extractable Cobalt (Co)	ug/g	6.9	6.9	2239326	5.0	2239326	5.4	0.1	2239517
Acid Extractable Copper (Cu)	ug/g	20	8.1	2239326	6.8	2239326	15	0.5	2239517
Acid Extractable Iron (Fe)	ug/g	21000	23000	2239326	17000	2239326	19000	50	2239517
Acid Extractable Lead (Pb)	ug/g	8	8	2239326	5	2239326	5	1	2239517
Acid Extractable Manganese (Mn)	ug/g	240	270	2239326	210	2239326	210	1	2239517
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	2239326	<0.5	2239326	<0.5	0.5	2239517
Acid Extractable Nickel (Ni)	ug/g	10	11	2239326	7.4	2239326	7.9	0.5	2239517
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	2239326	<0.5	2239326	<0.5	0.5	2239517
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	2239326	<0.2	2239326	<0.2	0.2	2239517
Acid Extractable Strontium (Sr)	ug/g	8	9	2239326	7	2239326	10	1	2239517
Acid Extractable Thallium (Tl)	ug/g	0.30	0.33	2239326	0.21	2239326	0.23	0.05	2239517
Acid Extractable Tin (Sn)	ug/g	<5	<5	2239326	<5	2239326	<5	5	2239517
Acid Extractable Uranium (U)	ug/g	0.66	0.91	2239326	0.81	2239326	0.58	0.05	2239517
Acid Extractable Vanadium (V)	ug/g	39	42	2239326	30	2239326	34	5	2239517
Acid Extractable Zinc (Zn)	ug/g	45	47	2239326	29	2239326	32	5	2239517
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	2239326	<0.05	2239326	<0.05	0.05	2239517

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GU2001		GU2002	GU2019	GU2020		
Sampling Date		2010/08/08		2010/08/08	2010/08/08	2010/08/08		
COC Number		103999		103999	104001	104001		
	Units	**TP8-M-1**	**QC Batch**	**TP9-M-2**	**TP11-M-2**	**TP11.6-M-1**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.25	2238825	0.24	0.14	0.25	0.05	2238732
Acid Extractable Aluminum (Al)	ug/g	14000	2239326	9000	7700	12000	50	2239326
Acid Extractable Antimony (Sb)	ug/g	<0.2	2239326	<0.2	<0.2	<0.2	0.2	2239326
Acid Extractable Arsenic (As)	ug/g	1	2239326	1	1	1	1	2239326
Acid Extractable Barium (Ba)	ug/g	48	2239326	45	34	53	0.5	2239326
Acid Extractable Beryllium (Be)	ug/g	<0.2	2239326	0.2	<0.2	0.2	0.2	2239326
Acid Extractable Bismuth (Bi)	ug/g	<1	2239326	<1	<1	<1	1	2239326
Acid Extractable Cadmium (Cd)	ug/g	0.2	2239326	<0.1	<0.1	<0.1	0.1	2239326
Acid Extractable Chromium (Cr)	ug/g	19	2239326	15	13	19	1	2239326
Acid Extractable Cobalt (Co)	ug/g	6.1	2239326	6.4	5.7	6.7	0.1	2239326
Acid Extractable Copper (Cu)	ug/g	230	2239326	9.0	8.1	13	0.5	2239326
Acid Extractable Iron (Fe)	ug/g	17000	2239326	21000	15000	23000	50	2239326
Acid Extractable Lead (Pb)	ug/g	40	2239326	7	5	7	1	2239326
Acid Extractable Manganese (Mn)	ug/g	290	2239326	260	180	190	1	2239326
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2239326	<0.5	0.6	0.5	0.5	2239326
Acid Extractable Nickel (Ni)	ug/g	18	2239326	9.2	7.7	11	0.5	2239326
Acid Extractable Selenium (Se)	ug/g	<0.5	2239326	<0.5	<0.5	<0.5	0.5	2239326
Acid Extractable Silver (Ag)	ug/g	<0.2	2239326	0.5	<0.2	<0.2	0.2	2239326
Acid Extractable Strontium (Sr)	ug/g	8	2239326	10	7	7	1	2239326
Acid Extractable Thallium (Tl)	ug/g	0.27	2239326	0.26	0.23	0.36	0.05	2239326
Acid Extractable Tin (Sn)	ug/g	<5	2239326	<5	<5	<5	5	2239326
Acid Extractable Uranium (U)	ug/g	0.51	2239326	0.75	0.87	1.2	0.05	2239326
Acid Extractable Vanadium (V)	ug/g	35	2239326	35	29	44	5	2239326
Acid Extractable Zinc (Zn)	ug/g	50	2239326	36	31	43	5	2239326
Acid Extractable Mercury (Hg)	ug/g	<0.05	2239326	<0.05	<0.05	<0.05	0.05	2239326

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GU2022	GU2023		GU2024	GU2026		
Sampling Date		2010/08/08	2010/08/08		2010/08/08	2010/08/08		
COC Number		104001	104001		104001	104001		
	Units	**TP12.3-M-2**	**TP11-LM-1**	**QC Batch**	**TP11.6-LM-1**	**TP12.3-LM-1**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.06	0.59	2238732	0.43	0.22	0.05	2238732
Acid Extractable Aluminum (Al)	ug/g	4600	13000	2239517	11000	9300	50	2239326
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	2239517	<0.2	<0.2	0.2	2239326
Acid Extractable Arsenic (As)	ug/g	<1	1	2239517	1	<1	1	2239326
Acid Extractable Barium (Ba)	ug/g	20	61	2239517	55	36	0.5	2239326
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.4	2239517	0.2	0.2	0.2	2239326
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	2239517	<1	<1	1	2239326
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	2239517	<0.1	<0.1	0.1	2239326
Acid Extractable Chromium (Cr)	ug/g	7	19	2239517	17	14	1	2239326
Acid Extractable Cobalt (Co)	ug/g	3.0	11	2239517	6.4	4.9	0.1	2239326
Acid Extractable Copper (Cu)	ug/g	5.3	16	2239517	13	8.3	0.5	2239326
Acid Extractable Iron (Fe)	ug/g	13000	23000	2239517	22000	18000	50	2239326
Acid Extractable Lead (Pb)	ug/g	3	9	2239517	7	6	1	2239326
Acid Extractable Manganese (Mn)	ug/g	82	310	2239517	180	160	1	2239326
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	2239517	0.6	<0.5	0.5	2239326
Acid Extractable Nickel (Ni)	ug/g	4.4	11	2239517	10	7.9	0.5	2239326
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	2239517	<0.5	<0.5	0.5	2239326
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	2239517	<0.2	<0.2	0.2	2239326
Acid Extractable Strontium (Sr)	ug/g	3	12	2239517	9	6	1	2239326
Acid Extractable Thallium (Tl)	ug/g	0.14	0.35	2239517	0.31	0.24	0.05	2239326
Acid Extractable Tin (Sn)	ug/g	<5	<5	2239517	<5	<5	5	2239326
Acid Extractable Uranium (U)	ug/g	0.59	1.1	2239517	1.5	0.88	0.05	2239326
Acid Extractable Vanadium (V)	ug/g	19	41	2239517	39	33	5	2239326
Acid Extractable Zinc (Zn)	ug/g	17	44	2239517	43	32	5	2239326
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	2239517	<0.05	<0.05	0.05	2239326

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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GU2029		GU2056		
Sampling Date		2010/08/08		2010/08/08		
COC Number		104001		103997		
	Units	**TP3-L-1**	**QC Batch**	**TP8-L-1**	**RDL**	**QC Batch**
Metals						
Hot Water Ext. Boron (B)	ug/g	0.12	2238732	0.22	0.05	2238732
Acid Extractable Aluminum (Al)	ug/g	2500	2239517	1100	50	2239326
Acid Extractable Antimony (Sb)	ug/g	0.3	2239517	<0.2	0.2	2239326
Acid Extractable Arsenic (As)	ug/g	1	2239517	<1	1	2239326
Acid Extractable Barium (Ba)	ug/g	17	2239517	24	0.5	2239326
Acid Extractable Beryllium (Be)	ug/g	<0.2	2239517	<0.2	0.2	2239326
Acid Extractable Bismuth (Bi)	ug/g	<1	2239517	<1	1	2239326
Acid Extractable Cadmium (Cd)	ug/g	0.1	2239517	<0.1	0.1	2239326
Acid Extractable Chromium (Cr)	ug/g	6	2239517	1	1	2239326
Acid Extractable Cobalt (Co)	ug/g	1.9	2239517	0.3	0.1	2239326
Acid Extractable Copper (Cu)	ug/g	19	2239517	2.8	0.5	2239326
Acid Extractable Iron (Fe)	ug/g	7700	2239517	1200	50	2239326
Acid Extractable Lead (Pb)	ug/g	45	2239517	12	1	2239326
Acid Extractable Manganese (Mn)	ug/g	83	2239517	110	1	2239326
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2239517	<0.5	0.5	2239326
Acid Extractable Nickel (Ni)	ug/g	4.0	2239517	0.8	0.5	2239326
Acid Extractable Selenium (Se)	ug/g	<0.5	2239517	<0.5	0.5	2239326
Acid Extractable Silver (Ag)	ug/g	<0.2	2239517	<0.2	0.2	2239326
Acid Extractable Strontium (Sr)	ug/g	6	2239517	4	1	2239326
Acid Extractable Thallium (Tl)	ug/g	0.07	2239517	<0.05	0.05	2239326
Acid Extractable Tin (Sn)	ug/g	<5	2239517	<5	5	2239326
Acid Extractable Uranium (U)	ug/g	0.63	2239517	0.07	0.05	2239326
Acid Extractable Vanadium (V)	ug/g	16	2239517	<5	5	2239326
Acid Extractable Zinc (Zn)	ug/g	45	2239517	14	5	2239326
Acid Extractable Mercury (Hg)	ug/g	<0.05	2239517	<0.05	0.05	2239326

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU1978	GU1980	GU1981	GU1983	GU1983	GU1985		
Sampling Date		2010/08/07	2010/08/07	2010/08/07	2010/08/07	2010/08/07	2010/08/07		
COC Number		200641-0	200641-0	200641-0	200641-0	200641-0	200641-0		
	Units	**TP1.5-P-1**	**TP2.5-P-2**	**DUB B**	**TP1.5-N-1**	**TP1.5-N-1 Lab-Dup**	**TP1.5-M-4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/g	0.021	<0.005	<0.005	<0.005		<0.005	0.005	2235700
Toluene	ug/g	0.05	<0.02	<0.02	<0.02		<0.02	0.02	2235700
Ethylbenzene	ug/g	<0.01	0.03	0.03	<0.01		<0.01	0.01	2235700
o-Xylene	ug/g	<0.02	0.23	0.23	<0.02		<0.02	0.02	2235700
p+m-Xylene	ug/g	<0.04	0.27	0.25	<0.04		<0.04	0.04	2235700
Total Xylenes	ug/g	<0.04	0.50	0.48	<0.04		<0.04	0.04	2235700
F1 (C6-C10)	ug/g	<10	58	49	<10		<10	10	2235700
F1 (C6-C10) - BTEX	ug/g	<10	57	48	<10		<10	10	2235700
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	910	2600	230	230	<10	10	2233866
F3 (C16-C34 Hydrocarbons)	ug/g	78	380	1000	140	130	<10	10	2233866
F4 (C34-C50 Hydrocarbons)	ug/g	25	<10	30	<10	<10	<10	10	2233866
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes	Yes	Yes		2233866
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	92	97	97	101		100		2235700
4-Bromofluorobenzene	%	101	107	105	100		104		2235700
D10-Ethylbenzene	%	94	110	112	103		99		2235700
D4-1,2-Dichloroethane	%	111	91	95	100		115		2235700
o-Terphenyl	%	73	78	85	66	69	76		2233866

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU1992		GU1994		GU1995		GU1996		
Sampling Date		2010/08/08		2010/08/08		2010/08/08		2010/08/08		
COC Number		103999		103999		103999		103999		
	Units	**TP2-M-2**	**QC Batch**	**TP3-M-3**	**QC Batch**	**TP4-M-2**	**QC Batch**	**TP4-M-4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons										
Benzene	ug/g	<0.005	2259397	<0.005	2235704	<0.005	2259397	<0.005	0.005	2235704
Toluene	ug/g	<0.02	2259397	<0.02	2235704	<0.02	2259397	<0.02	0.02	2235704
Ethylbenzene	ug/g	<0.01	2259397	<0.01	2235704	<0.01	2259397	<0.01	0.01	2235704
o-Xylene	ug/g	<0.02	2259397	<0.02	2235704	<0.02	2259397	<0.02	0.02	2235704
p+m-Xylene	ug/g	<0.04	2259397	<0.04	2235704	<0.04	2259397	<0.04	0.04	2235704
Total Xylenes	ug/g	<0.04	2259397	<0.04	2235704	<0.04	2259397	<0.04	0.04	2235704
F1 (C6-C10)	ug/g	180	2259397	<10	2235704	<10	2259397	14	10	2235704
F1 (C6-C10) - BTEX	ug/g	180	2259397	<10	2235704	<10	2259397	14	10	2235704
F2-F4 Hydrocarbons										
F2 (C10-C16 Hydrocarbons)	ug/g	2600	2259621	770	2233990	<10	2259621	110	10	2233990
F3 (C16-C34 Hydrocarbons)	ug/g	22000	2259621	260	2233990	36	2259621	<10	10	2233990
F4 (C34-C50 Hydrocarbons)	ug/g	1500	2259621	<10	2233990	<10	2259621	<10	10	2233990
Reached Baseline at C50	ug/g	Yes	2259621	Yes	2233990	Yes	2259621	Yes		2233990
Surrogate Recovery (%)										
1,4-Difluorobenzene	%	91	2259397	96	2235704	87	2259397	99		2235704
4-Bromofluorobenzene	%	97	2259397	100	2235704	92	2259397	99		2235704
D10-Ethylbenzene	%	87	2259397	99	2235704	82	2259397	99		2235704
D4-1,2-Dichloroethane	%	103	2259397	97	2235704	106	2259397	103		2235704
o-Terphenyl	%	75	2259621	93	2233990	80	2259621	91		2233990

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0A8033
Report Date: 2010/10/14

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300R

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU1996	GU1998	GU1998	GU1999		GU2000		
Sampling Date		2010/08/08	2010/08/08	2010/08/08	2010/08/08		2010/08/08		
COC Number		103999	103999	103999	103999		103999		
	Units	**TP4-M-4 Lab-Dup**	**TP5-M-2**	**TP5-M-2 Lab-Dup**	**TP6-M-2**	**QC Batch**	**TP7-M-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/g		<0.005	<0.005	<0.005	2235704	<0.005	0.005	2235700
Toluene	ug/g		<0.02	<0.02	<0.02	2235704	<0.02	0.02	2235700
Ethylbenzene	ug/g		<0.01	<0.01	<0.01	2235704	<0.01	0.01	2235700
o-Xylene	ug/g		<0.02	<0.02	<0.02	2235704	<0.02	0.02	2235700
p+m-Xylene	ug/g		<0.04	<0.04	<0.04	2235704	<0.04	0.04	2235700
Total Xylenes	ug/g		<0.04	<0.04	<0.04	2235704	<0.04	0.04	2235700
F1 (C6-C10)	ug/g		<10	<10	<10	2235704	<10	10	2235700
F1 (C6-C10) - BTEX	ug/g		<10	<10	<10	2235704	<10	10	2235700
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	110	<10		230	2233990	<10	10	2233866
F3 (C16-C34 Hydrocarbons)	ug/g	<10	85		64	2233990	<10	10	2233866
F4 (C34-C50 Hydrocarbons)	ug/g	<10	48		23	2233990	<10	10	2233866
Reached Baseline at C50	ug/g	Yes	Yes		Yes	2233990	Yes		2233866
Surrogate Recovery (%)									
1,4-Difluorobenzene	%		102	93	101	2235704	100		2235700
4-Bromofluorobenzene	%		100	99	100	2235704	100		2235700
D10-Ethylbenzene	%		102	96	102	2235704	101		2235700
D4-1,2-Dichloroethane	%		100	113	100	2235704	104		2235700
o-Terphenyl	%	94	96		107	2233990	76		2233866

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300R

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU2000		GU2001		GU2002	GU2019		
Sampling Date		2010/08/08		2010/08/08		2010/08/08	2010/08/08		
COC Number		103999		103999		103999	104001		
	Units	**TP7-M-2 Lab-Dup**	**QC Batch**	**TP8-M-1**	**QC Batch**	**TP9-M-2**	**TP11-M-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/g	<0.005	2235700	<0.005	2235704	<0.005	<0.005	0.005	2235700
Toluene	ug/g	<0.02	2235700	<0.02	2235704	<0.02	<0.02	0.02	2235700
Ethylbenzene	ug/g	<0.01	2235700	<0.01	2235704	<0.01	<0.01	0.01	2235700
o-Xylene	ug/g	<0.02	2235700	<0.02	2235704	<0.02	<0.02	0.02	2235700
p+m-Xylene	ug/g	<0.04	2235700	<0.04	2235704	<0.04	<0.04	0.04	2235700
Total Xylenes	ug/g	<0.04	2235700	<0.04	2235704	<0.04	<0.04	0.04	2235700
F1 (C6-C10)	ug/g	<10	2235700	<10	2235704	<10	<10	10	2235700
F1 (C6-C10) - BTEX	ug/g	<10	2235700	<10	2235704	<10	<10	10	2235700
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g		2233866	<10	2233990	<10	<10	10	2233866
F3 (C16-C34 Hydrocarbons)	ug/g		2233866	190	2233990	110	35	10	2233866
F4 (C34-C50 Hydrocarbons)	ug/g		2233866	120	2233990	13	<10	10	2233866
Reached Baseline at C50	ug/g		2233866	Yes	2233990	Yes	Yes		2233866
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	91	2235700	96	2235704	101	99		2235700
4-Bromofluorobenzene	%	100	2235700	99	2235704	99	100		2235700
D10-Ethylbenzene	%	89	2235700	104	2235704	102	100		2235700
D4-1,2-Dichloroethane	%	116	2235700	100	2235704	100	104		2235700
o-Terphenyl	%		2233866	97	2233990	72	76		2233866

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU2021	GU2022			GU2023		
Sampling Date		2010/08/08	2010/08/08			2010/08/08		
COC Number		104001	104001			104001		
	Units	**TP11.6-M-2**	**TP12.3-M-2**	**RDL**	**QC Batch**	**TP11-LM-1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	<0.005	0.005	2235700	<0.01	0.01	2235700
Toluene	ug/g	<0.02	<0.02	0.02	2235700	<0.04	0.04	2235700
Ethylbenzene	ug/g	<0.01	<0.01	0.01	2235700	<0.02	0.02	2235700
o-Xylene	ug/g	<0.02	<0.02	0.02	2235700	<0.04	0.04	2235700
p+m-Xylene	ug/g	<0.04	<0.04	0.04	2235700	<0.08	0.08	2235700
Total Xylenes	ug/g	<0.04	<0.04	0.04	2235700	<0.08	0.08	2235700
F1 (C6-C10)	ug/g	<10	<10	10	2235700	<20	20	2235700
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	2235700	<20	20	2235700
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	2233866	76	20	2260566
F3 (C16-C34 Hydrocarbons)	ug/g	33	40	10	2233866	340	20	2260566
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	2233866	200	20	2260566
Reached Baseline at C50	ug/g	Yes	Yes		2233866	Yes		2260566
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	98	102		2235700	92		2235700
4-Bromofluorobenzene	%	102	99		2235700	100		2235700
D10-Ethylbenzene	%	96	97		2235700	92		2235700
D4-1,2-Dichloroethane	%	114	100		2235700	112		2235700
o-Terphenyl	%	75	74		2233866	99		2260566

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU2025		GU2026	GU2027	GU2029	GU2051		
Sampling Date		2010/08/08		2010/08/08	2010/08/08	2010/08/08	2010/08/08		
COC Number		104001		104001	104001	104001	103997		
	Units	**TP11.6-LM-3**	**QC Batch**	**TP12.3-LM-1**	**TP1.5-L-3**	**TP3-L-1**	**TP4-L-4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/g	<0.005	2235704	<0.005	<0.005	<0.005	<0.005	0.005	2235700
Toluene	ug/g	<0.02	2235704	<0.02	<0.02	<0.02	<0.02	0.02	2235700
Ethylbenzene	ug/g	<0.01	2235704	<0.01	<0.01	<0.01	<0.01	0.01	2235700
o-Xylene	ug/g	<0.02	2235704	<0.02	<0.02	<0.02	0.04	0.02	2235700
p+m-Xylene	ug/g	<0.04	2235704	<0.04	<0.04	<0.04	<0.04	0.04	2235700
Total Xylenes	ug/g	<0.04	2235704	<0.04	<0.04	<0.04	0.04	0.04	2235700
F1 (C6-C10)	ug/g	<10	2235704	<10	<10	<10	190	10	2235700
F1 (C6-C10) - BTEX	ug/g	<10	2235704	<10	<10	<10	190	10	2235700
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	2233990	<10	<10	<10	5200	10	2233866
F3 (C16-C34 Hydrocarbons)	ug/g	61	2233990	62	<10	<10	1500	10	2233866
F4 (C34-C50 Hydrocarbons)	ug/g	24	2233990	11	<10	<10	<10	10	2233866
Reached Baseline at C50	ug/g	Yes	2233990	Yes	Yes	Yes	Yes		2233866
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	96	2235704	96	100	99	88		2235700
4-Bromofluorobenzene	%	100	2235704	101	98	100	113		2235700
D10-Ethylbenzene	%	99	2235704	92	99	96	110		2235700
D4-1,2-Dichloroethane	%	103	2235704	114	102	106	98		2235700
o-Terphenyl	%	93	2233990	74	79	69	94		2233866

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU2052	GU2053	GU2054		GU2055		
Sampling Date		2010/08/08	2010/08/08	2010/08/08		2010/08/08		
COC Number		103997	103997	103997		103997		
	Units	**TP4-L-5**	**TP5-L-2**	**TP5-L-3**	**QC Batch**	**TP6-L-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	<0.005	<0.005	2235700	<0.005	0.005	2235704
Toluene	ug/g	<0.02	<0.02	<0.02	2235700	<0.02	0.02	2235704
Ethylbenzene	ug/g	<0.01	<0.01	0.03	2235700	<0.01	0.01	2235704
o-Xylene	ug/g	0.03	<0.02	0.07	2235700	<0.02	0.02	2235704
p+m-Xylene	ug/g	<0.04	<0.04	0.10	2235700	<0.04	0.04	2235704
Total Xylenes	ug/g	<0.04	<0.04	0.17	2235700	<0.04	0.04	2235704
F1 (C6-C10)	ug/g	48	83	<10	2235700	<10	10	2235704
F1 (C6-C10) - BTEX	ug/g	48	83	<10	2235700	<10	10	2235704
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	1800	11000	290	2233866	66	10	2233990
F3 (C16-C34 Hydrocarbons)	ug/g	560	4300	170	2233866	46	10	2233990
F4 (C34-C50 Hydrocarbons)	ug/g	<10	18	13	2233866	13	10	2233990
Reached Baseline at C50	ug/g	Yes	Yes	Yes	2233866	Yes		2233990
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	93	85	102	2235700	101		2235704
4-Bromofluorobenzene	%	106	110	98	2235700	100		2235704
D10-Ethylbenzene	%	100	100	103	2235700	95		2235704
D4-1,2-Dichloroethane	%	104	106	98	2235700	104		2235704
o-Terphenyl	%	74	111	79	2233866	92		2233990

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GU2057	GU2059		
Sampling Date		2010/08/08	2010/08/08		
COC Number		103997	103997		
	Units	**TP8-L-2**	**TP9-L-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons					
Benzene	ug/g	<0.005	<0.005	0.005	2235700
Toluene	ug/g	<0.02	<0.02	0.02	2235700
Ethylbenzene	ug/g	<0.01	<0.01	0.01	2235700
o-Xylene	ug/g	<0.02	<0.02	0.02	2235700
p+m-Xylene	ug/g	<0.04	<0.04	0.04	2235700
Total Xylenes	ug/g	<0.04	<0.04	0.04	2235700
F1 (C6-C10)	ug/g	<10	<10	10	2235700
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	2235700
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	2233866
F3 (C16-C34 Hydrocarbons)	ug/g	47	73	10	2233866
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	10	2233866
Reached Baseline at C50	ug/g	Yes	Yes		2233866
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	97	99		2235700
4-Bromofluorobenzene	%	100	103		2235700
D10-Ethylbenzene	%	94	91		2235700
D4-1,2-Dichloroethane	%	110	117		2235700
o-Terphenyl	%	74	74		2233866

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		GU1984	GU1984	GU2051		
Sampling Date		2010/08/07	2010/08/07	2010/08/08		
COC Number		200641-0	200641-0	103997		
	Units	**TP1.5-M-2**	**TP1.5-M-2 Lab-Dup**	**TP4-L-4**	**RDL**	**QC Batch**
Petroleum Hydrocarbons						
Benzene	mg/kg	<0.03		<0.03	0.03	2236219
Toluene	mg/kg	<0.03		<0.03	0.03	2236219
Ethylbenzene	mg/kg	<0.03		<0.03	0.03	2236219
Xylene (Total)	mg/kg	<0.05		<0.05	0.05	2236219
Aliphatic >C6-C8	mg/kg	0.8 (1)		5.9 (1)	0.5	2236219
Aliphatic >C8-C10	mg/kg	37		100	0.4	2236219
>C8-C10 Aromatics (-EX)	mg/kg	2.5		7.8	0.1	2236219
Aliphatic >C10-C12	mg/kg	440	400	1100	8.0	2233730
Aliphatic >C12-C16	mg/kg	910	830	2700	15	2233730
Aliphatic >C16-C21	mg/kg	180	160	1100	15	2233730
Aliphatic >C21-<C32	mg/kg	67	58	33	15	2233730
Aromatic >C10-C12	mg/kg	84	110	280	4.0	2233730
Aromatic >C12-C16	mg/kg	230	300	840	15	2233730
Aromatic >C16-C21	mg/kg	67	88	460	15	2233730
Aromatic >C21-<C32	mg/kg	20	25	44	15	2233730
Modified TPH (Tier 2)	mg/kg	2000		6700	20	2232740
Surrogate Recovery (%)						
Isobutylbenzene - Extractable	%	81	104	101		2233730
n-Dotriacontane - Extractable	%	93 (2)	86	84 (2)		2233730
Isobutylbenzene - Volatile	%	77		50 (3)		2236219

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated VPH RDL(s) due to detected levels in the method blank.
(2) Fuel oil fraction.
(3) VPH surrogate not within acceptance limits. Analysis was repeated with similar results.

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GENERAL COMMENTS

For Samples TM2-M-2 (GU1992) and TP4-M-2 (GU1995): The following analyses were completed past the recommended holding time; F1/BTEX analysis and F2-F4 PHC analysis. This may increase the variability associated with these results.

Sample GU1992-01: F2-F4 Analysis: Sample was decanted prior the analysis as per client request.

Sample GU1995-01: F2-F4 Analysis: Sample was decanted prior the analysis as per client request.

Sample GU2023-01: F1-BTEX & F2-F4 Analysis:
Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300R
Project name:

Quality Assurance Report

Maxxam Job Number: TB0A8033

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2233730	KKE	Spiked Blank	Aliphatic >C10-C12	2010/08/19		110	%	30 - 130
			Aliphatic >C12-C16	2010/08/19		110	%	30 - 130
			Aliphatic >C16-C21	2010/08/19		118	%	30 - 130
			Aliphatic >C21-<C32	2010/08/19		109	%	30 - 130
			Aromatic >C10-C12	2010/08/19		107	%	30 - 130
			Aromatic >C12-C16	2010/08/19		103	%	30 - 130
			Aromatic >C16-C21	2010/08/19		93	%	30 - 130
			Aromatic >C21-<C32	2010/08/19		105	%	30 - 130
		Method Blank	Isobutylbenzene - Extractable	2010/08/19		85	%	30 - 130
			n-Dotriacontane - Extractable	2010/08/19		116	%	30 - 130
			Aliphatic >C10-C12	2010/08/19	<8.0		mg/kg	
			Aliphatic >C12-C16	2010/08/19	<15		mg/kg	
			Aliphatic >C16-C21	2010/08/19	<15		mg/kg	
			Aliphatic >C21-<C32	2010/08/19	<15		mg/kg	
			Aromatic >C10-C12	2010/08/19	<4.0		mg/kg	
			Aromatic >C12-C16	2010/08/19	<15		mg/kg	
			Aromatic >C16-C21	2010/08/19	<15		mg/kg	
			Aromatic >C21-<C32	2010/08/19	<15		mg/kg	
		RPD [GU1984-03]	Aliphatic >C10-C12	2010/08/19	9.4		%	50
			Aliphatic >C12-C16	2010/08/19	9.2		%	50
			Aliphatic >C16-C21	2010/08/19	7.4		%	50
			Aliphatic >C21-<C32	2010/08/19	NC		%	50
			Aromatic >C10-C12	2010/08/19	23.6		%	50
			Aromatic >C12-C16	2010/08/19	27.9		%	50
			Aromatic >C16-C21	2010/08/19	NC		%	50
			Aromatic >C21-<C32	2010/08/19	NC		%	50
2233866	BWW	Matrix Spike						
		[GU1983-01]	o-Terphenyl	2010/08/19		77	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/19		79	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/19		79	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/19		79	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/19		78	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/19		86	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/19		86	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/19		86	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/19		79	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/19	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/19	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/19	<10		ug/g	
		RPD [GU1983-01]	F2 (C10-C16 Hydrocarbons)	2010/08/19	0.5		%	50
			F3 (C16-C34 Hydrocarbons)	2010/08/19	5.7		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/19	NC		%	50
2233990	JJE	Matrix Spike						
		[GU1996-01]	o-Terphenyl	2010/08/16		88	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/16		83	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/16		83	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/16		83	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/16		88	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/16		83	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/16		83	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/16		83	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/16		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/16	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/16	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/16	<10		ug/g	

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300R
Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: TB0A8033

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2233990	JJE	RPD [GU1996-01]	F2 (C10-C16 Hydrocarbons)	2010/08/16	0.5		%	50
			F3 (C16-C34 Hydrocarbons)	2010/08/16	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/16	NC		%	50
2235700	LRA	Matrix Spike [GU2000-01]	1,4-Difluorobenzene	2010/08/17		94	%	60 - 140
			4-Bromofluorobenzene	2010/08/17		101	%	60 - 140
			D10-Ethylbenzene	2010/08/17		96	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/17		104	%	60 - 140
			Benzene	2010/08/17		77	%	60 - 140
			Toluene	2010/08/17		88	%	60 - 140
			Ethylbenzene	2010/08/17		90	%	60 - 140
			o-Xylene	2010/08/17		96	%	60 - 140
			p+m-Xylene	2010/08/17		92	%	60 - 140
			F1 (C6-C10)	2010/08/17		87	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/17		101	%	60 - 140
			4-Bromofluorobenzene	2010/08/17		100	%	60 - 140
			D10-Ethylbenzene	2010/08/17		101	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/17		100	%	60 - 140
			Benzene	2010/08/17		84	%	60 - 140
			Toluene	2010/08/17		91	%	60 - 140
			Ethylbenzene	2010/08/17		97	%	60 - 140
			o-Xylene	2010/08/17		101	%	60 - 140
			p+m-Xylene	2010/08/17		98	%	60 - 140
			F1 (C6-C10)	2010/08/17		85	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/17		95	%	60 - 140
			4-Bromofluorobenzene	2010/08/17		102	%	60 - 140
			D10-Ethylbenzene	2010/08/17		87	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/17		116	%	60 - 140
			Benzene	2010/08/17	<0.005		ug/g	
			Toluene	2010/08/17	<0.02		ug/g	
			Ethylbenzene	2010/08/17	<0.01		ug/g	
			o-Xylene	2010/08/17	<0.02		ug/g	
			p+m-Xylene	2010/08/17	<0.04		ug/g	
			Total Xylenes	2010/08/17	<0.04		ug/g	
			F1 (C6-C10)	2010/08/17	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/17	<10		ug/g	
		RPD [GU2000-01]	Benzene	2010/08/17	NC		%	50
			Toluene	2010/08/17	NC		%	50
			Ethylbenzene	2010/08/17	NC		%	50
			o-Xylene	2010/08/17	NC		%	50
			p+m-Xylene	2010/08/17	NC		%	50
			Total Xylenes	2010/08/17	NC		%	50
			F1 (C6-C10)	2010/08/17	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/17	NC		%	50
2235704	LRA	Matrix Spike [GU1998-01]	1,4-Difluorobenzene	2010/08/17		98	%	60 - 140
			4-Bromofluorobenzene	2010/08/17		101	%	60 - 140
			D10-Ethylbenzene	2010/08/17		95	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/17		106	%	60 - 140
			Benzene	2010/08/17		83	%	60 - 140
			Toluene	2010/08/17		86	%	60 - 140
			Ethylbenzene	2010/08/17		86	%	60 - 140
			o-Xylene	2010/08/17		92	%	60 - 140
			p+m-Xylene	2010/08/17		89	%	60 - 140
			F1 (C6-C10)	2010/08/17		69	%	60 - 140

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Client Project #: 123600017
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Quality Assurance Report (Continued)

Maxxam Job Number: TB0A8033

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2235704	LRA	Spiked Blank	1,4-Difluorobenzene	2010/08/17		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/17		100	%	60 - 140
			D10-Ethylbenzene	2010/08/17		98	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/17		106	%	60 - 140
			Benzene	2010/08/17		87	%	60 - 140
			Toluene	2010/08/17		89	%	60 - 140
			Ethylbenzene	2010/08/17		91	%	60 - 140
			o-Xylene	2010/08/17		96	%	60 - 140
			p+m-Xylene	2010/08/17		93	%	60 - 140
			F1 (C6-C10)	2010/08/17		82	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/17		95	%	60 - 140
			4-Bromofluorobenzene	2010/08/17		99	%	60 - 140
			D10-Ethylbenzene	2010/08/17		93	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/17		104	%	60 - 140
			Benzene	2010/08/17	<0.005		ug/g	
			Toluene	2010/08/17	<0.02		ug/g	
			Ethylbenzene	2010/08/17	<0.01		ug/g	
			o-Xylene	2010/08/17	<0.02		ug/g	
			p+m-Xylene	2010/08/17	<0.04		ug/g	
			Total Xylenes	2010/08/17	<0.04		ug/g	
			F1 (C6-C10)	2010/08/17	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/17	<10		ug/g	
		RPD [GU1998-01]	Benzene	2010/08/17	NC		%	50
			Toluene	2010/08/17	NC		%	50
			Ethylbenzene	2010/08/17	NC		%	50
			o-Xylene	2010/08/17	NC		%	50
			p+m-Xylene	2010/08/17	NC		%	50
			Total Xylenes	2010/08/17	NC		%	50
			F1 (C6-C10)	2010/08/17	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/17	NC		%	50
2236219	ASL	Spiked Blank	Isobutylbenzene - Volatile	2010/08/16		97	%	60 - 140
			Benzene	2010/08/16		88	%	60 - 140
			Toluene	2010/08/16		91	%	60 - 140
			Ethylbenzene	2010/08/16		90	%	60 - 140
			Xylene (Total)	2010/08/16		90	%	60 - 140
		Method Blank	Isobutylbenzene - Volatile	2010/08/16		97	%	60 - 140
			Benzene	2010/08/16	<0.03		mg/kg	
			Toluene	2010/08/16	<0.03		mg/kg	
			Ethylbenzene	2010/08/16	<0.03		mg/kg	
			Xylene (Total)	2010/08/16	<0.05		mg/kg	
			Aliphatic >C6-C8	2010/08/16	<0.5 (1)		mg/kg	
			Aliphatic >C8-C10	2010/08/16	<0.4		mg/kg	
			>C8-C10 Aromatics (-EX)	2010/08/16	<0.1		mg/kg	
2238716	LKA	RPD	Moisture	2010/08/18	0.6		%	20
2238732	JOH	QC Standard	Hot Water Ext. Boron (B)	2010/08/19		103	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/19	<0.05		ug/g	
2238813	LKA	RPD [GU2053-02]	Moisture	2010/08/18	4.0		%	20
2238816	SAC	Matrix Spike [GU1978-02]	Chromium (VI)	2010/08/20		0 (2)	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/20		105	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/20	<0.2		ug/g	
		RPD [GU1978-02]	Chromium (VI)	2010/08/20	NC		%	25
2238825	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/19		101	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/19	<0.05		ug/g	
2238883	LKA	RPD	Moisture	2010/08/18	0.6		%	20

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Quality Assurance Report (Continued)

Maxxam Job Number: TB0A8033

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239078	DEE	RPD	Moisture	2010/08/18	1.9		%	20
2239326	KCO	Matrix Spike [GU1993-02]	Acid Extractable Aluminum (Al)	2010/08/19		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/19		101	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/19		101	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/19		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/19		95	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/19		104	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/19		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/19		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/19		100	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/19		100	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/19		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/19		102	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/19		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/19		99	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/19		99	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/19		102	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/19		100	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/19		102	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/19		99	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/19		106	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/19		103	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/19		102	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/19		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/19		108	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/19		101	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/19		100	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/19		96	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/19		99	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/19		100	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/19		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/19		97	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/19		96	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/19		97	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/19		97	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/19		106	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/19		99	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/19		99	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/19		97	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/19		98	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/19		97	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/19		98	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/19		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/19		97	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/19		97	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/19		101	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/19		98	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/19		98	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/19		97	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/19	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/19	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/19	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/19	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/19	<0.2		ug/g	

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239326	KCO	Method Blank	Acid Extractable Bismuth (Bi)	2010/08/19	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/19	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/19	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/19	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/19	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/19	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/19	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/19	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/19	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/19	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/19	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/19	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/19	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/19	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/19	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/19	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/19	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/19	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/19	<0.05		ug/g	
		RPD [GU1993-02]	Acid Extractable Aluminum (Al)	2010/08/19	3.3		%	35
			Acid Extractable Antimony (Sb)	2010/08/19	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/19	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/19	3.5		%	35
			Acid Extractable Beryllium (Be)	2010/08/19	NC		%	35
			Acid Extractable Bismuth (Bi)	2010/08/19	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/19	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/19	2.4		%	35
			Acid Extractable Cobalt (Co)	2010/08/19	0.9		%	35
			Acid Extractable Copper (Cu)	2010/08/19	11.1		%	35
			Acid Extractable Iron (Fe)	2010/08/19	4.2		%	35
			Acid Extractable Lead (Pb)	2010/08/19	32.4		%	35
			Acid Extractable Manganese (Mn)	2010/08/19	5.1		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/19	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/19	0.9		%	35
			Acid Extractable Selenium (Se)	2010/08/19	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/19	NC		%	35
			Acid Extractable Strontium (Sr)	2010/08/19	4.0		%	35
			Acid Extractable Thallium (Tl)	2010/08/19	NC		%	35
			Acid Extractable Tin (Sn)	2010/08/19	NC		%	35
			Acid Extractable Uranium (U)	2010/08/19	19.7		%	25
			Acid Extractable Vanadium (V)	2010/08/19	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/19	0.7		%	35
			Acid Extractable Mercury (Hg)	2010/08/19	NC		%	35
2239342	DEE	RPD	Moisture	2010/08/18	5.9		%	20
2239350	DEE	QC Standard	Sieve - #200 (<0.075mm)	2010/08/18		66	%	N/A
			Sieve - #200 (>0.075mm)	2010/08/18		34	%	N/A
		RPD	Sieve - #200 (<0.075mm)	2010/08/18	6.0		%	20
			Sieve - #200 (>0.075mm)	2010/08/18	2.9		%	20
2239517	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/19		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/19		95	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/19		93	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/19		94	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/19		90	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/19		97	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/19		93	%	75 - 125

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239517	KCO	Matrix Spike	Acid Extractable Chromium (Cr)	2010/08/19		91	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/19		93	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/19		96	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/19		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/19		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/19		96	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/19		92	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/19		93	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/19		95	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/19		92	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/19		97	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/19		93	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/19		95	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/19		99	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/19		97	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/19		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/19		101	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/19		94	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/19		99	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/19		93	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/19		97	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/19		89	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/19		98	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/19		97	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/19		90	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/19		91	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/19		92	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/19		97	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/19		98	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/19		92	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/19		96	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/19		91	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/19		97	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/19		97	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/19		95	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/19		96	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/19		93	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/19		99	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/19		90	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/19		95	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/19		100	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/19	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/19	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/19	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/19	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/19	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/19	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/19	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/19	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/19	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/19	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/19	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/19	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/19	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/19	<0.5		ug/g	

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300R
Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: TB0A8033

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239517	KCO	Method Blank	Acid Extractable Nickel (Ni)	2010/08/19	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/19	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/19	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/19	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/19	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/19	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/19	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/19	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/19	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/19	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/19	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/19	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/19	5.6		%	35
			Acid Extractable Beryllium (Be)	2010/08/19	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/19	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/19	NC		%	35
			Acid Extractable Cobalt (Co)	2010/08/19	4.4		%	35
			Acid Extractable Copper (Cu)	2010/08/19	2.9		%	35
			Acid Extractable Lead (Pb)	2010/08/19	5.1		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/19	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/19	NC		%	35
			Acid Extractable Selenium (Se)	2010/08/19	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/19	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/19	NC		%	35
			Acid Extractable Tin (Sn)	2010/08/19	NC		%	35
			Acid Extractable Uranium (U)	2010/08/19	NC		%	25
			Acid Extractable Vanadium (V)	2010/08/19	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/19	4.9		%	35
			Acid Extractable Mercury (Hg)	2010/08/19	NC		%	35
2259397	LRA	Spiked Blank	1,4-Difluorobenzene	2010/09/09		99	%	60 - 140
			4-Bromofluorobenzene	2010/09/09		96	%	60 - 140
			D10-Ethylbenzene	2010/09/09		103	%	30 - 130
			D4-1,2-Dichloroethane	2010/09/09		105	%	60 - 140
			Benzene	2010/09/09		92	%	60 - 140
		RPD	Benzene	2010/09/09	1.5		%	50
		Spiked Blank	Toluene	2010/09/09		96	%	60 - 140
		RPD	Toluene	2010/09/09	3.6		%	50
		Spiked Blank	Ethylbenzene	2010/09/09		98	%	60 - 140
		RPD	Ethylbenzene	2010/09/09	5.4		%	50
		Spiked Blank	o-Xylene	2010/09/09		100	%	60 - 140
		RPD	o-Xylene	2010/09/09	2.8		%	50
		Spiked Blank	p+m-Xylene	2010/09/09		96	%	60 - 140
		RPD	p+m-Xylene	2010/09/09	2.0		%	50
		Spiked Blank	F1 (C6-C10)	2010/09/09		80	%	60 - 140
		RPD	F1 (C6-C10)	2010/09/09	16.6		%	50
		Method Blank	1,4-Difluorobenzene	2010/09/09		96	%	60 - 140
			4-Bromofluorobenzene	2010/09/09		94	%	60 - 140
			D10-Ethylbenzene	2010/09/09		106	%	30 - 130
			D4-1,2-Dichloroethane	2010/09/09		96	%	60 - 140
			Benzene	2010/09/09	<0.005		ug/g	
			Toluene	2010/09/09	<0.02		ug/g	
			Ethylbenzene	2010/09/09	<0.01		ug/g	
			o-Xylene	2010/09/09	<0.02		ug/g	
			p+m-Xylene	2010/09/09	<0.04		ug/g	
			Total Xylenes	2010/09/09	<0.04		ug/g	

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300R
Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: TB0A8033

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2259397	LRA	Method Blank	F1 (C6-C10)	2010/09/09	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/09/09	<10		ug/g	
2259621	BLZ	Spiked Blank	o-Terphenyl	2010/09/13		90	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/13		83	%	60 - 130
		RPD	F2 (C10-C16 Hydrocarbons)	2010/09/13	0		%	50
		Spiked Blank	F3 (C16-C34 Hydrocarbons)	2010/09/13		83	%	60 - 130
		RPD	F3 (C16-C34 Hydrocarbons)	2010/09/13	0		%	50
		Spiked Blank	F4 (C34-C50 Hydrocarbons)	2010/09/13		83	%	60 - 130
		RPD	F4 (C34-C50 Hydrocarbons)	2010/09/13	0		%	50
		Method Blank	o-Terphenyl	2010/09/11		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/11	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/09/11	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/09/11	<10		ug/g	
2260566	NCI	Matrix Spike	o-Terphenyl	2010/09/14		77	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/14		63	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/09/14		63	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/09/14		63	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/09/14		102	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/14		91	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/09/14		91	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/09/14		91	%	60 - 130
		Method Blank	o-Terphenyl	2010/09/10		74	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/10	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/09/10	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/09/10	<10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/09/10	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/09/10	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/09/10	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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) Elevated VPH RDL(s) due to detected levels in the method blank.
(2) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.

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 Analytics

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CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200641
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680 Yellowknife NT X1A2P3	Address:		Project #:	123600017 (~~Sediment~~)	CHAIN OF CUSTODY #: C#200641-01-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax (867)920-2278	Phone:	Fax:	Project Name:	Clyde River Phase III ESA		
Email:	Patricia.Coyne@stantec.com	Email:		Site #:			
				Sampled By:	PC/MR/MN		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality:
- Other (specify): CCME/CWS — Report Criteria on C of A ? ☐

SPECIAL INSTRUCTIONS:

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

SAMPLES MUST BE KEPT COOL (< 10ºC) 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: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ (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): extract/hold BTEX, F1-F4	metals	CCME BTEX, F1-F4	PAHs	CCME Subtract hactor aliphatics+aromatics	# of Bottles	Comments
1		BCHBRLC 0.8	7-Aug-10		Soil			✓					3	
2		BCHBRLC 1.0	7-Aug-10		Soil			✓					3	
3		TP15-P-1	7-Aug-10		Soil				✓	✓			3	
4		TP25-P-1	7-Aug-10		Soil				✓				3	REC'D IN OTTAWA
5		TP25-P-2	7-Aug-10		Soil					✓	✓		3	
6		DUP B	7-Aug-10		Soil					✓	✓		3	
7		TP15-02	7-Aug-10		Soil			✓					3	
8		TP15-N-1	7-Aug-10		Soil					✓			3	
9		TP15-M-2	8-Aug-10		Soil				✓		✓	✓	3	
10		TP15-M-4	8-Aug-10		Soil					✓			3	7/7/6

*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 Intact on Cooler?
Patricia Coyne Patricia Coyne	2010/08/09		Melissa Drake	10/08/11	8:16		☐	6/6/7 COOLER	☐ 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

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

103999 CHAIN OF CUSTODY

Page 2 of 4

Invoice To: Require Report? Yes ☐ No ☑

Company Name: #24125 Stantec Consulting
Contact Name: Patricia Coyne
Address: P O Box 1650, Yellowknife
Prov: NT PC: X1A-2P3
Contact #s: Ph: (867)920-2216 Fax: (867)920-2278

Report To:

Patricia Coyne - Stantec Consulting
P.O Box 1650
Yellowknife
Prov: NT PC: X1A-2P3
Ph: (867)920-2216 Fax: (867)920-2278

PO # / AFE #:
Quotation #: B05402
Project #: 123600017
Project Name: Clyde River Phase III ESA
Location: Clyde River, NU
Sampler's Initials: PC/MR/MN

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1
☑ CCME residential
☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S): Patricia.Coyne@stantec.com

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)
Date Required:
☑ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4 (CCME)	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter	Flashpoint	pH (1:1)	TCLP	BTEX	Metals	WATERS: BTEX F1	VOCs	BTEX F1-F2	BTEX F1-F4	Routine Water Package	Turb	F	REGULATED METALS (CCME / AT1)[3] Total Preserved	Not Preserved	Dissolved Preserved Filtered	Not Preserved Not Filtered	Mercury	Total	Dissolved	Ammonia	TKN	COD	TOC	DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	TP2-M-2	S	2010/08/08										✓ extract+hold for BTEX F1-F4																						3
2	~~TP2-M-3~~	S	2010/08/08	✓																										TMA				
3	TP3-M-2	S	2010/08/08				✓						✓																						3
4	TP3-M-3	S	2010/08/08	✓																															3
5	TP4-M-2	S	2010/08/08				✓						✓																						3
6	TP4-M-4	S	2010/08/08	✓																															3
7	TP5-M-1	S	2010/08/08				✓																												3
8	TP5-M-2	S	2010/08/08	✓																															3
9	TP6-M-2	S	2010/08/08	✓			✓																												3
10	TP7-M-2	S	2010/08/08	✓			✓																												3
11	TP8-M-1	S	2010/08/08	✓			✓																												3
12	TP9-M-2	S	2010/08/08	✓			✓																												3

RECD IN OTTAWA

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: Patricia Coyne Date/Time: 2010/08/09

Sign and Print:

COMMENTS/SPECIAL INSTRUCTIONS:

10/08/11

JARS USED & NOT SUBMITTED | Received By: Melissa Dream 8:46 | CUSTODY SEAL YES / NO

Temperature			Ice
7	7	6	Yes
6	6	7	

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

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www.maxxamanalytics.com

104001 **CHAIN OF CUSTODY**

Page: 3 of 4

Invoice To: Require Report? Yes ☐ No ☐

Company Name: #24125 Stantec Consulting
Contact Name: Patricia Coyne
Address: P.O Box 1650, Yellowknife
Prov: NT PC: X1A-2P3
Contact #s: Ph: 867-920-2216 Fax: 867-920-2216

Report To:

Patricia Coyne - Stantec Consulting
PO Box 1650
Yellowknife
Prov: NT PC: X1A-2P3
Ph: 867-920-2216 Fax: 867-920-2278

PO # / AFE #:
Quotation #: B05402
Project #: 123600017
Project Name: Clyde River Phase III ESA
Location: Clyde River, NU
Sampler's Initials: PC/MN/MR

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1
☑ CCME Residential
☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):
Patricia.Coyne@stantec.com

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)
Date Required:
☑ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter ☐ Flashpoint ☐ pH (1:1)	TCLP ☐ BTEX ☐ Metals	hold metals hold+extract PAHs PAHs	WATERS: ☐ VOCs	☐ BTEX F1 ☐ BTEX F1-F2 ☐ BTEX F1-F4	☐ Routine Water Package ☐ Turb ☐ F	Total ☐ Preserved ☐ Not Preserved	Dissolved ☐ Preserved ☐ Not Filtered	REGULATED METALS (CCME / AT1)[2]	Mercury ☐ Total ☐ Dissolved	☐ Ammonia ☐ TKN ☐ COD	☐ TOC ☐ DOC	OTHER TEST(S): particle size extract+hold BTEX+F1-F4	*HOLD for 60 Days	# of Containers Submitted
1	TP11-M-1		2010/08/08								✓												3
2	TP11-M-2		2010/08/08	✓			✓				✓												3
3	TP11.6-M-1		2010/08/08				✓																2
4	TP11.6-M-2		2010/08/08	✓							✓	✓											3
5	TP12.3-M-2		2010/08/08	✓			✓				✓												3
6	TP11-LM-1		2010/08/08	✓			✓																3
7	TP11.6-LM-1		2010/08/08				✓																2
8	TP11.6-LM-3		2010/08/08	✓							✓										✓		3
9	TP12.3-LM-1		2010/08/08	✓			✓																3
10	TP1.5-L-3		2010/08/09	✓																	✓		3
11	TP2-L-3		2010/08/09	✓			✓														✓		3
12	TP3-L-1		2010/08/09	✓			✓																3

REC'D IN OTTAWA

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

10/08/11 8:46

Maxxam Job #:

Relinquished By: Patricia Coyne Date/Time: 2010/08/09

Sign and Print:

COMMENTS/SPECIAL INSTRUCTIONS:

JARS USED & NOT SUBMITTED

Received By: Melissa Drain

CUSTODY SEAL YES / NO

Temperature			Ice
7	7	6	Yes
6	6	7	

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Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

103997 CHAIN OF CUSTODY

Page: 4 of 4

Invoice To: Require Report? Yes ☑ No ☐

Company Name: #24125 Stantec Consulting
Contact Name: Patricia Coyne
Address: P.O Box 1680, Yellowknife
Prov: NT PC: X1A 2P3
Contact #s: Ph: 867-920-2216 Fax: 867-920-2216

Report To: same

Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #: B05402
Project #: 123600017
Project Name: Clyde River Ph III ESA
Location: Clyde River, NU
Sampler's Initials: PC/MN/MR

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
☐ AT1
☑ CCME residential
☐ OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S): patricia.coyne@stantec.com

SERVICE REQUESTED:
☐ RUSH (Please ensure you contact the lab to reserve)
Date Required:
☑ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter	Flashpoint	pH (1:1)	BTEX	Metals	TCLP	ESG fractionation	aliphatics, aromatics	PAHs	particle size	WATERS: BTEX F1 VOCs	BTEX F1-F2	BTEX F1-F4	Routine Water Package	Turb	F	Total Preserved	Total Not Preserved	Dissolved Preserved	Dissolved Not Preserved	Dissolved Filtered	Dissolved Not Filtered	REGULATED METALS (CCME / AT1)[3]	Mercury	Total	Dissolved	Ammonia	TKN	COD	TOC	DOC	OTHER TEST(S): hold metals	*HOLD for 60 Days	# of Containers Submitted
1	TP4-L-4	S	2010/08/09	✓											✓	✓	✓	✓																									3
2	TP4-L-5	S	2010/08/09	✓																																						REC'D IN OTTAWA		3
3	TP5-L-2	S	2010/08/09	✓													✓																											3
4	TP5-L-3	S	2010/08/09	✓																																							3
5	TP6-L-2	S	2010/08/09	✓														✓																											3
6	TP8-L-1	S	2010/08/09				✓																																					3
7	TP8-L-2	S	2010/08/09	✓																																							3
8	TP9-L-1	S	2010/08/09																																						✓		3
9	TP9-L-3	S	2010/08/09	✓														✓																											3
10																																										
11																																										
12																																										

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: Patricia Coyne Date/Time: 2010/08/09
Sign and Print: Melissa Drawin 10/08/11 8:46
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
		2 7 6			Yes
	CUSTODY SEAL YES / NO	6 6 7			

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Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 00573301

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B0537
Received: 2010/08/16, 11:26

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	12	2010/08/20	2010/08/20	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (1)	2	N/A	2010/08/20	BRL SOP-00106	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (1)	10	N/A	2010/08/24	BRL SOP-00106	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	12	2010/08/17	2010/08/18	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	11	2010/08/17	2010/08/18	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	1	2010/08/17	2010/08/19	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	11	2010/08/20	2010/08/20	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	1	2010/08/20	2010/08/23	CAM SOP-00447	EPA 6020
Moisture	12	N/A	2010/08/18	CAM SOP-00445	McKeague 2nd ed 1978

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4230	GV4231	GV4232		GV4233	GV4234		
Sampling Date		2010/08/12 09:02	2010/08/12 09:20	2010/08/12 09:43		2010/08/12 09:58	2010/08/12 10:18		
COC Number		00573301	00573301	00573301		00573301	00573301		
	Units	**SED-1**	**SED-2**	**SED-3**	**QC Batch**	**SED-4**	**SED-5**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	2240400	<0.2	<0.2	0.2	2240360
Moisture	%	13	16	18	2238813	19	3	1	2238813

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4235	GV4235	GV4236	GV4237	GV4238		
Sampling Date		2010/08/12 10:39	2010/08/12 10:39	2010/08/12 10:55	2010/08/12 11:07	2010/08/12 11:27		
COC Number		00573301	00573301	00573301	00573301	00573301		
	Units	**SED-6**	**SED-6 Lab-Dup**	**SED-7**	**SED-8**	**SED-9**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2	<0.2	<0.2	<0.2	<0.2	0.2	2240400
Moisture	%	16		14	16	21	1	2238813

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

Maxxam ID		GV4239	GV4240		GV4241		
Sampling Date		2010/08/12 11:40	2010/08/12 12:01		2010/08/12 14:23		
COC Number		00573301	00573301		00573301		
	Units	**SED-10**	**SED-D**	**QC Batch**	**SED-BG**	**RDL**	**QC Batch**
Inorganics							
Chromium (VI)	ug/g	<0.2	<0.2	2240400	<0.2	0.2	2240400
Moisture	%	6	20	2238813	17	1	2238883

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4230	GV4230	GV4231	GV4232		
Sampling Date		2010/08/12 09:02	2010/08/12 09:02	2010/08/12 09:20	2010/08/12 09:43		
COC Number		00573301	00573301	00573301	00573301		
	Units	**SED-1**	**SED-1 Lab-Dup**	**SED-2**	**SED-3**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	1.0		1.0	0.21	0.05	2240981
Acid Extractable Aluminum (Al)	ug/g	1600	1600	900	3100	50	2241103
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	0.7	0.2	2241103
Acid Extractable Arsenic (As)	ug/g	1	1	<1	1	1	2241103
Acid Extractable Barium (Ba)	ug/g	6.1	5.5	3.3	11	0.5	2241103
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2241103
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2241103
Acid Extractable Chromium (Cr)	ug/g	3	4	10	10	1	2241103
Acid Extractable Cobalt (Co)	ug/g	0.9	0.9	1.2	1.4	0.1	2241103
Acid Extractable Copper (Cu)	ug/g	10	14 (1)	4.8	14	0.5	2241103
Acid Extractable Iron (Fe)	ug/g	4600	5000	15000	6100	50	2241103
Acid Extractable Lead (Pb)	ug/g	10	10	10	28	1	2241103
Acid Extractable Manganese (Mn)	ug/g	34	31	34	66	1	2241103
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	2.0	0.5	2241103
Acid Extractable Nickel (Ni)	ug/g	1.5	2.0	2.0	3.3	0.5	2241103
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2241103
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Strontium (Sr)	ug/g	3	4	4	5	1	2241103
Acid Extractable Thallium (Tl)	ug/g	<0.05	0.09	<0.05	<0.05	0.05	2241103
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2241103
Acid Extractable Uranium (U)	ug/g	0.35	0.40	0.36	0.43	0.05	2241103
Acid Extractable Vanadium (V)	ug/g	11	12	32	12	5	2241103
Acid Extractable Zinc (Zn)	ug/g	11	11	7	25	5	2241103
Acid Extractable Mercury (Hg)	ug/g	0.05	<0.05	<0.05	<0.05	0.05	2241103

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4233	GV4234	GV4235	GV4236		
Sampling Date		2010/08/12 09:58	2010/08/12 10:18	2010/08/12 10:39	2010/08/12 10:55		
COC Number		00573301	00573301	00573301	00573301		
	Units	**SED-4**	**SED-5**	**SED-6**	**SED-7**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	1.0	0.27	0.59	0.76	0.05	2240981
Acid Extractable Aluminum (Al)	ug/g	820	930	830	850	50	2241103
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Arsenic (As)	ug/g	1	<1	<1	<1	1	2241103
Acid Extractable Barium (Ba)	ug/g	3.9	4.8	4.6	4.4	0.5	2241103
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2241103
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2241103
Acid Extractable Chromium (Cr)	ug/g	2	4	2	6	1	2241103
Acid Extractable Cobalt (Co)	ug/g	0.6	1.9	0.6	0.9	0.1	2241103
Acid Extractable Copper (Cu)	ug/g	3.2	2.6	2.1	0.7	0.5	2241103
Acid Extractable Iron (Fe)	ug/g	2900	6000	2700	9300	50	2241103
Acid Extractable Lead (Pb)	ug/g	10	3	3	2	1	2241103
Acid Extractable Manganese (Mn)	ug/g	26	32	24	31	1	2241103
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2241103
Acid Extractable Nickel (Ni)	ug/g	1.2	1.6	1.0	1.3	0.5	2241103
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2241103
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Strontium (Sr)	ug/g	2	3	3	3	1	2241103
Acid Extractable Thallium (Tl)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	2241103
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2241103
Acid Extractable Uranium (U)	ug/g	0.17	0.42	0.22	0.27	0.05	2241103
Acid Extractable Vanadium (V)	ug/g	6	14	7	21	5	2241103
Acid Extractable Zinc (Zn)	ug/g	7	6	6	<5	5	2241103
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	2241103

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4237	GV4238	GV4239	GV4240		
Sampling Date		2010/08/12 11:07	2010/08/12 11:27	2010/08/12 11:40	2010/08/12 12:01		
COC Number		00573301	00573301	00573301	00573301		
	Units	**SED-8**	**SED-9**	**SED-10**	**SED-D**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.12	0.07	0.07	0.26	0.05	2240981
Acid Extractable Aluminum (Al)	ug/g	2800	4100	6100	2900	50	2241103
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	2.7	0.2	2241103
Acid Extractable Arsenic (As)	ug/g	<1	1	<1	2	1	2241103
Acid Extractable Barium (Ba)	ug/g	15	21	46	9.1	0.5	2241103
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2241103
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2241103
Acid Extractable Chromium (Cr)	ug/g	5	8	14	4	1	2241103
Acid Extractable Cobalt (Co)	ug/g	2.3	3.5	6.1	1.3	0.1	2241103
Acid Extractable Copper (Cu)	ug/g	3.1	5.5	8.9	18	0.5	2241103
Acid Extractable Iron (Fe)	ug/g	7100	14000	22000	5700	50	2241103
Acid Extractable Lead (Pb)	ug/g	7	8	9	26	1	2241103
Acid Extractable Manganese (Mn)	ug/g	68	150	270	60	1	2241103
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2241103
Acid Extractable Nickel (Ni)	ug/g	2.9	4.6	7.4	2.6	0.5	2241103
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2241103
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2241103
Acid Extractable Strontium (Sr)	ug/g	7	6	6	4	1	2241103
Acid Extractable Thallium (Tl)	ug/g	0.05	0.10	0.25	<0.05	0.05	2241103
Acid Extractable Tin (Sn)	ug/g	<5	17	<5	9	5	2241103
Acid Extractable Uranium (U)	ug/g	0.40	0.48	0.77	0.36	0.05	2241103
Acid Extractable Vanadium (V)	ug/g	13	20	39	10	5	2241103
Acid Extractable Zinc (Zn)	ug/g	27	25	45	26	5	2241103
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	2241103

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 #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4241		
Sampling Date		2010/08/12 14:23		
COC Number		00573301		
	Units	**SED-BG**	**RDL**	**QC Batch**
Metals				
Hot Water Ext. Boron (B)	ug/g	0.06	0.05	2240981
Acid Extractable Aluminum (Al)	ug/g	3300	50	2241103
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	2241103
Acid Extractable Arsenic (As)	ug/g	<1	1	2241103
Acid Extractable Barium (Ba)	ug/g	16	0.5	2241103
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2241103
Acid Extractable Bismuth (Bi)	ug/g	<1	1	2241103
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	2241103
Acid Extractable Chromium (Cr)	ug/g	6	1	2241103
Acid Extractable Cobalt (Co)	ug/g	2.0	0.1	2241103
Acid Extractable Copper (Cu)	ug/g	3.8	0.5	2241103
Acid Extractable Iron (Fe)	ug/g	7800	50	2241103
Acid Extractable Lead (Pb)	ug/g	3	1	2241103
Acid Extractable Manganese (Mn)	ug/g	64	1	2241103
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	2241103
Acid Extractable Nickel (Ni)	ug/g	3.5	0.5	2241103
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	2241103
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2241103
Acid Extractable Strontium (Sr)	ug/g	3	1	2241103
Acid Extractable Thallium (Tl)	ug/g	0.08	0.05	2241103
Acid Extractable Tin (Sn)	ug/g	<5	5	2241103
Acid Extractable Uranium (U)	ug/g	0.44	0.05	2241103
Acid Extractable Vanadium (V)	ug/g	17	5	2241103
Acid Extractable Zinc (Zn)	ug/g	14	5	2241103
Acid Extractable Mercury (Hg)	ug/g	<0.05	0.05	2241103

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4230	GV4230	GV4231	GV4232		
Sampling Date		2010/08/12 09:02	2010/08/12 09:02	2010/08/12 09:20	2010/08/12 09:43		
COC Number		00573301	00573301	00573301	00573301		
	Units	**SED-1**	**SED-1 Lab-Dup**	**SED-2**	**SED-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237547
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237547
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237547
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237547
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237547
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237547
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237547
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237547
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237665
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	106	105	105		2237547
4-Bromofluorobenzene	%	99	97	98	98		2237547
D10-Ethylbenzene	%	101	106	106	110		2237547
D4-1,2-Dichloroethane	%	104	96	98	99		2237547
o-Terphenyl	%	107	111	107	88		2237665

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

Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4233	GV4234	GV4235	GV4236		
Sampling Date		2010/08/12 09:58	2010/08/12 10:18	2010/08/12 10:39	2010/08/12 10:55		
COC Number		00573301	00573301	00573301	00573301		
	Units	**SED-4**	**SED-5**	**SED-6**	**SED-7**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237547
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237547
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237547
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237547
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237547
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237547
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237547
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237547
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237665
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	104	105	104	104		2237547
4-Bromofluorobenzene	%	98	98	101	98		2237547
D10-Ethylbenzene	%	104	105	102	106		2237547
D4-1,2-Dichloroethane	%	99	98	106	101		2237547
o-Terphenyl	%	101	112	108	98		2237665

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
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Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4237	GV4238	GV4239	GV4240		
Sampling Date		2010/08/12 11:07	2010/08/12 11:27	2010/08/12 11:40	2010/08/12 12:01		
COC Number		00573301	00573301	00573301	00573301		
	Units	**SED-8**	**SED-9**	**SED-10**	**SED-D**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237547
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237547
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237547
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237547
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237547
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237547
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237547
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237547
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
F3 (C16-C34 Hydrocarbons)	ug/g	18	11	<10	18	10	2237665
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237665
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237665
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	105	105	107		2237547
4-Bromofluorobenzene	%	99	98	98	99		2237547
D10-Ethylbenzene	%	101	104	104	106		2237547
D4-1,2-Dichloroethane	%	99	99	98	98		2237547
o-Terphenyl	%	113	103	102	98		2237665

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0537
Report Date: 2010/08/27

Stantec Consulting Ltd
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Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4241		
Sampling Date		2010/08/12 14:23		
COC Number		00573301		
	Units	**SED-BG**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
Benzene	ug/g	<0.005	0.005	2237547
Toluene	ug/g	<0.02	0.02	2237547
Ethylbenzene	ug/g	<0.01	0.01	2237547
o-Xylene	ug/g	<0.02	0.02	2237547
p+m-Xylene	ug/g	<0.04	0.04	2237547
Total Xylenes	ug/g	<0.04	0.04	2237547
F1 (C6-C10)	ug/g	<10	10	2237547
F1 (C6-C10) - BTEX	ug/g	<10	10	2237547
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	2237665
F3 (C16-C34 Hydrocarbons)	ug/g	<10	10	2237665
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	2237665
Reached Baseline at C50	ug/g	Yes		2237665
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	106		2237547
4-Bromofluorobenzene	%	100		2237547
D10-Ethylbenzene	%	106		2237547
D4-1,2-Dichloroethane	%	100		2237547
o-Terphenyl	%	101		2237665

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0537
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Stantec Consulting Ltd
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GENERAL COMMENTS

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report

Maxxam Job Number: TB0B0537

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237547	LRA	Matrix Spike [GV4230-02]	1,4-Difluorobenzene	2010/08/18		104	%	60 - 140
			4-Bromofluorobenzene	2010/08/18		99	%	60 - 140
			D10-Ethylbenzene	2010/08/18		102	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/18		101	%	60 - 140
			Benzene	2010/08/18		83	%	60 - 140
			Toluene	2010/08/18		87	%	60 - 140
			Ethylbenzene	2010/08/18		90	%	60 - 140
			o-Xylene	2010/08/18		93	%	60 - 140
			p+m-Xylene	2010/08/18		91	%	60 - 140
			F1 (C6-C10)	2010/08/18		75	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/18		105	%	60 - 140
			4-Bromofluorobenzene	2010/08/18		98	%	60 - 140
			D10-Ethylbenzene	2010/08/18		107	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/18		98	%	60 - 140
			Benzene	2010/08/18		88	%	60 - 140
			Toluene	2010/08/18		92	%	60 - 140
			Ethylbenzene	2010/08/18		96	%	60 - 140
			o-Xylene	2010/08/18		98	%	60 - 140
			p+m-Xylene	2010/08/18		98	%	60 - 140
			F1 (C6-C10)	2010/08/18		76	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/18		101	%	60 - 140
			4-Bromofluorobenzene	2010/08/18		98	%	60 - 140
			D10-Ethylbenzene	2010/08/18		99	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/18		105	%	60 - 140
			Benzene	2010/08/18	<0.005		ug/g	
			Toluene	2010/08/18	<0.02		ug/g	
			Ethylbenzene	2010/08/18	<0.01		ug/g	
			o-Xylene	2010/08/18	<0.02		ug/g	
			p+m-Xylene	2010/08/18	<0.04		ug/g	
			Total Xylenes	2010/08/18	<0.04		ug/g	
			F1 (C6-C10)	2010/08/18	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/18	<10		ug/g	
		RPD [GV4230-02]	Benzene	2010/08/18	NC		%	50
			Toluene	2010/08/18	NC		%	50
			Ethylbenzene	2010/08/18	NC		%	50
			o-Xylene	2010/08/18	NC		%	50
			p+m-Xylene	2010/08/18	NC		%	50
			Total Xylenes	2010/08/18	NC		%	50
			F1 (C6-C10)	2010/08/18	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/18	NC		%	50
2237665	JKA	Matrix Spike [GV4230-02]	o-Terphenyl	2010/08/19		121	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/19		92	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/19		92	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/19		92	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/19		110	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/19		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/19		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/19		84	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/18		118	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/18	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/18	<10		ug/g	
		RPD [GV4230-02]	F2 (C10-C16 Hydrocarbons)	2010/08/18	NC		%	50

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0537

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237665	JKA	RPD [GV4230-02]	F3 (C16-C34 Hydrocarbons)	2010/08/18	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/18	NC		%	50
2238813	LKA	RPD	Moisture	2010/08/18	4.0		%	20
2238883	LKA	RPD	Moisture	2010/08/18	0.6		%	20
2240360	SAC	Matrix Spike	Chromium (VI)	2010/08/20		92	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/20		103	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/20	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/20	NC		%	25
2240400	SAC	Matrix Spike [GV4235-04]	Chromium (VI)	2010/08/24		102	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/24		105	%	N/A
		Spiked Blank	Chromium (VI)	2010/08/24		109	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/24	<0.2		ug/g	
		RPD [GV4235-04]	Chromium (VI)	2010/08/24	NC		%	25
2240981	JOH	QC Standard	Hot Water Ext. Boron (B)	2010/08/20		103	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/20	<0.05		ug/g	
2241103	KCO	Matrix Spike [GV4230-04]	Acid Extractable Aluminum (Al)	2010/08/23		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/23		105	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/23		102	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/23		110	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/23		94	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/23		102	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/23		103	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/23		101	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/23		102	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/23		102	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/23		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/23		116	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/23		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/23		105	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/23		102	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/23		106	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/23		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/23		105	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/23		100	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/23		105	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/23		109	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/23		103	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/23		107	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/23		114	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/20		108	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/20		107	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/20		104	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/20		106	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/20		101	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/20		106	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/20		106	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/20		104	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/20		104	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/20		102	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/20		113	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/20		106	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/20		104	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/20		106	%	75 - 125

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0537

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241103	KCO	QC Standard	Acid Extractable Nickel (Ni)	2010/08/20		104	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/20		107	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/20		105	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/20		107	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/20		105	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/20		103	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/20		105	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/20		106	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/20		105	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/20		106	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/20	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/20	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/20	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/20	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/20	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/20	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/20	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/20	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/20	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/20	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/20	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/20	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/20	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/20	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/20	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/20	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/20	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/20	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/20	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/20	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/20	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/20	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/20	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/20	<0.05		ug/g	
		RPD [GV4230-04]	Acid Extractable Aluminum (Al)	2010/08/23	0.3		%	35
			Acid Extractable Antimony (Sb)	2010/08/23	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/23	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/23	9.9		%	35
			Acid Extractable Beryllium (Be)	2010/08/23	NC		%	35
			Acid Extractable Bismuth (Bi)	2010/08/23	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/23	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/23	NC		%	35
			Acid Extractable Cobalt (Co)	2010/08/23	0.3		%	35
			Acid Extractable Copper (Cu)	2010/08/23	35.0		%	35
			Acid Extractable Iron (Fe)	2010/08/23	8.9		%	35
			Acid Extractable Lead (Pb)	2010/08/23	7.6		%	35
			Acid Extractable Manganese (Mn)	2010/08/23	8.8		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/23	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/23	NC		%	35
			Acid Extractable Selenium (Se)	2010/08/23	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/23	NC		%	35
			Acid Extractable Strontium (Sr)	2010/08/23	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/23	NC		%	35
			Acid Extractable Tin (Sn)	2010/08/23	NC		%	35
			Acid Extractable Uranium (U)	2010/08/23	14.5		%	25

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0537

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241103	KCO	RPD [GV4230-04]	Acid Extractable Vanadium (V)	2010/08/23	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/23	NC		%	35
			Acid Extractable Mercury (Hg)	2010/08/23	NC		%	35

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

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

CHAIN OF CUSTODY RECORD

Page 1 of 1

Maxxam Analytics Inc
6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Stantec	Company Name:	Quotation #: B05402	
Contact Name: Patricia Coyne	Contact Name:	P.O. #: 1236000017	CHAIN OF CUSTODY #
Address: PO Box 1680 Yellowknife NT X1A2P3	Address: Same	Project #:	00573301
Phone: 867-920-2216 Fax: 867-920-2278	Phone: Fax:	Project Name: Clyde River Phase II ESA	
Email: patricia.coyne@stantec.com	Email:	Location:	
		Sampled By: MR/PC/MN/JS	

REGULATORY CRITERIA

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

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
Sewer Use: ☐ Sanitary ☐ Storm Region:
☐ Other CCME (specify)
Report Criteria on C of A? ☐

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

ANALYSIS REQUESTED (Please be specific)

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	CCME BTEX F1-F2 (ANS)	CCME Total Metals - FWL	BAP Incld: reactive silica / Cator	CCME BTEX, F1-F4	PAHs	metals (CCME, ATL)	# of Cont.	COMMENTS / TAT COMMENTS
1	SED-1	Aug 12/10	9:02am	Soil						✓	✓	✓	3+bag	
2	SED-2	Aug 12/10	9:20am	Soil						✓	✓	✓	3+bag	
3	SED-3	Aug 12/10	9:43am	Soil						✓	✓	✓	3+bag	
4	SED-4	Aug 12/10	9:58am	Soil						✓	✓	✓	3+bag	
5	SED-5	Aug 12/10	10:18am	Soil						✓	✓	✓	3+bag	
6	SED-6	Aug 12/10	10:39am	Soil						✓	✓	✓	3+bag	
7	SED-7	Aug 12/10	10:55am	Soil						✓	✓	✓	3+bag	
8	SED-8	Aug 12/10	11:07am	Soil						✓	✓	✓	3+bag	
9	SED-9	Aug 12/10	11:27am	Soil						✓	✓	✓	3+bag	
10	SED-10	Aug 12/10	11:40am	Soil						✓	✓	✓	3+bag	
11	SED-D	Aug 12/10	12:01pm	Soil						✓	✓	✓	3+bag	
12	SED-BG	Aug 13/10	2:23pm	Soil						✓	✓	✓	3+bag	

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: ☑ 5 to 7 Working Days

Rush TAT: Rush Confirmation #: (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days

DATE Required:
TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

REC'D IN OTTAWA
16-Aug-10 11:26
JULIE CLEMENT
B0B0537
KVN OTT-014

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
Melissa Nicholson	Melissa Brown	Aug 13/10	9:20pm
		10/08/16	11:26

ONICE

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
11/9/12	☐ OK ☐ SIF

*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

ENVCOC-ONT-05/06

White: Maxxam Yellow: Mail Pink: Client

Your Project #: B0B0537

Attention: RENATA SPENA
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072683
Received: 2010/08/17, 8:45

Sample Matrix: Soil
Samples Received: 12

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	12	N/A	2010/08/20	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	12	N/A	2010/08/23	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	11	2010/08/18	2010/08/20	AB SOP-00003 AB WI-00016	EPA 3540C/8270D
Polycyclic Aromatic Hydrocarbons in soil	1	2010/08/18	2010/08/21	AB SOP-00003 AB WI-00016	EPA 3540C/8270D

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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 #: B072683
Report Date: 2010/08/23

MAXXAM ANALYTICS INC.
Client Project #: B0B0537

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W29246	W29247	W29248	W29266		
Sampling Date		2010/08/12	2010/08/12	2010/08/12	2010/08/12		
	Units	**GV4230-01R\SED-1**	**GV4231-01R\SED-2**	**GV4232-01R\SED-3**	**GV4233-01R\SED-4**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	16	16	19	19	0.3	4195143

RDL = Reportable Detection Limit

Maxxam ID		W29267	W29268		W29269	W29270		
Sampling Date		2010/08/12	2010/08/12		2010/08/12	2010/08/12		
	Units	**GV4234-01R\SED-5**	**GV4235-01R\SED-6**	**QC Batch**	**GV4236-01R\SED-7**	**GV4237-01R\SED-8**	**RDL**	**QC Batch**
Physical Properties								
Moisture	%	2.4	14	4195143	13	35	0.3	4196395

RDL = Reportable Detection Limit

Maxxam ID		W29271	W29271	W29272	W29273		
Sampling Date		2010/08/12	2010/08/12	2010/08/12	2010/08/12		
	Units	**GV4238-01R\SED-9**	**GV4238-01R\SED-9 Lab-Dup**	**GV4239-01R\SED-10**	**GV4240-01R\SED-D**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	18	21	9.7	18	0.3	4196395

RDL = Reportable Detection Limit

Maxxam ID		W29274		
Sampling Date		2010/08/12		
	Units	**GV4241-01R\SED-BG**	**RDL**	**QC Batch**
Physical Properties				
Moisture	%	19	0.3	4196395

RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W29246	W29247	W29248	W29266		
Sampling Date		2010/08/12	2010/08/12	2010/08/12	2010/08/12		
	Units	**GV4230-01R\SED-1**	**GV4231-01R\SED-2**	**GV4232-01R\SED-3**	**GV4233-01R\SED-4**	**RDL**	**QC Batch**
Polycyclic Aromatics							
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo[a]pyrene equivalency	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1	4190025
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Acridine	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	4193614
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	4193614
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Chrysene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
2-Methylnaphthalene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Naphthalene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Quinoline	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	4193614
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	105	107	109	109	N/A	4193614
D12-BENZO(A)PYRENE (sur.)	%	100	103	101	102	N/A	4193614
D8-ACENAPHTHYLENE (sur.)	%	96	100	98	98	N/A	4193614
TERPHENYL-D14 (sur.)	%	101	103	103	104	N/A	4193614

N/A = Not Applicable
RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W29267	W29268	W29269	W29270		
Sampling Date		2010/08/12	2010/08/12	2010/08/12	2010/08/12		
	Units	**GV4234-01R\SED-5**	**GV4235-01R\SED-6**	**GV4236-01R\SED-7**	**GV4237-01R\SED-8**	**RDL**	**QC Batch**
Polycyclic Aromatics							
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo[a]pyrene equivalency	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1	4190025
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Acridine	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	4193614
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	4193614
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Chrysene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
2-Methylnaphthalene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Naphthalene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4193614
Quinoline	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	4193614
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	106	111	107	109	N/A	4193614
D12-BENZO(A)PYRENE (sur.)	%	100	105	99	102	N/A	4193614
D8-ACENAPHTHYLENE (sur.)	%	97	102	98	98	N/A	4193614
TERPHENYL-D14 (sur.)	%	100	107	101	104	N/A	4193614

N/A = Not Applicable
RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W29271	W29272	W29273		
Sampling Date		2010/08/12	2010/08/12	2010/08/12		
	Units	**GV4238-01R\SED-9**	**GV4239-01R\SED-10**	**GV4240-01R\SED-D**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo[a]pyrene equivalency	mg/kg	<0.1	<0.1	<0.1	0.1	4190025
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Acridine	mg/kg	<0.010	<0.010	<0.010	0.010	4193614
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	0.0040	4193614
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Chrysene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
2-Methylnaphthalene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Naphthalene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	4193614
Quinoline	mg/kg	<0.010	<0.010	<0.010	0.010	4193614
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	108	105	108	N/A	4193614
D12-BENZO(A)PYRENE (sur.)	%	101	98	100	N/A	4193614
D8-ACENAPHTHYLENE (sur.)	%	98	95	97	N/A	4193614
TERPHENYL-D14 (sur.)	%	103	100	103	N/A	4193614

N/A = Not Applicable
RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W29274		
Sampling Date		2010/08/12		
	Units	**GV4241-01R\SED-BG**	**RDL**	**QC Batch**
Polycyclic Aromatics				
Acenaphthene	mg/kg	<0.0050	0.0050	4193614
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	4190025
Acenaphthylene	mg/kg	<0.0050	0.0050	4193614
Acridine	mg/kg	<0.010	0.010	4193614
Anthracene	mg/kg	<0.0040	0.0040	4193614
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	4193614
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	4193614
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	4193614
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	4193614
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	4193614
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	4193614
Benzo[e]pyrene	mg/kg	<0.0050	0.0050	4193614
Chrysene	mg/kg	<0.0050	0.0050	4193614
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	4193614
Fluoranthene	mg/kg	<0.0050	0.0050	4193614
Fluorene	mg/kg	<0.0050	0.0050	4193614
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	4193614
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	4193614
Naphthalene	mg/kg	<0.0050	0.0050	4193614
Phenanthrene	mg/kg	<0.0050	0.0050	4193614
Perylene	mg/kg	<0.0050	0.0050	4193614
Pyrene	mg/kg	<0.0050	0.0050	4193614
Quinoline	mg/kg	<0.010	0.010	4193614
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	105	N/A	4193614
D12-BENZO(A)PYRENE (sur.)	%	98	N/A	4193614
D8-ACENAPHTHYLENE (sur.)	%	95	N/A	4193614
TERPHENYL-D14 (sur.)	%	100	N/A	4193614

N/A = Not Applicable
RDL = Reportable Detection Limit

Package 1	2.7°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0537
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB072683

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4193614	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/21		112	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/21		102	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/21		104	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/21		111	%	30 - 130
			Acenaphthene	2010/08/21		97	%	30 - 130
			Acenaphthylene	2010/08/21		95	%	30 - 130
			Acridine	2010/08/21		39	%	30 - 130
			Anthracene	2010/08/21		88	%	30 - 130
			Benzo(a)anthracene	2010/08/21		97	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/21		100	%	30 - 130
			Benzo(k)fluoranthene	2010/08/21		90	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/21		93	%	30 - 130
			Benzo(c)phenanthrene	2010/08/21		95	%	30 - 130
			Benzo(a)pyrene	2010/08/21		96	%	30 - 130
			Benzo[e]pyrene	2010/08/21		94	%	30 - 130
			Chrysene	2010/08/21		123	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/21		104	%	30 - 130
			Fluoranthene	2010/08/21		99	%	30 - 130
			Fluorene	2010/08/21		99	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/21		93	%	30 - 130
			2-Methylnaphthalene	2010/08/21		92	%	30 - 130
			Naphthalene	2010/08/21		94	%	30 - 130
			Phenanthrene	2010/08/21		96	%	30 - 130
			Perylene	2010/08/21		88	%	30 - 130
			Pyrene	2010/08/21		99	%	30 - 130
			Quinoline	2010/08/21		100	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/21		107	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/21		104	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/21		100	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/21		103	%	30 - 130
			Acenaphthene	2010/08/21		97	%	30 - 130
			Acenaphthylene	2010/08/21		98	%	30 - 130
			Acridine	2010/08/21		54	%	30 - 130
			Anthracene	2010/08/21		90	%	30 - 130
			Benzo(a)anthracene	2010/08/21		101	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/21		110	%	30 - 130
			Benzo(k)fluoranthene	2010/08/21		96	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/21		99	%	30 - 130
			Benzo(c)phenanthrene	2010/08/21		95	%	30 - 130
			Benzo(a)pyrene	2010/08/21		104	%	30 - 130
			Benzo[e]pyrene	2010/08/21		100	%	30 - 130
			Chrysene	2010/08/21		125	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/21		108	%	30 - 130
			Fluoranthene	2010/08/21		102	%	30 - 130
			Fluorene	2010/08/21		99	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/21		101	%	30 - 130
			2-Methylnaphthalene	2010/08/21		92	%	30 - 130
			Naphthalene	2010/08/21		96	%	30 - 130
			Phenanthrene	2010/08/21		97	%	30 - 130
			Perylene	2010/08/21		95	%	30 - 130
			Pyrene	2010/08/21		101	%	30 - 130
			Quinoline	2010/08/21		119	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/20		106	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/20		98	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		97	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0537
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB072683

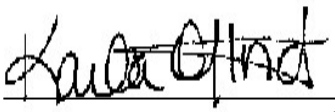
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4193614	JA3	Method Blank	TERPHENYL-D14 (sur.)	2010/08/20		100	%	30 - 130
			Acenaphthene	2010/08/20	<0.0050		mg/kg	
			Acenaphthylene	2010/08/20	<0.0050		mg/kg	
			Acridine	2010/08/20	<0.010		mg/kg	
			Anthracene	2010/08/20	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/20	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/20	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/20	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/20	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/20	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/20	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/20	<0.0050		mg/kg	
			Chrysene	2010/08/20	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/20	<0.0050		mg/kg	
			Fluoranthene	2010/08/20	<0.0050		mg/kg	
			Fluorene	2010/08/20	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/20	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/20	<0.0050		mg/kg	
			Naphthalene	2010/08/20	<0.0050		mg/kg	
			Phenanthrene	2010/08/20	<0.0050		mg/kg	
			Perylene	2010/08/20	<0.0050		mg/kg	
			Pyrene	2010/08/20	<0.0050		mg/kg	
			Quinoline	2010/08/20	<0.010		mg/kg	
		RPD	Acenaphthene	2010/08/21	NC		%	50
			Acenaphthylene	2010/08/21	NC		%	50
			Anthracene	2010/08/21	NC		%	50
			Benzo(a)anthracene	2010/08/21	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/21	NC		%	50
			Benzo(k)fluoranthene	2010/08/21	NC		%	50
			Benzo(g,h,i)perylene	2010/08/21	NC		%	50
			Benzo(a)pyrene	2010/08/21	NC		%	50
			Chrysene	2010/08/21	NC		%	50
			Dibenz(a,h)anthracene	2010/08/21	NC		%	50
			Fluoranthene	2010/08/21	NC		%	50
			Fluorene	2010/08/21	NC		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/21	NC		%	50
			Naphthalene	2010/08/21	NC		%	50
			Phenanthrene	2010/08/21	NC		%	50
			Pyrene	2010/08/21	NC		%	50
4195143	JL8	Method Blank	Moisture	2010/08/20	<0.3		%	
		RPD	Moisture	2010/08/20	10.9		%	20
4196395	JL8	Method Blank	Moisture	2010/08/20	<0.3		%	
		RPD [W29271-01]	Moisture	2010/08/20	14.1		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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 #: B072683

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



KARLA OFFORD, Senior Analyst

LISA CUMMINGS, Extractables Supervisor

==========

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

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 20066601, 200666-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/26
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B0538
Received: 2010/08/16, 11:35

Sample Matrix: Soil
Samples Received: 19

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	3	2010/08/20	2010/08/20	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (1)	3	N/A	2010/08/24	BRL SOP-00106	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	19	2010/08/17	2010/08/18	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	12	2010/08/17	2010/08/18	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	5	2010/08/17	2010/08/19	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2010/08/17	2010/08/26	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	3	2010/08/20	2010/08/20	CAM SOP-00447	EPA 6020
Moisture	19	N/A	2010/08/18	CAM SOP-00445	McKeague 2nd ed 1978

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4242	GV4243	GV4244	GV4245	GV4246		
Sampling Date		2010/08/12 16:20	2010/08/12 16:00	2010/08/12 15:25	2010/08/12 15:45	2010/08/12 16:25		
COC Number		200666-0	200666-0	200666-0	200666-0	200666-0		
	Units	**TP9.5-N0-3**	**TP10.5-NO-2**	**TP9.5-MN-2**	**TP10.5-MN-1**	**TP7-H-1**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g					<0.2	0.2	2240400
Moisture	%	11	18	15	11	71	1	2238635

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4247	GV4248	GV4249	GV4250	GV4251		
Sampling Date		2010/08/12 10:50	2010/08/12 10:50	2010/08/12 14:10	2010/08/12 13:50	2010/08/12 08:50		
COC Number		200666-0	200666-0	200666-0	200666-0	200666-0		
	Units	**TP8-H-3**	**DUP D**	**TP3-FG-3**	**TP3.5-FG-3**	**TP6.5-FG-1**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g					<0.2	0.2	2240400
Moisture	%	12	11	12	15	52	1	2238635

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4252	GV4253	GV4254	GV4255	GV4256		
Sampling Date		2010/08/12 10:25	2010/08/12 14:30	2010/08/12 13:30	2010/08/12 09:15	2010/08/12 08:45		
COC Number		200666-0	200666-0	200666-0	200666-0	200666-0		
	Units	**TP7.5-FG-3**	**TP3-F-3**	**TP4-F-2**	**TP8.5-EF-2**	**TP2-E-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g				<0.2		0.2	2240400
Moisture	%	13	6	18	14	23	1	2238635

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 #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4257	GV4258	GV4260	GV4261	GV4261		
Sampling Date		2010/08/12 15:00	2010/08/12 15:00	2010/08/12 13:00	2010/08/12 16:35	2010/08/12 16:35		
COC Number		200666-0	200666-0	200666-0	200666-0	200666-0		
	Units	**TP3-E-2**	**DUP E**	**TP4-E-3**	**TP5.5-E-3**	**TP5.5-E-3 Lab-Dup**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	9	12	14	31	32	1	2238635

RDL = Reportable Detection Limit
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Maxxam Job #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4246		GV4251	GV4255		
Sampling Date		2010/08/12 16:25		2010/08/12 08:50	2010/08/12 09:15		
COC Number		200666-0		200666-0	200666-0		
	Units	**TP7-H-1**	**QC Batch**	**TP6.5-FG-1**	**TP8.5-EF-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	2.7	2240981	0.67	0.08	0.05	2240981
Acid Extractable Aluminum (Al)	ug/g	8800	2241207	6300	3400	50	2241103
Acid Extractable Antimony (Sb)	ug/g	0.3	2241207	1.2	<0.2	0.2	2241103
Acid Extractable Arsenic (As)	ug/g	1	2241207	2	<1	1	2241103
Acid Extractable Barium (Ba)	ug/g	78	2241207	150	20	0.5	2241103
Acid Extractable Beryllium (Be)	ug/g	<0.2	2241207	<0.2	<0.2	0.2	2241103
Acid Extractable Bismuth (Bi)	ug/g	<1	2241207	<1	<1	1	2241103
Acid Extractable Cadmium (Cd)	ug/g	0.1	2241207	1.3	<0.1	0.1	2241103
Acid Extractable Chromium (Cr)	ug/g	13	2241207	16	7	1	2241103
Acid Extractable Cobalt (Co)	ug/g	9.9	2241207	8.4	2.4	0.1	2241103
Acid Extractable Copper (Cu)	ug/g	20	2241207	74	3.4	0.5	2241103
Acid Extractable Iron (Fe)	ug/g	16000	2241207	15000	9200	50	2241103
Acid Extractable Lead (Pb)	ug/g	38	2241207	1200	7	1	2241103
Acid Extractable Manganese (Mn)	ug/g	810	2241207	560	86	1	2241103
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2241207	<0.5	<0.5	0.5	2241103
Acid Extractable Nickel (Ni)	ug/g	9.2	2241207	22	3.9	0.5	2241103
Acid Extractable Selenium (Se)	ug/g	<0.5	2241207	<0.5	<0.5	0.5	2241103
Acid Extractable Silver (Ag)	ug/g	<0.2	2241207	<0.2	<0.2	0.2	2241103
Acid Extractable Strontium (Sr)	ug/g	22	2241207	21	3	1	2241103
Acid Extractable Thallium (Tl)	ug/g	0.23	2241207	0.14	0.11	0.05	2241103
Acid Extractable Tin (Sn)	ug/g	<5	2241207	5	<5	5	2241103
Acid Extractable Uranium (U)	ug/g	1.2	2241207	0.68	0.55	0.05	2241103
Acid Extractable Vanadium (V)	ug/g	29	2241207	21	18	5	2241103
Acid Extractable Zinc (Zn)	ug/g	59	2241207	1500	20	5	2241103
Acid Extractable Mercury (Hg)	ug/g	0.10	2241207	0.36	<0.05	0.05	2241103

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4242	GV4242	GV4243	GV4244		
Sampling Date		2010/08/12 16:20	2010/08/12 16:20	2010/08/12 16:00	2010/08/12 15:25		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**TP9.5-N0-3**	**TP9.5-N0-3 Lab-Dup**	**TP10.5-NO-2**	**TP9.5-MN-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237632
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237632
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237632
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237632
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237632
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237632
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237632
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237632
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	270	10	2237659
F3 (C16-C34 Hydrocarbons)	ug/g	26	22	78	97	10	2237659
F4 (C34-C50 Hydrocarbons)	ug/g	19	10	41	33	10	2237659
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237659
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	105	104	102	106		2237632
4-Bromofluorobenzene	%	98	98	98	98		2237632
D10-Ethylbenzene	%	104	108	112	110		2237632
D4-1,2-Dichloroethane	%	99	97	98	98		2237632
o-Terphenyl	%	99	97	104	96		2237659

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4245		GV4246		GV4247	GV4248		
Sampling Date		2010/08/12 15:45		2010/08/12 16:25		2010/08/12 10:50	2010/08/12 10:50		
COC Number		200666-0		200666-0		200666-0	200666-0		
	Units	**TP10.5-MN-1**	**RDL**	**TP7-H-1**	**RDL**	**TP8-H-3**	**DUP D**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/g	<0.005	0.005	<0.02	0.02	<0.005	<0.005	0.005	2237632
Toluene	ug/g	<0.02	0.02	<0.06	0.06	<0.02	<0.02	0.02	2237632
Ethylbenzene	ug/g	<0.01	0.01	<0.03	0.03	<0.01	<0.01	0.01	2237632
o-Xylene	ug/g	<0.02	0.02	<0.06	0.06	<0.02	<0.02	0.02	2237632
p+m-Xylene	ug/g	<0.04	0.04	<0.1	0.1	<0.04	<0.04	0.04	2237632
Total Xylenes	ug/g	<0.04	0.04	<0.1	0.1	<0.04	<0.04	0.04	2237632
F1 (C6-C10)	ug/g	<10	10	<30	30	<10	<10	10	2237632
F1 (C6-C10) - BTEX	ug/g	<10	10	<30	30	<10	<10	10	2237632
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	<30	30	<10	<10	10	2237659
F3 (C16-C34 Hydrocarbons)	ug/g	45	10	260	30	33	63	10	2237659
F4 (C34-C50 Hydrocarbons)	ug/g	18	10	210	30	16	29	10	2237659
Reached Baseline at C50	ug/g	Yes		No		Yes	Yes		2237659
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	104		100		108	105		2237632
4-Bromofluorobenzene	%	100		99		101	98		2237632
D10-Ethylbenzene	%	108		109		108	107		2237632
D4-1,2-Dichloroethane	%	101		98		99	97		2237632
o-Terphenyl	%	89		103		96	97		2237659

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4249	GV4250		GV4251		GV4252		
Sampling Date		2010/08/12 14:10	2010/08/12 13:50		2010/08/12 08:50		2010/08/12 10:25		
COC Number		200666-0	200666-0		200666-0		200666-0		
	Units	**TP3-FG-3**	**TP3.5-FG-3**	**RDL**	**TP6.5-FG-1**	**RDL**	**TP7.5-FG-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons									
Benzene	ug/g	<0.005	<0.005	0.005	0.10	0.01	<0.005	0.005	2237632
Toluene	ug/g	<0.02	<0.02	0.02	<0.04	0.04	<0.02	0.02	2237632
Ethylbenzene	ug/g	<0.01	<0.01	0.01	<0.02	0.02	<0.01	0.01	2237632
o-Xylene	ug/g	<0.02	<0.02	0.02	<0.04	0.04	<0.02	0.02	2237632
p+m-Xylene	ug/g	<0.04	<0.04	0.04	<0.08	0.08	<0.04	0.04	2237632
Total Xylenes	ug/g	<0.04	<0.04	0.04	<0.08	0.08	<0.04	0.04	2237632
F1 (C6-C10)	ug/g	<10	<10	10	<20	20	<10	10	2237632
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	<20	20	<10	10	2237632
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	40	20	<10	10	2237659
F3 (C16-C34 Hydrocarbons)	ug/g	63	91	10	200	20	38	10	2237659
F4 (C34-C50 Hydrocarbons)	ug/g	32	46	10	70	20	19	10	2237659
Reached Baseline at C50	ug/g	Yes	Yes		Yes		Yes		2237659
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	106	101		106		107		2237632
4-Bromofluorobenzene	%	97	97		98		100		2237632
D10-Ethylbenzene	%	103	104		100		110		2237632
D4-1,2-Dichloroethane	%	97	97		97		99		2237632
o-Terphenyl	%	94	95		83		86		2237659

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0538
Report Date: 2010/08/26

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4253	GV4254	GV4255	GV4256		
Sampling Date		2010/08/12 14:30	2010/08/12 13:30	2010/08/12 09:15	2010/08/12 08:45		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**TP3-F-3**	**TP4-F-2**	**TP8.5-EF-2**	**TP2-E-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237632
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237632
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237632
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237632
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237632
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237632
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237632
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237632
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237659
F3 (C16-C34 Hydrocarbons)	ug/g	<10	68	22	180	10	2237659
F4 (C34-C50 Hydrocarbons)	ug/g	<10	39	<10	58	10	2237659
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237659
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	105	108	106	102		2237632
4-Bromofluorobenzene	%	98	100	98	99		2237632
D10-Ethylbenzene	%	107	114	106	110		2237632
D4-1,2-Dichloroethane	%	99	99	98	97		2237632
o-Terphenyl	%	84	92	90	100		2237659

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Maxxam Job #: B0B0538
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Stantec Consulting Ltd
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Sampler Initials: MR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4257	GV4258	GV4260	GV4261		
Sampling Date		2010/08/12 15:00	2010/08/12 15:00	2010/08/12 13:00	2010/08/12 16:35		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**TP3-E-2**	**DUP E**	**TP4-E-3**	**TP5.5-E-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237632
Toluene	ug/g	<0.02	<0.02	<0.02	0.11	0.02	2237632
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237632
o-Xylene	ug/g	<0.02	0.06	<0.02	<0.02	0.02	2237632
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237632
Total Xylenes	ug/g	<0.04	0.06	<0.04	<0.04	0.04	2237632
F1 (C6-C10)	ug/g	15	<10	<10	<10	10	2237632
F1 (C6-C10) - BTEX	ug/g	15	<10	<10	<10	10	2237632
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	640	24	<10	<10	10	2237659
F3 (C16-C34 Hydrocarbons)	ug/g	200	21	130	260	10	2237659
F4 (C34-C50 Hydrocarbons)	ug/g	23	<10	52	130	10	2237659
Reached Baseline at C50	ug/g	Yes	Yes	No	No		2237659
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	99	105	108	101		2237632
4-Bromofluorobenzene	%	102	99	97	98		2237632
D10-Ethylbenzene	%	107	107	110	101		2237632
D4-1,2-Dichloroethane	%	96	98	97	98		2237632
o-Terphenyl	%	84	85	78	94		2237659

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GENERAL COMMENTS

Sample GV4246-01: F1/BTEX and F2-F4 Analysis:
Detection limits were adjusted for moisture content.
F2-F4 Analysis.
Triple silica clean up procedure was adopted according to client request.

Sample GV4251-01: F1/BTEX and F2-F4 Analysis:
Detection limits were adjusted for moisture content.

F2-F4 Analysis.
Triple silica clean up procedure was adopted according to client request.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report

Maxxam Job Number: TB0B0538

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237632	LRA	Matrix Spike						
		[GV4242-01]	1,4-Difluorobenzene	2010/08/18		106	%	60 - 140
			4-Bromofluorobenzene	2010/08/18		99	%	60 - 140
			D10-Ethylbenzene	2010/08/18		109	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/18		100	%	60 - 140
			Benzene	2010/08/18		93	%	60 - 140
			Toluene	2010/08/18		99	%	60 - 140
			Ethylbenzene	2010/08/18		103	%	60 - 140
			o-Xylene	2010/08/18		105	%	60 - 140
			p+m-Xylene	2010/08/18		104	%	60 - 140
			F1 (C6-C10)	2010/08/18		85	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/18		107	%	60 - 140
			4-Bromofluorobenzene	2010/08/18		98	%	60 - 140
			D10-Ethylbenzene	2010/08/18		105	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/18		97	%	60 - 140
			Benzene	2010/08/18		89	%	60 - 140
			Toluene	2010/08/18		94	%	60 - 140
			Ethylbenzene	2010/08/18		99	%	60 - 140
			o-Xylene	2010/08/18		100	%	60 - 140
			p+m-Xylene	2010/08/18		101	%	60 - 140
			F1 (C6-C10)	2010/08/18		85	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/18		102	%	60 - 140
			4-Bromofluorobenzene	2010/08/18		99	%	60 - 140
			D10-Ethylbenzene	2010/08/18		109	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/18		99	%	60 - 140
			Benzene	2010/08/18	<0.005		ug/g	
			Toluene	2010/08/18	<0.02		ug/g	
			Ethylbenzene	2010/08/18	<0.01		ug/g	
			o-Xylene	2010/08/18	<0.02		ug/g	
			p+m-Xylene	2010/08/18	<0.04		ug/g	
			Total Xylenes	2010/08/18	<0.04		ug/g	
			F1 (C6-C10)	2010/08/18	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/18	<10		ug/g	
		RPD [GV4242-01]	Benzene	2010/08/18	NC		%	50
			Toluene	2010/08/18	NC		%	50
			Ethylbenzene	2010/08/18	NC		%	50
			o-Xylene	2010/08/18	NC		%	50
			p+m-Xylene	2010/08/18	NC		%	50
			Total Xylenes	2010/08/18	NC		%	50
			F1 (C6-C10)	2010/08/18	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/18	NC		%	50
2237659	JJE	Matrix Spike						
		[GV4242-01]	o-Terphenyl	2010/08/18		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18		92	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/18		92	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/18		92	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/18		91	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18		84	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/18		84	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/18		84	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/18		101	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/18	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/18	<10		ug/g	
		RPD [GV4242-01]	F2 (C10-C16 Hydrocarbons)	2010/08/18	NC		%	50

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Stantec Consulting Ltd
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Client Project #: 123600017
P.O. #: 16300NR
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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0538

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237659	JJE	RPD [GV4242-01]	F3 (C16-C34 Hydrocarbons)	2010/08/18	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/18	NC		%	50
2238635	LKA	RPD [GV4261-01]	Moisture	2010/08/18	3.5		%	20
2240400	SAC	Matrix Spike	Chromium (VI)	2010/08/24		102	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/24		105	%	N/A
		Spiked Blank	Chromium (VI)	2010/08/24		109	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/24	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/24	NC		%	25
2240981	JOH	QC Standard	Hot Water Ext. Boron (B)	2010/08/20		103	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/20	<0.05		ug/g	
2241103	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/23		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/23		105	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/23		102	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/23		110	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/23		94	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/23		102	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/23		103	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/23		101	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/23		102	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/23		102	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/23		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/23		116	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/23		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/23		105	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/23		102	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/23		106	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/23		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/23		105	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/23		100	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/23		105	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/23		109	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/23		103	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/23		107	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/23		114	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/20		108	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/20		107	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/20		104	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/20		106	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/20		101	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/20		106	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/20		106	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/20		104	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/20		104	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/20		102	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/20		113	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/20		106	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/20		104	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/20		106	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/20		104	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/20		107	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/20		105	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/20		107	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/20		105	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/20		103	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/20		105	%	75 - 125

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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0538

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241103	KCO	QC Standard	Acid Extractable Vanadium (V)	2010/08/20		106	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/20		105	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/20		106	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/20	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/20	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/20	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/20	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/20	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/20	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/20	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/20	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/20	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/20	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/20	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/20	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/20	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/20	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/20	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/20	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/20	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/20	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/20	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/20	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/20	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/20	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/20	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/20	<0.05		ug/g	
		RPD	Acid Extractable Aluminum (Al)	2010/08/23	0.3		%	35
			Acid Extractable Antimony (Sb)	2010/08/23	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/23	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/23	9.9		%	35
			Acid Extractable Beryllium (Be)	2010/08/23	NC		%	35
			Acid Extractable Bismuth (Bi)	2010/08/23	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/23	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/23	NC		%	35
			Acid Extractable Cobalt (Co)	2010/08/23	0.3		%	35
			Acid Extractable Copper (Cu)	2010/08/23	35.0		%	35
			Acid Extractable Iron (Fe)	2010/08/23	8.9		%	35
			Acid Extractable Lead (Pb)	2010/08/23	7.6		%	35
			Acid Extractable Manganese (Mn)	2010/08/23	8.8		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/23	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/23	NC		%	35
			Acid Extractable Selenium (Se)	2010/08/23	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/23	NC		%	35
			Acid Extractable Strontium (Sr)	2010/08/23	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/23	NC		%	35
			Acid Extractable Tin (Sn)	2010/08/23	NC		%	35
			Acid Extractable Uranium (U)	2010/08/23	14.5		%	25
			Acid Extractable Vanadium (V)	2010/08/23	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/23	NC		%	35
			Acid Extractable Mercury (Hg)	2010/08/23	NC		%	35
2241207	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/20		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/20		100	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/20		96	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/20		NC (1)	%	75 - 125

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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0538

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241207	KCO	Matrix Spike	Acid Extractable Beryllium (Be)	2010/08/20		93	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/20		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/20		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/20		96	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/20		95	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/20		95	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/20		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/20		99	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/20		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/20		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/20		95	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/20		97	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/20		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/20		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/20		96	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/20		103	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/20		98	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/20		102	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/20		96	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/20		102	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/20		100	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/20		102	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/20		97	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/20		99	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/20		98	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/20		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/20		100	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/20		98	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/20		97	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/20		94	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/20		107	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/20		100	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/20		101	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/20		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/20		96	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/20		97	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/20		101	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/20		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/20		97	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/20		101	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/20		99	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/20		104	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/20		99	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/20		105	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/23	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/23	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/23	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/23	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/23	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/23	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/23	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/23	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/23	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/23	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/23	<50		ug/g	

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0538

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241207	KCO	Method Blank	Acid Extractable Lead (Pb)	2010/08/23	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/23	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/23	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/23	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/23	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/23	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/23	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/23	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/23	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/23	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/23	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/23	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/23	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/23	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/23	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/23	6.7		%	35
			Acid Extractable Beryllium (Be)	2010/08/23	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/23	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/23	3.7		%	35
			Acid Extractable Cobalt (Co)	2010/08/23	0.6		%	35
			Acid Extractable Copper (Cu)	2010/08/23	5.9		%	35
			Acid Extractable Lead (Pb)	2010/08/23	NC		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/23	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/23	2.0		%	35
			Acid Extractable Selenium (Se)	2010/08/23	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/23	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/23	NC		%	35
			Acid Extractable Vanadium (V)	2010/08/23	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/23	NC		%	35

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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). Spiked concentration was less than 2x that native to the sample.

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Maxxam Analytics

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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200666
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680	Address:		Project #:	123600017 ~~RCAP~~	CHAIN OF CUSTODY #:	PROJECT MANAGER:
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III ESA	C#200666-01-01	RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	MR/MN/PC/JS.		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify): CCME CWS. — Report Criteria on C of A ? ☐

Reg. 153: ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: ____ Time Required: ____
Rush Confirmation Number: ____ *(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 BTEX/F1-F4	Metals (CCME, ATI)	PAHs	Extract and hold for BTEX/F1-F4	HOLD (Metals)	# of Bottles	Comments
1		TP9.5-NO-3	Aug12/10	1620	soil			✓					3	
2		TP10.5-NO-2	Aug12/10	16:20	soil			✓					3	
3		TP9.5-MN-2	Aug12/10	15:25	soil			✓					3	
4		TP10.5-MN-B1	Aug12/10	15:45	soil			✓					3	
5		TP7-H-1	Aug12/10	10:25	soil			✓	✓				4	
6		TP8-H-3	Aug12/10	10:50	soil			✓					3	
7		DUP D	Aug12/10	10:50	soil			✓					3	
8		TP3-FG-3	Aug12/10	14:10	soil			✓					3	
9		TP3.5-FG-3	Aug12/10	13:50	soil			✓					3	
10		TP6.5-FG-1	Aug12/10	0850	soil			✓	✓				4	

16-Aug-10 11:35
RENATA SPENA
B0B0538
J_R OTT-014

*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 Intact (Yes/No)
Patricia Coyne	10/08/13	1900	K Steven	10/08/16	11:35		[X]	9.9.9	☐ 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

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CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	Same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200666
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680	Address:		Project #:	123600017 ~~RCAP~~	CHAIN OF CUSTODY #:	PROJECT MANAGER:
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III 25A	C#200666-01-01	RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	PC/MN/MR/JS.		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify) CCME CWS — Report Criteria on C of A ? ☐

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required:
Rush Confirmation Number: *(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 BTEX/F1-F4	CCME metals (ABTL)	PAHs	Extract and Hold for BTEX/F1-F4	Hold for Metals	# of Bottles	Comments
1		TP7.5-FG-3	Aug12/10	10:25	soil			✓					3	
2		TP3-F-3	Aug12/10	14:30	soil			✓					3	
3		TP4-F-2	Aug12/10	1330	soil			✓					3	
4		TP8.5-EF-2	Aug12/10	0915	soil			✓	✓				4	
5		TP2-E-2	Aug12/10	0845	soil			✓					3	
6		TP3-E-2	Aug12/10	1500	soil			✓					3	
7		FF DUPE	Aug12/10	1500	soil			✓					3	
8		TP3-E-3	Aug12/10	1505	soil							✓	3	
9		TP4-E-3	Aug12/10	1300	soil			✓					3	
10		TP5.5-E-3	Aug12/10	1635	soil			✓					3	

*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 Intact on Cooler?
Patricia Coyne Patricia Coyne	10/08/13	2100	[signature]	10/08/16	11:35		[X]	9.9.9	☐ 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 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PH III ESA
Your C.O.C. #: 00573302

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B0540
Received: 2010/08/16, 11:26

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	3	N/A	2010/08/18	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	3	N/A	2010/08/19		
Chloride by Automated Colourimetry	3	N/A	2010/08/19	CAM SOP-00463	SM 4500 Cl E
Colour	3	N/A	2010/08/18	CAM SOP-00412	APHA 2120
Conductivity	3	N/A	2010/08/18	CAM SOP-00448	SM 2510
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2010/08/18	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (1)	3	2010/08/17	2010/08/17	CAM SOP-00316	CCME Hydrocarbons
Hardness (calculated as CaCO3)	3	N/A	2010/08/19	CAM SOP 00102	SM 2340 B
Lab Filtered Metals Analysis by ICP	3	2010/08/18	2010/08/19	CAM SOP-00408	EPA 6010
Total Metals Analysis by ICPMS	3	N/A	2010/08/20	CAM SOP-00447	EPA 6020
Ammonia-N	3	N/A	2010/08/20	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (2)	3	N/A	2010/08/19	CAM SOP-00440	SM 4500 NO3I/NO2B
pH	3	N/A	2010/08/18	CAM SOP-00448	SM 4500H
Orthophosphate	3	N/A	2010/08/19	CAM SOP-00461	SM 4500 P-F
Sat. pH and Langelier Index (@ 20C)	3	N/A	2010/08/19		
Sat. pH and Langelier Index (@ 4C)	3	N/A	2010/08/19		
Sulphate by Automated Colourimetry	3	N/A	2010/08/19	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	3	N/A	2010/08/19		
Total Organic Carbon (TOC)	3	N/A	2010/08/19	CAM SOP-00446	EPA 415.1 modified
Total Phosphorus (Colourimetric)	2	2010/08/19	2010/08/20	CAM SOP-00407	APHA 4500 P,B,F
Total Phosphorus (Colourimetric)	1	2010/08/20	2010/08/20	CAM SOP-00407	SM 4500 P,B,F
Turbidity	3	N/A	2010/08/18	CAM SOP-00417	APHA 2130B

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

(1) This test was performed by Maxxam Ottawa
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

../2

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PH III ESA
Your C.O.C. #: 00573302

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0B0540
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

RESULTS OF ANALYSES OF WATER

Maxxam ID		GV4264	GV4264	GV4265	GV4265		
Sampling Date		2010/08/13 09:05	2010/08/13 09:05	2010/08/13 11:20	2010/08/13 11:20		
COC Number		00573302	00573302	00573302	00573302		
	Units	**CW-D**	**CW-D Lab-Dup**	**CW-BG**	**CW-BG Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	5		2		1	2235911
Calculated TDS	mg/L	55		32		1	2235920
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1		<1		1	2235911
Hardness (CaCO3)	mg/L	20		12		1	2235913
Langelier Index (@ 20C)	N/A	-3.53		-4.51			2235918
Langelier Index (@ 4C)	N/A	-3.78		-4.76			2235919
Saturation pH (@ 20C)	N/A	10.1		10.7			2235918
Saturation pH (@ 4C)	N/A	10.4		11.0			2235919
Inorganics							
Total Ammonia-N	mg/L	<0.05		<0.05		0.05	2239441
Colour	TCU	5		6	6	2	2238473
Conductivity	umho/cm	115		68		1	2238465
Total Organic Carbon (TOC)	mg/L	2.0		1.7		0.2	2239510
Orthophosphate (P)	mg/L	<0.01		<0.01		0.01	2238484
pH	pH	6.6		6.2			2238464
Total Phosphorus	mg/L	<0.002		<0.002		0.002	2239762
Dissolved Sulphate (SO4)	mg/L	5		1		1	2238490
Turbidity	NTU	0.6	0.6	0.3		0.1	2238360
Alkalinity (Total as CaCO3)	mg/L	5		2		1	2238437
Dissolved Chloride (Cl)	mg/L	26		17		1	2238477
Nitrite (N)	mg/L	<0.01		<0.01		0.01	2238421
Nitrate (N)	mg/L	<0.1		<0.1		0.1	2238421

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

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Maxxam Job #: B0B0540
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

RESULTS OF ANALYSES OF WATER

Maxxam ID		GV4266		
Sampling Date		2010/08/13 14:30		
COC Number		00573302		
	Units	**CW-4**	**RDL**	**QC Batch**
Calculated Parameters				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	480	1	2235911
Calculated TDS	mg/L	1210	1	2235920
Carb. Alkalinity (calc. as CaCO3)	mg/L	196	1	2235911
Hardness (CaCO3)	mg/L	47	1	2235913
Langelier Index (@ 20C)	N/A	1.83		2235918
Langelier Index (@ 4C)	N/A	1.58		2235919
Saturation pH (@ 20C)	N/A	7.81		2235918
Saturation pH (@ 4C)	N/A	8.06		2235919
Inorganics				
Total Ammonia-N	mg/L	0.87	0.05	2239441
Colour	TCU	1100	30	2238473
Conductivity	umho/cm	2060	1	2238465
Total Organic Carbon (TOC)	mg/L	148	4	2239510
Orthophosphate (P)	mg/L	0.9	0.5	2238484
pH	pH	9.6		2238464
Total Phosphorus	mg/L	3.4	0.2	2239966
Dissolved Sulphate (SO4)	mg/L	58	50	2238490
Turbidity	NTU	230	0.1	2238360
Alkalinity (Total as CaCO3)	mg/L	678	1	2238437
Dissolved Chloride (Cl)	mg/L	180	50	2238477
Nitrite (N)	mg/L	<0.1	0.1	2238421
Nitrate (N)	mg/L	<1	1	2238421

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0540
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GV4264	GV4265		GV4266		
Sampling Date		2010/08/13 09:05	2010/08/13 11:20		2010/08/13 14:30		
COC Number		00573302	00573302		00573302		
	Units	**CW-D**	**CW-BG**	**RDL**	**CW-4**	**RDL**	**QC Batch**
Metals							
Dissolved Calcium (Ca)	mg/L	3.33	1.84	0.05	8.6	0.5	2238277
Dissolved Magnesium (Mg)	mg/L	2.89	1.73	0.05	6.3	0.5	2238277
Dissolved Potassium (K)	mg/L	2	<1	1	15	10	2238277
Dissolved Sodium (Na)	mg/L	11.0	6.5	0.5	445	5	2238277
Total Aluminum (Al)	ug/L	39	32	5	27000	50	2240276
Total Antimony (Sb)	ug/L	<0.5	<0.5	0.5	<5	5	2240276
Total Arsenic (As)	ug/L	<1	<1	1	28	10	2240276
Total Barium (Ba)	ug/L	6	6	5	140	50	2240276
Total Beryllium (Be)	ug/L	<0.5	<0.5	0.5	<5	5	2240276
Total Boron (B)	ug/L	10	<10	10	640	100	2240276
Total Cadmium (Cd)	ug/L	<0.1	<0.1	0.1	<1	1	2240276
Total Calcium (Ca)	ug/L	3400	2000	200	18000	2000	2240276
Total Chromium (Cr)	ug/L	<5	<5	5	<50	50	2240276
Total Cobalt (Co)	ug/L	<0.5	<0.5	0.5	16	5	2240276
Total Copper (Cu)	ug/L	2	<1	1	420	10	2240276
Total Iron (Fe)	ug/L	<100	<100	100	21000	1000	2240276
Total Lead (Pb)	ug/L	<0.5	<0.5	0.5	83	5	2240276
Total Magnesium (Mg)	ug/L	2700	1700	50	14000	500	2240276
Total Manganese (Mn)	ug/L	<2	<2	2	350	20	2240276
Total Molybdenum (Mo)	ug/L	<1	<1	1	31	10	2240276
Total Nickel (Ni)	ug/L	<1	<1	1	65	10	2240276
Total Potassium (K)	ug/L	860	410	200	15000	2000	2240276
Total Selenium (Se)	ug/L	<2	<2	2	<20	20	2240276
Total Silicon (Si)	ug/L	820	970	50	39000	500	2240276
Total Silver (Ag)	ug/L	<0.1	<0.1	0.1	<1	1	2240276
Total Sodium (Na)	ug/L	11000	6500	100	650000	1000	2240276
Total Strontium (Sr)	ug/L	27	16	1	140	10	2240276
Total Thallium (Tl)	ug/L	<0.05	<0.05	0.05	1.1	0.5	2240276
Total Titanium (Ti)	ug/L	<5	<5	5	2000	50	2240276
Total Uranium (U)	ug/L	<0.1	<0.1	0.1	26	1	2240276
Total Vanadium (V)	ug/L	<1	<1	1	130	10	2240276

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Maxxam Job #: B0B0540
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GV4264	GV4265		GV4266		
Sampling Date		2010/08/13 09:05	2010/08/13 11:20		2010/08/13 14:30		
COC Number		00573302	00573302		00573302		
	Units	**CW-D**	**CW-BG**	**RDL**	**CW-4**	**RDL**	**QC Batch**
Total Zinc (Zn)	ug/L	7	<5	5	96	50	2240276

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Report Date: 2010/08/27

Stantec Consulting Ltd
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Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4264	GV4265	GV4266		
Sampling Date		2010/08/13 09:05	2010/08/13 11:20	2010/08/13 14:30		
COC Number		00573302	00573302	00573302		
	Units	**CW-D**	**CW-BG**	**CW-4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/L	<0.2	<0.2	<0.2	0.2	2237481
Toluene	ug/L	<0.2	<0.2	0.9	0.2	2237481
Ethylbenzene	ug/L	<0.2	<0.2	0.7	0.2	2237481
o-Xylene	ug/L	<0.2	<0.2	2.8	0.2	2237481
p+m-Xylene	ug/L	<0.4	<0.4	3.0	0.4	2237481
Total Xylenes	ug/L	<0.4	<0.4	5.8	0.4	2237481
F1 (C6-C10)	ug/L	<100	<100	<100	100	2237481
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	100	2237481
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	100	2236952
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	79	80	78		2237481
4-Bromofluorobenzene	%	101	100	102		2237481
D10-Ethylbenzene	%	118	117	114		2237481
D4-1,2-Dichloroethane	%	83	80	81		2237481
o-Terphenyl	%	94	82	91		2236952

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QC Batch = Quality Control Batch

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Project name: CLYDE RIVER PH III ESA
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GENERAL COMMENTS

Sample GV4266-01: Nitrite/Nitrate: Due to colour interferences, sample required dilution. Detection limit was adjusted accordingly.
Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PH III ESA

Quality Assurance Report

Maxxam Job Number: TB0B0540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2236952	LHR	Matrix Spike						
		[GV4264-07]	o-Terphenyl	2010/08/17		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/17		108	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/17		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/17		100	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/17		92	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/17	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/17	24.6		%	50
2237481	PRB	Matrix Spike						
		[GV4264-08]	1,4-Difluorobenzene	2010/08/18		78	%	70 - 130
			4-Bromofluorobenzene	2010/08/18		105	%	70 - 130
			D10-Ethylbenzene	2010/08/18		124	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/18		75	%	70 - 130
			Benzene	2010/08/18		107	%	70 - 130
			Toluene	2010/08/18		107	%	70 - 130
			Ethylbenzene	2010/08/18		119	%	70 - 130
			o-Xylene	2010/08/18		122	%	70 - 130
			p+m-Xylene	2010/08/18		107	%	70 - 130
			F1 (C6-C10)	2010/08/18		102	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2010/08/18		80	%	70 - 130
			4-Bromofluorobenzene	2010/08/18		105	%	70 - 130
			D10-Ethylbenzene	2010/08/18		124	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/18		73	%	70 - 130
			Benzene	2010/08/18		106	%	70 - 130
			Toluene	2010/08/18		106	%	70 - 130
			Ethylbenzene	2010/08/18		117	%	70 - 130
			o-Xylene	2010/08/18		119	%	70 - 130
			p+m-Xylene	2010/08/18		105	%	70 - 130
			F1 (C6-C10)	2010/08/18		102	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2010/08/18		82	%	70 - 130
			4-Bromofluorobenzene	2010/08/18		96	%	70 - 130
			D10-Ethylbenzene	2010/08/18		121	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/18		77	%	70 - 130
			Benzene	2010/08/18	<0.2		ug/L	
			Toluene	2010/08/18	<0.2		ug/L	
			Ethylbenzene	2010/08/18	<0.2		ug/L	
			o-Xylene	2010/08/18	<0.2		ug/L	
			p+m-Xylene	2010/08/18	<0.4		ug/L	
			Total Xylenes	2010/08/18	<0.4		ug/L	
			F1 (C6-C10)	2010/08/18	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/08/18	<100		ug/L	
		RPD	Benzene	2010/08/18	NC		%	40
			Toluene	2010/08/18	NC		%	40
			Ethylbenzene	2010/08/18	NC		%	40
			o-Xylene	2010/08/18	NC		%	40
			p+m-Xylene	2010/08/18	NC		%	40
			Total Xylenes	2010/08/18	NC		%	40
			F1 (C6-C10)	2010/08/18	NC		%	40
			F1 (C6-C10) - BTEX	2010/08/18	NC		%	40
2238277	JOH	Matrix Spike	Dissolved Calcium (Ca)	2010/08/19		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2010/08/19		98	%	80 - 120
			Dissolved Potassium (K)	2010/08/19		99	%	80 - 120
			Dissolved Sodium (Na)	2010/08/19		NC	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2010/08/19		96	%	90 - 110
			Dissolved Magnesium (Mg)	2010/08/19		94	%	90 - 110

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
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Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2238277	JOH	Spiked Blank	Dissolved Potassium (K)	2010/08/19		101	%	90 - 110
			Dissolved Sodium (Na)	2010/08/19		100	%	90 - 110
		Method Blank	Dissolved Calcium (Ca)	2010/08/19	<0.05		mg/L	
			Dissolved Magnesium (Mg)	2010/08/19	<0.05		mg/L	
			Dissolved Potassium (K)	2010/08/19	<1		mg/L	
			Dissolved Sodium (Na)	2010/08/19	<0.5		mg/L	
		RPD	Dissolved Calcium (Ca)	2010/08/19	1.2		%	25
			Dissolved Magnesium (Mg)	2010/08/19	1.5		%	25
			Dissolved Potassium (K)	2010/08/19	NC		%	25
			Dissolved Sodium (Na)	2010/08/19	0.3		%	25
2238360	PAL	QC Standard	Turbidity	2010/08/18		100	%	85 - 115
		Method Blank	Turbidity		TBA		NTU	
		RPD [GV4264-03]	Turbidity	2010/08/18	3.3		%	25
2238421	C_N	Matrix Spike	Nitrite (N)	2010/08/19		105	%	80 - 120
			Nitrate (N)	2010/08/19		104	%	80 - 120
		Spiked Blank	Nitrite (N)	2010/08/19		108	%	85 - 115
			Nitrate (N)	2010/08/19		106	%	85 - 115
		Method Blank	Nitrite (N)	2010/08/19	<0.01		mg/L	
			Nitrate (N)	2010/08/19	<0.1		mg/L	
		RPD	Nitrite (N)	2010/08/19	NC		%	25
			Nitrate (N)	2010/08/19	NC		%	25
2238437	PAL	QC Standard	Alkalinity (Total as CaCO3)	2010/08/18		96	%	85 - 115
		Method Blank	Alkalinity (Total as CaCO3)	2010/08/18	<1		mg/L	
		RPD	Alkalinity (Total as CaCO3)	2010/08/18	NC		%	25
2238465	PAL	QC Standard	Conductivity	2010/08/18		104	%	85 - 115
		Method Blank	Conductivity	2010/08/18	<1		umho/cm	
		RPD	Conductivity	2010/08/18	NC		%	25
2238473	KTH	Spiked Blank	Colour	2010/08/18		97	%	75 - 125
		Method Blank	Colour	2010/08/18	<2		TCU	
		RPD [GV4265-03]	Colour	2010/08/18	NC		%	25
2238477	DRM	Matrix Spike	Dissolved Chloride (Cl)	2010/08/19		NC	%	75 - 125
		Spiked Blank	Dissolved Chloride (Cl)	2010/08/19		102	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2010/08/19	<1		mg/L	
		RPD	Dissolved Chloride (Cl)	2010/08/19	1.0		%	20
2238484	DRM	Matrix Spike	Orthophosphate (P)	2010/08/19		107	%	75 - 125
		Spiked Blank	Orthophosphate (P)	2010/08/19		101	%	80 - 120
		Method Blank	Orthophosphate (P)	2010/08/19	<0.01		mg/L	
		RPD	Orthophosphate (P)	2010/08/19	NC		%	25
2238490	DRM	Matrix Spike	Dissolved Sulphate (SO4)	2010/08/19		102	%	75 - 125
		Spiked Blank	Dissolved Sulphate (SO4)	2010/08/19		97	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2010/08/19	<1		mg/L	
		RPD	Dissolved Sulphate (SO4)	2010/08/19	1.3		%	25
2239441	ADB	Matrix Spike	Total Ammonia-N	2010/08/20		102	%	80 - 120
		Spiked Blank	Total Ammonia-N	2010/08/20		101	%	85 - 115
		Method Blank	Total Ammonia-N	2010/08/20	<0.05		mg/L	
		RPD	Total Ammonia-N	2010/08/20	NC		%	25
2239510	C_H	Matrix Spike	Total Organic Carbon (TOC)	2010/08/19		101	%	80 - 120
		Spiked Blank	Total Organic Carbon (TOC)	2010/08/19		97	%	80 - 120
		Method Blank	Total Organic Carbon (TOC)	2010/08/19	0.2, RDL=0.2		mg/L	
		RPD	Total Organic Carbon (TOC)	2010/08/19	7.8		%	20
2239762	VRO	Matrix Spike	Total Phosphorus	2010/08/20		NC	%	80 - 120
		QC Standard	Total Phosphorus	2010/08/20		103	%	85 - 115
		Spiked Blank	Total Phosphorus	2010/08/20		103	%	85 - 115
		Method Blank	Total Phosphorus	2010/08/20	<0.002		mg/L	
		RPD	Total Phosphorus	2010/08/20	5.5		%	20

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
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Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239966	VRO	Matrix Spike	Total Phosphorus	2010/08/20		102	%	80 - 120
		QC Standard	Total Phosphorus	2010/08/20		108	%	85 - 115
		Spiked Blank	Total Phosphorus	2010/08/20		103	%	85 - 115
		Method Blank	Total Phosphorus	2010/08/20	<0.02		mg/L	
		RPD	Total Phosphorus	2010/08/20	2.2		%	20
2240276	JBW	Matrix Spike	Total Aluminum (Al)	2010/08/20		104	%	80 - 120
			Total Antimony (Sb)	2010/08/20		109	%	80 - 120
			Total Arsenic (As)	2010/08/20		105	%	80 - 120
			Total Barium (Ba)	2010/08/20		104	%	80 - 120
			Total Beryllium (Be)	2010/08/20		105	%	80 - 120
			Total Boron (B)	2010/08/20		106	%	80 - 120
			Total Cadmium (Cd)	2010/08/20		101	%	80 - 120
			Total Calcium (Ca)	2010/08/20		111	%	80 - 120
			Total Chromium (Cr)	2010/08/20		105	%	80 - 120
			Total Cobalt (Co)	2010/08/20		101	%	80 - 120
			Total Copper (Cu)	2010/08/20		102	%	80 - 120
			Total Iron (Fe)	2010/08/20		102	%	80 - 120
			Total Lead (Pb)	2010/08/20		105	%	80 - 120
			Total Magnesium (Mg)	2010/08/20		105	%	80 - 120
			Total Manganese (Mn)	2010/08/20		102	%	80 - 120
			Total Molybdenum (Mo)	2010/08/20		107	%	80 - 120
			Total Nickel (Ni)	2010/08/20		103	%	80 - 120
			Total Potassium (K)	2010/08/20		109	%	80 - 120
			Total Selenium (Se)	2010/08/20		107	%	80 - 120
			Total Silicon (Si)	2010/08/20		101	%	80 - 120
			Total Silver (Ag)	2010/08/20		97	%	80 - 120
			Total Sodium (Na)	2010/08/20		NC	%	80 - 120
			Total Strontium (Sr)	2010/08/20		108	%	80 - 120
			Total Thallium (Tl)	2010/08/20		104	%	80 - 120
			Total Titanium (Ti)	2010/08/20		106	%	80 - 120
			Total Uranium (U)	2010/08/20		105	%	80 - 120
			Total Vanadium (V)	2010/08/20		103	%	80 - 120
			Total Zinc (Zn)	2010/08/20		NC	%	80 - 120
		Spiked Blank	Total Aluminum (Al)	2010/08/20		99	%	85 - 115
			Total Antimony (Sb)	2010/08/20		108	%	85 - 115
			Total Arsenic (As)	2010/08/20		101	%	85 - 115
			Total Barium (Ba)	2010/08/20		102	%	85 - 115
			Total Beryllium (Be)	2010/08/20		102	%	85 - 115
			Total Boron (B)	2010/08/20		102	%	85 - 115
			Total Cadmium (Cd)	2010/08/20		100	%	85 - 116
			Total Calcium (Ca)	2010/08/20		101	%	85 - 115
			Total Chromium (Cr)	2010/08/20		100	%	85 - 115
			Total Cobalt (Co)	2010/08/20		97	%	85 - 115
			Total Copper (Cu)	2010/08/20		101	%	85 - 115
			Total Iron (Fe)	2010/08/20		97	%	85 - 115
			Total Lead (Pb)	2010/08/20		102	%	85 - 115
			Total Magnesium (Mg)	2010/08/20		100	%	85 - 115
			Total Manganese (Mn)	2010/08/20		97	%	85 - 115
			Total Molybdenum (Mo)	2010/08/20		107	%	85 - 115
			Total Nickel (Ni)	2010/08/20		99	%	85 - 115
			Total Potassium (K)	2010/08/20		102	%	85 - 115
			Total Selenium (Se)	2010/08/20		105	%	85 - 115
			Total Silicon (Si)	2010/08/20		100	%	85 - 115
			Total Silver (Ag)	2010/08/20		96	%	85 - 115
			Total Sodium (Na)	2010/08/20		100	%	85 - 115

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Stantec Consulting Ltd
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Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2240276	JBW	Spiked Blank	Total Strontium (Sr)	2010/08/20		99	%	85 - 115
			Total Thallium (Tl)	2010/08/20		103	%	85 - 115
			Total Titanium (Ti)	2010/08/20		100	%	85 - 115
			Total Uranium (U)	2010/08/20		103	%	85 - 115
			Total Vanadium (V)	2010/08/20		99	%	85 - 115
			Total Zinc (Zn)	2010/08/20		104	%	85 - 115
		Method Blank	Total Aluminum (Al)	2010/08/20	<5		ug/L	
			Total Antimony (Sb)	2010/08/20	<0.5		ug/L	
			Total Arsenic (As)	2010/08/20	<1		ug/L	
			Total Barium (Ba)	2010/08/20	<5		ug/L	
			Total Beryllium (Be)	2010/08/20	<0.5		ug/L	
			Total Boron (B)	2010/08/20	<10		ug/L	
			Total Cadmium (Cd)	2010/08/20	<0.1		ug/L	
			Total Calcium (Ca)	2010/08/20	<200		ug/L	
			Total Chromium (Cr)	2010/08/20	<5		ug/L	
			Total Cobalt (Co)	2010/08/20	<0.5		ug/L	
			Total Copper (Cu)	2010/08/20	<1		ug/L	
			Total Iron (Fe)	2010/08/20	<100		ug/L	
			Total Lead (Pb)	2010/08/20	<0.5		ug/L	
			Total Magnesium (Mg)	2010/08/20	<50		ug/L	
			Total Manganese (Mn)	2010/08/20	<2		ug/L	
			Total Molybdenum (Mo)	2010/08/20	<1		ug/L	
			Total Nickel (Ni)	2010/08/20	<1		ug/L	
			Total Potassium (K)	2010/08/20	<200		ug/L	
			Total Selenium (Se)	2010/08/20	<2		ug/L	
			Total Silicon (Si)	2010/08/20	<50		ug/L	
			Total Silver (Ag)	2010/08/20	<0.1		ug/L	
			Total Sodium (Na)	2010/08/20	<100		ug/L	
			Total Strontium (Sr)	2010/08/20	<1		ug/L	
			Total Thallium (Tl)	2010/08/20	<0.05		ug/L	
			Total Titanium (Ti)	2010/08/20	<5		ug/L	
			Total Uranium (U)	2010/08/20	<0.1		ug/L	
			Total Vanadium (V)	2010/08/20	<1		ug/L	
			Total Zinc (Zn)	2010/08/20	<5		ug/L	
		RPD	Total Aluminum (Al)	2010/08/20	23.0		%	25
			Total Antimony (Sb)	2010/08/20	NC		%	25
			Total Arsenic (As)	2010/08/20	NC		%	25
			Total Barium (Ba)	2010/08/20	NC		%	25
			Total Beryllium (Be)	2010/08/20	NC		%	25
			Total Boron (B)	2010/08/20	NC		%	25
			Total Cadmium (Cd)	2010/08/20	NC		%	25
			Total Calcium (Ca)	2010/08/20	6.3		%	25
			Total Chromium (Cr)	2010/08/20	NC		%	25
			Total Cobalt (Co)	2010/08/20	NC		%	25
			Total Copper (Cu)	2010/08/20	NC		%	25
			Total Iron (Fe)	2010/08/20	NC		%	25
			Total Lead (Pb)	2010/08/20	NC		%	25
			Total Magnesium (Mg)	2010/08/20	4.7		%	25
			Total Manganese (Mn)	2010/08/20	3.0		%	25
			Total Molybdenum (Mo)	2010/08/20	NC		%	25
			Total Nickel (Ni)	2010/08/20	NC		%	25
			Total Potassium (K)	2010/08/20	5.4		%	25
			Total Selenium (Se)	2010/08/20	NC		%	25
			Total Silicon (Si)	2010/08/20	4.7		%	25
			Total Silver (Ag)	2010/08/20	NC		%	25

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0540

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2240276	JBW	RPD	Total Sodium (Na)	2010/08/20	3.9		%	25
			Total Strontium (Sr)	2010/08/20	4.5		%	25
			Total Thallium (Tl)	2010/08/20	NC		%	25
			Total Titanium (Ti)	2010/08/20	NC		%	25
			Total Uranium (U)	2010/08/20	NC		%	25
			Total Vanadium (V)	2010/08/20	NC		%	25
			Total Zinc (Zn)	2010/08/20	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

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

CHAIN OF CUSTODY RECORD

Page 31 of 1

Maxxam Analytics Inc
6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

INVOICE INFORMATION

Company Name: Stantec
Contact Name: Patricia Coyne
Address: PO Box 1680 Yellowknife, NT X1A2P3
Phone: 867-920-2216 Fax: 867-920-2278
Email: patricia.coyne@stantec.com

REPORT INFORMATION (if differs from invoice)

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

PROJECT INFORMATION

Quotation #: B05402
P.O. #:
Project #: 123600017
Project Name: Clyde River PhII ESA
Location:
Sampled By: MN/JS

MAXXAM JOB NUMBER

CHAIN OF CUSTODY #

00573302

REGULATORY CRITERIA

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

☐ MISA ☐ Reg. 153 (☐ Table 1 ☐ Table 2 ☐ Table 3) Sewer Use (☐ Sanitary ☐ Storm) Region: ☐ Other CCME (specify)
☐ PWQO
☐ Reg. 558
Report Criteria on C of A? ☐

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

ANALYSIS REQUESTED (Please be specific)

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	Regulated Drinking Water? (Y / N)	Metals Field Filtered? (Y / N)	CCME BTEX F1 F2	CCME Total Metals (FWAL)	RCAP including reactives + cold vapour	Alberta Tier 1 PAHs	# of Cont.	COMMENTS / TAT COMMENTS
1	CW-D	Aug 13/10	9:05am	SW	N	N	✓	✓	✓	✓	12	
2	CW-BG	Aug 13/10	11:20am	SW	N	N	✓	✓	✓	✓	12	
3	CW-4	Aug 13/10	2:30pm	SW	N	N	✓	✓	✓	✓	12	
4												
5												
6												
7												
8												
9												
10												
11												
12												

16-Aug-10 11:26
MARIE (MCNAIR) MUI
B0B0540
KVN OTT-001

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT: ☑ 5 to 7 Working Days

Rush TAT: Rush Confirmation #: (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days

DATE Required:
TIME Required:

Please note that TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

REC'D IN OTTAWA

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
Melissa Nicholson	Melissa Dawin	Aug 13/10	9:52pm
		10/08/16	11:26

ONICE Laboratory Use Only

Temperature (°C) on Receipt: 9/9/11

Condition of Sample on Receipt: ☐ OK ☐ SIF

*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

ENVCOC-ONT-05/06

White: Maxxam Yellow: Mail Pink: Client

Your Project #: MB0B0540
Site:123600017

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/19
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072666
Received: 2010/08/18, 8:30

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Silica (Reactive)	3	N/A	2010/08/18	AB SOP-00011	EPA 370.1

Encryption Key

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

JENNIFER RISPLER,
Email: Jennifer.Rispler@MaxxamAnalytics.com
Phone# (403) 735-2201 Ext:2201

==========

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 ANALYTICS INC.

Maxxam Job #: B072666
Report Date: 2010/08/19

Client Project #: MB0B0540
Site Reference: 123600017

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		W29213	W29216		W29217		
Sampling Date		2010/08/13	2010/08/13		2010/08/13		
	Units	**CW-D (GV4264-02R)**	**CW-BG (GV4265-02R)**	**RDL**	**CW-4 (GV4266-02R)**	**RDL**	**QC Batch**
Misc. Inorganics							
Reactive Silica	mg/L	1.9	2.2	0.05	19 (1)	0.3	4188604

RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam Job #: B072666
Report Date: 2010/08/19

MAXXAM ANALYTICS INC.
Client Project #: MB0B0540
Site Reference: 123600017

Package 1	1.0°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B0540
P.O. #:
Site Reference: 123600017

Quality Assurance Report

Maxxam Job Number: CB072666

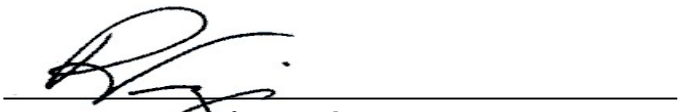
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4188604	CZ0	Matrix Spike	Reactive Silica	2010/08/18		101	%	80 - 120
		Spiked Blank	Reactive Silica	2010/08/18		100	%	89 - 110
		Method Blank	Reactive Silica	2010/08/18	<0.05		mg/L	
		RPD	Reactive Silica	2010/08/18	2.4		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Validation Signature Page

Maxxam Job #: B072666

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



RON VENZI, Scientific Specialist

==========

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

Your Project #: B0B0540

Attention: RENATA SPENA
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072679
Received: 2010/08/17, 8:45

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Benzo[a]pyrene Equivalency	3	N/A	2010/08/21	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons (1)	3	2010/08/19	2010/08/20	AB SOP-00003 AB WI-00017	EPA 3510C/8270D

(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

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		W29241	W29242		W29243		
Sampling Date		2010/08/13	2010/08/13		2010/08/13		
	Units	**GV4264-01R\CW-D**	**GV4265-01R\CW-BG**	**RDL**	**GV4266-01R\CW-4**	**RDL**	**QC Batch**
Polycyclic Aromatics							
Benzo[a]pyrene equivalency	ug/L	<0.01	<0.01	0.01	0.03	0.01	4189791
Acenaphthene	ug/L	<0.10	<0.10	0.10	<0.25	0.25	4191365
Acenaphthylene	ug/L	<0.10	<0.10	0.10	<0.25	0.25	4191365
Acridine	ug/L	<0.20	<0.20	0.20	<0.50	0.50	4191365
Anthracene	ug/L	<0.010	<0.010	0.010	<0.025	0.025	4191365
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	0.0085	<0.021	0.021	4191365
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	0.029	0.021	4191365
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	0.0085	<0.021	0.021	4191365
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	0.0085	<0.021	0.021	4191365
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	0.050	<0.13	0.13	4191365
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	0.0075	<0.019	0.019	4191365
Benzo[e]pyrene	ug/L	<0.050	<0.050	0.050	<0.13	0.13	4191365
Chrysene	ug/L	<0.0085	<0.0085	0.0085	0.053	0.021	4191365
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	0.0075	<0.019	0.019	4191365
Fluoranthene	ug/L	<0.040	<0.040	0.040	<0.10	0.10	4191365
Fluorene	ug/L	<0.050	<0.050	0.050	<0.13	0.13	4191365
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	0.0085	<0.021	0.021	4191365
2-Methylnaphthalene	ug/L	<0.10	<0.10	0.10	0.62	0.25	4191365
Naphthalene	ug/L	<0.10	<0.10	0.10	3.6	0.25	4191365
Phenanthrene	ug/L	<0.050	<0.050	0.050	<0.13	0.13	4191365
Perylene	ug/L	<0.050	<0.050	0.050	<0.13	0.13	4191365
Pyrene	ug/L	<0.020	<0.020	0.020	0.083	0.050	4191365
Quinoline	ug/L	<0.20	<0.20	0.20	<0.50	0.50	4191365
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	113	118	N/A	109	N/A	4191365
D12-BENZO(A)PYRENE (sur.)	%	104	110	N/A	87	N/A	4191365
D8-ACENAPHTHYLENE (sur.)	%	101	106	N/A	79	N/A	4191365
TERPHENYL-D14 (sur.)	%	105	111	N/A	97	N/A	4191365

N/A = Not Applicable
RDL = Reportable Detection Limit

Package 1	2.7°C

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

General Comments

Sample W29243-01: PAH detection limits raised based on extract volume used for analysis.

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0540
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB072679

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4191365	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/20		99	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/20		90	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		88	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/20		91	%	30 - 130
			Acenaphthene	2010/08/20		90	%	30 - 130
			Acenaphthylene	2010/08/20		89	%	30 - 130
			Acridine	2010/08/20		67	%	30 - 130
			Anthracene	2010/08/20		84	%	30 - 130
			Benzo(a)anthracene	2010/08/20		91	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/20		99	%	30 - 130
			Benzo(k)fluoranthene	2010/08/20		91	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/20		95	%	30 - 130
			Benzo(c)phenanthrene	2010/08/20		88	%	30 - 130
			Benzo(a)pyrene	2010/08/20		94	%	30 - 130
			Benzo[e]pyrene	2010/08/20		91	%	30 - 130
			Chrysene	2010/08/20		120	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/20		100	%	30 - 130
			Fluoranthene	2010/08/20		95	%	30 - 130
			Fluorene	2010/08/20		91	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/20		95	%	30 - 130
			2-Methylnaphthalene	2010/08/20		83	%	30 - 130
			Naphthalene	2010/08/20		85	%	30 - 130
			Phenanthrene	2010/08/20		93	%	30 - 130
			Perylene	2010/08/20		89	%	30 - 130
			Pyrene	2010/08/20		96	%	30 - 130
			Quinoline	2010/08/20		124	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/20		119	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/20		111	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		109	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/20		112	%	30 - 130
			Acenaphthene	2010/08/20		104	%	30 - 130
			Acenaphthylene	2010/08/20		103	%	30 - 130
			Acridine	2010/08/20		82	%	30 - 130
			Anthracene	2010/08/20		96	%	30 - 130
			Benzo(a)anthracene	2010/08/20		103	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/20		112	%	30 - 130
			Benzo(k)fluoranthene	2010/08/20		104	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/20		106	%	30 - 130
			Benzo(c)phenanthrene	2010/08/20		99	%	30 - 130
			Benzo(a)pyrene	2010/08/20		107	%	30 - 130
			Benzo[e]pyrene	2010/08/20		102	%	30 - 130
			Chrysene	2010/08/20		128	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/20		113	%	30 - 130
			Fluoranthene	2010/08/20		108	%	30 - 130
			Fluorene	2010/08/20		105	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/20		107	%	30 - 130
			2-Methylnaphthalene	2010/08/20		97	%	30 - 130
			Naphthalene	2010/08/20		101	%	30 - 130
			Phenanthrene	2010/08/20		106	%	30 - 130
			Perylene	2010/08/20		105	%	30 - 130
			Pyrene	2010/08/20		108	%	30 - 130
			Quinoline	2010/08/20		120	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/19		121	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/19		115	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/19		107	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0540
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB072679

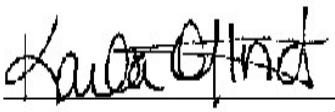
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4191365	JA3	Method Blank	TERPHENYL-D14 (sur.)	2010/08/19		115	%	30 - 130
			Acenaphthene	2010/08/19	<0.10		ug/L	
			Acenaphthylene	2010/08/19	<0.10		ug/L	
			Acridine	2010/08/19	<0.20		ug/L	
			Anthracene	2010/08/19	<0.010		ug/L	
			Benzo(a)anthracene	2010/08/19	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2010/08/19	<0.0085		ug/L	
			Benzo(k)fluoranthene	2010/08/19	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2010/08/19	<0.0085		ug/L	
			Benzo(c)phenanthrene	2010/08/19	<0.050		ug/L	
			Benzo(a)pyrene	2010/08/19	<0.0075		ug/L	
			Benzo[e]pyrene	2010/08/19	<0.050		ug/L	
			Chrysene	2010/08/19	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2010/08/19	<0.0075		ug/L	
			Fluoranthene	2010/08/19	<0.040		ug/L	
			Fluorene	2010/08/19	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2010/08/19	<0.0085		ug/L	
			2-Methylnaphthalene	2010/08/19	<0.10		ug/L	
			Naphthalene	2010/08/19	<0.10		ug/L	
			Phenanthrene	2010/08/19	<0.050		ug/L	
			Perylene	2010/08/19	<0.050		ug/L	
			Pyrene	2010/08/19	<0.020		ug/L	
			Quinoline	2010/08/19	<0.20		ug/L	
		RPD	Acenaphthene	2010/08/20	NC		%	40
			Acenaphthylene	2010/08/20	NC		%	40
			Acridine	2010/08/20	NC		%	40
			Anthracene	2010/08/20	NC		%	40
			Benzo(a)anthracene	2010/08/20	NC		%	40
			Benzo(b&j)fluoranthene	2010/08/20	NC		%	40
			Benzo(k)fluoranthene	2010/08/20	NC		%	40
			Benzo(g,h,i)perylene	2010/08/20	NC		%	40
			Benzo(a)pyrene	2010/08/20	NC		%	40
			Chrysene	2010/08/20	39.1		%	40
			Dibenz(a,h)anthracene	2010/08/20	NC		%	40
			Fluoranthene	2010/08/20	NC		%	40
			Fluorene	2010/08/20	NC		%	40
			Indeno(1,2,3-cd)pyrene	2010/08/20	NC		%	40
			Naphthalene	2010/08/20	NC		%	40
			Phenanthrene	2010/08/20	NC		%	40
			Pyrene	2010/08/20	NC		%	40
			Quinoline	2010/08/20	NC		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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 #: B072679

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



KARLA OFFORD, Senior Analyst

==========

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

Your Project #: B0B0545

Attention: RENATA SPENA
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072689
Received: 2010/08/17, 8:45

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	2	N/A	2010/08/20	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	2	N/A	2010/08/23	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	2	2010/08/18	2010/08/21	AB SOP-00003 AB WI-00016	EPA 3540C/8270D

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W29295	W29296		
Sampling Date		2010/08/10	2010/08/10		
	Units	**GV4280-03R\TP2-EF-1**	**GV4350-03R\TP1-J-1**	**RDL**	**QC Batch**
Physical Properties					
Moisture	%	39	14	0.3	4196395

RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W29295		W29296		
Sampling Date		2010/08/10		2010/08/10		
	Units	**GV4280-03R\TP2-EF-1**	**RDL**	**GV4350-03R\TP1-J-1**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	<0.1	0.1	4190025
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Acridine	mg/kg	<0.010	0.010	<0.010	0.010	4193614
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	0.0040	4193614
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo[e]pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Chrysene	mg/kg	0.0084	0.0050	<0.0050	0.0050	4193614
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Fluoranthene	mg/kg	0.0088	0.0050	<0.0050	0.0050	4193614
Fluorene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
2-Methylnaphthalene	mg/kg	0.010	0.0050	<0.0050	0.0050	4193614
Naphthalene	mg/kg	<0.013 (1)	0.013	<0.0050	0.0050	4193614
Phenanthrene	mg/kg	0.024	0.0050	<0.0050	0.0050	4193614
Perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Pyrene	mg/kg	0.0091	0.0050	<0.0050	0.0050	4193614
Quinoline	mg/kg	<0.010	0.010	<0.010	0.010	4193614
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	105	N/A	105	N/A	4193614
D12-BENZO(A)PYRENE (sur.)	%	99	N/A	100	N/A	4193614
D8-ACENAPHTHYLENE (sur.)	%	97	N/A	96	N/A	4193614
TERPHENYL-D14 (sur.)	%	102	N/A	102	N/A	4193614

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

Package 1	2.7°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0545
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB072689

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4193614	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/21		112	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/21		102	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/21		104	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/21		111	%	30 - 130
			Acenaphthene	2010/08/21		97	%	30 - 130
			Acenaphthylene	2010/08/21		95	%	30 - 130
			Acridine	2010/08/21		39	%	30 - 130
			Anthracene	2010/08/21		88	%	30 - 130
			Benzo(a)anthracene	2010/08/21		97	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/21		100	%	30 - 130
			Benzo(k)fluoranthene	2010/08/21		90	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/21		93	%	30 - 130
			Benzo(c)phenanthrene	2010/08/21		95	%	30 - 130
			Benzo(a)pyrene	2010/08/21		96	%	30 - 130
			Benzo[e]pyrene	2010/08/21		94	%	30 - 130
			Chrysene	2010/08/21		123	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/21		104	%	30 - 130
			Fluoranthene	2010/08/21		99	%	30 - 130
			Fluorene	2010/08/21		99	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/21		93	%	30 - 130
			2-Methylnaphthalene	2010/08/21		92	%	30 - 130
			Naphthalene	2010/08/21		94	%	30 - 130
			Phenanthrene	2010/08/21		96	%	30 - 130
			Perylene	2010/08/21		88	%	30 - 130
			Pyrene	2010/08/21		99	%	30 - 130
			Quinoline	2010/08/21		100	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/21		107	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/21		104	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/21		100	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/21		103	%	30 - 130
			Acenaphthene	2010/08/21		97	%	30 - 130
			Acenaphthylene	2010/08/21		98	%	30 - 130
			Acridine	2010/08/21		54	%	30 - 130
			Anthracene	2010/08/21		90	%	30 - 130
			Benzo(a)anthracene	2010/08/21		101	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/21		110	%	30 - 130
			Benzo(k)fluoranthene	2010/08/21		96	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/21		99	%	30 - 130
			Benzo(c)phenanthrene	2010/08/21		95	%	30 - 130
			Benzo(a)pyrene	2010/08/21		104	%	30 - 130
			Benzo[e]pyrene	2010/08/21		100	%	30 - 130
			Chrysene	2010/08/21		125	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/21		108	%	30 - 130
			Fluoranthene	2010/08/21		102	%	30 - 130
			Fluorene	2010/08/21		99	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/21		101	%	30 - 130
			2-Methylnaphthalene	2010/08/21		92	%	30 - 130
			Naphthalene	2010/08/21		96	%	30 - 130
			Phenanthrene	2010/08/21		97	%	30 - 130
			Perylene	2010/08/21		95	%	30 - 130
			Pyrene	2010/08/21		101	%	30 - 130
			Quinoline	2010/08/21		119	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/20		106	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/20		98	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		97	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0545
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB072689

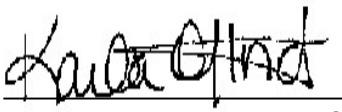
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4193614	JA3	Method Blank	TERPHENYL-D14 (sur.)	2010/08/20		100	%	30 - 130
			Acenaphthene	2010/08/20	<0.0050		mg/kg	
			Acenaphthylene	2010/08/20	<0.0050		mg/kg	
			Acridine	2010/08/20	<0.010		mg/kg	
			Anthracene	2010/08/20	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/20	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/20	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/20	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/20	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/20	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/20	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/20	<0.0050		mg/kg	
			Chrysene	2010/08/20	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/20	<0.0050		mg/kg	
			Fluoranthene	2010/08/20	<0.0050		mg/kg	
			Fluorene	2010/08/20	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/20	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/20	<0.0050		mg/kg	
			Naphthalene	2010/08/20	<0.0050		mg/kg	
			Phenanthrene	2010/08/20	<0.0050		mg/kg	
			Perylene	2010/08/20	<0.0050		mg/kg	
			Pyrene	2010/08/20	<0.0050		mg/kg	
			Quinoline	2010/08/20	<0.010		mg/kg	
		RPD	Acenaphthene	2010/08/21	NC		%	50
			Acenaphthylene	2010/08/21	NC		%	50
			Anthracene	2010/08/21	NC		%	50
			Benzo(a)anthracene	2010/08/21	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/21	NC		%	50
			Benzo(k)fluoranthene	2010/08/21	NC		%	50
			Benzo(g,h,i)perylene	2010/08/21	NC		%	50
			Benzo(a)pyrene	2010/08/21	NC		%	50
			Chrysene	2010/08/21	NC		%	50
			Dibenz(a,h)anthracene	2010/08/21	NC		%	50
			Fluoranthene	2010/08/21	NC		%	50
			Fluorene	2010/08/21	NC		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/21	NC		%	50
			Naphthalene	2010/08/21	NC		%	50
			Phenanthrene	2010/08/21	NC		%	50
			Pyrene	2010/08/21	NC		%	50
4196395	JL8	Method Blank	Moisture	2010/08/20	<0.3		%	
		RPD	Moisture	2010/08/20	14.1		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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 #: B072689

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



KARLA OFFORD, Senior Analyst

LISA CUMMINGS, Extractables 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.

Your P.O. #: 16300NR
Your Project #: 1236000017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 20069213, 200692-1, 200692-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/15
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B0545
Received: 2010/08/16, 11:38

Sample Matrix: Soil
Samples Received: 27

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	1	2010/08/30	2010/08/31	CAM SOP-00408	R153 Ana. Prot. 2004
Hot Water Extractable Boron	1	2010/09/01	2010/09/01	CAM SOP-00408	R153 Ana. Prot. 2004
Hot Water Extractable Boron	1	2010/09/02	2010/09/02	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (2)	1	N/A	2010/08/20	CAM SOP-00436	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (2)	2	N/A	2010/09/02	CAM SOP-00436	EPA SW846-3060/7199
TEH in Soil (AA PIRI) (1)	1	2010/08/17	2010/08/20	ATL SOP 00116 R3	Based on Atl. PIRI
Petroleum Hydro. CCME F1 & BTEX in Soil	24	2010/08/17	2010/08/19	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2010/09/10	2010/09/13	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2010/09/10	2010/09/14	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	20	2010/08/17	2010/08/18	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	4	2010/08/18	2010/08/20	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2010/09/10	2010/09/10	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	2010/08/27	2010/08/27	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	1	2010/08/31	2010/09/01	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	1	2010/09/02	2010/09/02	CAM SOP-00447	EPA 6020
Moisture (1)	1	N/A	2010/08/17	ATL SOP 00001 R3	MOE Handbook 1983
MOISTURE (2)	2	N/A	2010/09/09	CAM SOP-00445	MOE HANDBOOK(1983)
Moisture	24	N/A	2010/08/31	CAM SOP-00445	McKeague 2nd ed 1978
pH CaCl2 EXTRACT	2	2010/08/31	2010/08/31	CAM SOP-00413	SM 4500 H
pH CaCl2 EXTRACT	2	2010/09/01	2010/08/31	CAM SOP-00413	SM 4500 H
VPH in Soil (PIRI2) (1)	1	2010/08/17	2010/09/01	ATL SOP 00120 R4	Based on Atl. PIRI
Sieve, 75um (2)	1	N/A	2010/08/20	CAM SOP-00467	
ModTPH (T2) Calc. for Soil (1)	1	N/A	2010/09/03	n/a	Based on Atl. PIRI

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

(1) This test was performed by Bedford
(2) This test was performed by Maxxam Ottawa
(3) Soils are reported on a dry weight basis unless otherwise specified.
(4) The Sieve test has been validated in accordance with ISO Guide 17025 requirements. SCC accreditation pending.

../2

Your P.O. #: 16300NR
Your Project #: 1236000017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 20069213, 200692-1, 200692-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/15
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4275	GV4276	GV4278	GV4279		
Sampling Date		2010/08/10 13:00	2010/08/10 15:00	2010/08/10 09:30	2010/08/10 16:10		
COC Number		200692-1	200692-1	200692-1	200692-1		
	Units	**TP1-F-4**	**TP1.5-F-1**	**TP2-F-1**	**TP1.5-EF-3**	**RDL**	**QC Batch**
Inorganics							
Moisture	%	16	23	9	17	1	2251706
Available (CaCl2) pH	pH			5.10			2251401

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4280		GV4282	GV4300		
Sampling Date		2010/08/10 09:10		2010/08/10 16:35	2010/08/10 11:05		
COC Number		200692-1		200692-1	200692-1		
	Units	**TP2-EF-1**	**QC Batch**	**TP1.5-E-1**	**TP0.5-G-1**	**RDL**	**QC Batch**
Inorganics							
Chromium (VI)	ug/g	<0.2	2240360			0.2	2240360
Moisture	%	18	2236783	12	2	1	2251706
Available (CaCl2) pH	pH				6.03		2251401

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4301			GV4302	GV4303		
Sampling Date		2010/08/10 11:10			2010/08/10 11:15	2010/08/10 11:35		
COC Number		200692-1			200692-1	200692-1		
	Units	**TP0.5-G-2**	**RDL**	**QC Batch**	**TP0.5-G-4**	**TP1-G-2**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	6.9	0.2	2257660	10	14	1	2251706

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4305	GV4307	GV4308	GV4308		
Sampling Date		2010/08/10 13:45	2010/08/10 15:55	2010/08/10 12:35	2010/08/10 12:35		
COC Number		200692-1	200692-1	200692-1	200692-1		
	Units	**TP1-FG-1**	**TP1.5-FG-4**	**TP1-F-3**	**TP1-F-3 Lab-Dup**	**RDL**	**QC Batch**
Inorganics							
Moisture	%	4	8	11	11	1	2251706

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

Maxxam ID		GV4312			GV4314	GV4315		
Sampling Date		2010/08/09 09:55			2010/08/09 10:05	2010/08/09 14:40		
COC Number		200692-0			200692-0	200692-0		
	Units	**TP7-L-2**	**RDL**	**QC Batch**	**TP7-L-4**	**TP2-K-2**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	18	0.2	2257660	16	15	1	2251706
Available (CaCl2) pH	pH	5.09		2252309				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4316	GV4318	GV4320	GV4348		
Sampling Date		2010/08/09 15:10	2010/08/09 15:45	2010/08/09 16:10	2010/08/09 16:30		
COC Number		200692-0	200692-0	200692-0	200692-0		
	Units	**TP3-K-2**	**TP4-K-2**	**TP5-K-2**	**TP6-K-2**	**RDL**	**QC Batch**
Inorganics							
Moisture	%	10	17	15	13	1	2251706
Available (CaCl2) pH	pH			4.89			2252309

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4349		GV4350		GV4352		
Sampling Date		2010/08/10 08:50		2010/08/10 09:25		2010/08/10 10:00		
COC Number		200692-0		200692-0		200692-0		
	Units	**TP7-K-3**	**QC Batch**	**TP1-J-1**	**QC Batch**	**TP2-J-1**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g		2240360	<0.2	2252639	<0.2	0.2	2251831
Moisture	%		2251706	2	2251706	3	1	2252203
Miscellaneous Parameters								
Grain Size	%	FINE	2252150				N/A	
Sieve - #200 (<0.075mm)	%	53	2252150				N/A	
Sieve - #200 (>0.075mm)	%	47	2252150				N/A	

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4353	GV4354	GV4354		GV4356		
Sampling Date		2010/08/10 11:00	2010/08/10 10:35	2010/08/10 10:35		2010/08/10 10:00		
COC Number		200692-0	200692-0	200692-0		200692-0		
	Units	**TP3.5-I-3**	**TP1-H-2**	**TP1-H-2 Lab-Dup**	**QC Batch**	**TP2-GH-2**	**RDL**	**QC Batch**
Inorganics								
Moisture	%	8	3	3	2252203	22	1	2251706

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4357		
Sampling Date		2010/08/10 10:30		
COC Number		200692-0		
	Units	**TP3-GH-2**	**RDL**	**QC Batch**
Inorganics				
Moisture	%	3	1	2252203

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4280		GV4350		GV4352		
Sampling Date		2010/08/10 09:10		2010/08/10 09:25		2010/08/10 10:00		
COC Number		200692-1		200692-0		200692-0		
	Units	**TP2-EF-1**	**QC Batch**	**TP1-J-1**	**QC Batch**	**TP2-J-1**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.12	2252710	<0.05	2253856	0.22	0.05	2249975
Acid Extractable Aluminum (Al)	ug/g	4600	2252245	1800	2254076	1200	50	2248066
Acid Extractable Antimony (Sb)	ug/g	<0.2	2252245	0.7	2254076	6.2	0.2	2248066
Acid Extractable Arsenic (As)	ug/g	<1	2252245	<1	2254076	<1	1	2248066
Acid Extractable Barium (Ba)	ug/g	26	2252245	13	2254076	56	0.5	2248066
Acid Extractable Beryllium (Be)	ug/g	<0.2	2252245	<0.2	2254076	<0.2	0.2	2248066
Acid Extractable Bismuth (Bi)	ug/g	<1	2252245	<1	2254076	<1	1	2248066
Acid Extractable Cadmium (Cd)	ug/g	<0.1	2252245	<0.1	2254076	<0.1	0.1	2248066
Acid Extractable Chromium (Cr)	ug/g	10	2252245	7	2254076	3	1	2248066
Acid Extractable Cobalt (Co)	ug/g	2.7	2252245	1.7	2254076	0.9	0.1	2248066
Acid Extractable Copper (Cu)	ug/g	7.2	2252245	21	2254076	4.9	0.5	2248066
Acid Extractable Iron (Fe)	ug/g	10000	2252245	9900	2254076	4900	50	2248066
Acid Extractable Lead (Pb)	ug/g	10	2252245	29	2254076	70	1	2248066
Acid Extractable Manganese (Mn)	ug/g	90	2252245	62	2254076	33	1	2248066
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2252245	<0.5	2254076	<0.5	0.5	2248066
Acid Extractable Nickel (Ni)	ug/g	4.9	2252245	2.8	2254076	1.6	0.5	2248066
Acid Extractable Selenium (Se)	ug/g	<0.5	2252245	0.6	2254076	<0.5	0.5	2248066
Acid Extractable Silver (Ag)	ug/g	<0.2	2252245	<0.2	2254076	<0.2	0.2	2248066
Acid Extractable Strontium (Sr)	ug/g	5	2252245	4	2254076	5	1	2248066
Acid Extractable Thallium (Tl)	ug/g	0.13	2252245	<0.05	2254076	<0.05	0.05	2248066
Acid Extractable Tin (Sn)	ug/g	<5	2252245	15	2254076	<5	5	2248066
Acid Extractable Uranium (U)	ug/g	0.77	2252245	0.77	2254076	0.42	0.05	2248066
Acid Extractable Vanadium (V)	ug/g	23	2252245	19	2254076	10	5	2248066
Acid Extractable Zinc (Zn)	ug/g	57	2252245	28	2254076	25	5	2248066
Acid Extractable Mercury (Hg)	ug/g	<0.05	2252245	<0.05	2254076	<0.05	0.05	2248066

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
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Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4275	GV4275	GV4276	GV4278		
Sampling Date		2010/08/10 13:00	2010/08/10 13:00	2010/08/10 15:00	2010/08/10 09:30		
COC Number		200692-1	200692-1	200692-1	200692-1		
	Units	**TP1-F-4**	**TP1-F-4 Lab-Dup**	**TP1.5-F-1**	**TP2-F-1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237999
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237999
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237999
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237999
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	240		580	<10	10	2237840
F3 (C16-C34 Hydrocarbons)	ug/g	180		540	81	10	2237840
F4 (C34-C50 Hydrocarbons)	ug/g	<10		26	17	10	2237840
Reached Baseline at C50	ug/g	Yes		Yes	Yes		2237840
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	48 (1)	97	97	101		2237999
4-Bromofluorobenzene	%	106	102	102	99		2237999
D10-Ethylbenzene	%	106	107	108	102		2237999
D4-1,2-Dichloroethane	%	70	95	96	96		2237999
o-Terphenyl	%	101		106	103		2237840

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
QC Batch = Quality Control Batch
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4279	GV4280	GV4282	GV4300		
Sampling Date		2010/08/10 16:10	2010/08/10 09:10	2010/08/10 16:35	2010/08/10 11:05		
COC Number		200692-1	200692-1	200692-1	200692-1		
	Units	**TP1.5-EF-3**	**TP2-EF-1**	**TP1.5-E-1**	**TP0.5-G-1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237999
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237999
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237999
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237999
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	260	190	<10	120	10	2237840
F3 (C16-C34 Hydrocarbons)	ug/g	100	160	<10	70	10	2237840
F4 (C34-C50 Hydrocarbons)	ug/g	<10	12	<10	<10	10	2237840
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237840
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	98	97	98	102		2237999
4-Bromofluorobenzene	%	100	100	100	101		2237999
D10-Ethylbenzene	%	103	113	100	99		2237999
D4-1,2-Dichloroethane	%	96	95	95	98		2237999
o-Terphenyl	%	108	104	103	98		2237840

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4301		GV4302	GV4303	GV4303		
Sampling Date		2010/08/10 11:10		2010/08/10 11:15	2010/08/10 11:35	2010/08/10 11:35		
COC Number		200692-1		200692-1	200692-1	200692-1		
	Units	**TP0.5-G-2**	**QC Batch**	**TP0.5-G-4**	**TP1-G-2**	**TP1-G-2 Lab-Dup**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	2262335	<0.005	<0.005		0.005	2237999
Toluene	ug/g	<0.02	2262335	<0.02	<0.02		0.02	2237999
Ethylbenzene	ug/g	<0.01	2262335	<0.01	<0.01		0.01	2237999
o-Xylene	ug/g	<0.02	2262335	<0.02	<0.02		0.02	2237999
p+m-Xylene	ug/g	<0.04	2262335	<0.04	<0.04		0.04	2237999
Total Xylenes	ug/g	<0.04	2262335	<0.04	<0.04		0.04	2237999
F1 (C6-C10)	ug/g	<10	2262335	<10	<10		10	2237999
F1 (C6-C10) - BTEX	ug/g	<10	2262335	<10	<10		10	2237999
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	820	2262231	<10	<10	<10	10	2237840
F3 (C16-C34 Hydrocarbons)	ug/g	150	2262231	<10	<10	<10	10	2237840
F4 (C34-C50 Hydrocarbons)	ug/g	<10	2262231	<10	<10	<10	10	2237840
Reached Baseline at C50	ug/g	Yes	2262231	Yes	Yes	Yes		2237840
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	86	2262335	97	102			2237999
4-Bromofluorobenzene	%	104	2262335	99	100			2237999
D10-Ethylbenzene	%	87	2262335	105	108			2237999
D4-1,2-Dichloroethane	%	110	2262335	95	96			2237999
o-Terphenyl	%	80	2262231	102	100	99		2237840

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4305	GV4307	GV4308		GV4312		
Sampling Date		2010/08/10 13:45	2010/08/10 15:55	2010/08/10 12:35		2010/08/09 09:55		
COC Number		200692-1	200692-1	200692-1		200692-0		
	Units	**TP1-FG-1**	**TP1.5-FG-4**	**TP1-F-3**	**QC Batch**	**TP7-L-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	<0.005	<0.005	2237999	<0.005	0.005	2262335
Toluene	ug/g	<0.02	<0.02	0.03	2237999	<0.02	0.02	2262335
Ethylbenzene	ug/g	<0.01	<0.01	0.06	2237999	<0.01	0.01	2262335
o-Xylene	ug/g	<0.02	<0.02	0.28	2237999	<0.02	0.02	2262335
p+m-Xylene	ug/g	<0.04	<0.04	0.14	2237999	<0.04	0.04	2262335
Total Xylenes	ug/g	<0.04	<0.04	0.42	2237999	<0.04	0.04	2262335
F1 (C6-C10)	ug/g	<10	<10	34	2237999	13	10	2262335
F1 (C6-C10) - BTEX	ug/g	<10	<10	33	2237999	13	10	2262335
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	1100	<10	720	2237840	1800	10	2262231
F3 (C16-C34 Hydrocarbons)	ug/g	250	<10	270	2237840	310	10	2262231
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	2237840	33	10	2262231
Reached Baseline at C50	ug/g	Yes	Yes	Yes	2237840	Yes		2262231
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	97	96	98	2237999	89		2262335
4-Bromofluorobenzene	%	102	99	103	2237999	102		2262335
D10-Ethylbenzene	%	100	99	107	2237999	89		2262335
D4-1,2-Dichloroethane	%	94	95	94	2237999	105		2262335
o-Terphenyl	%	106	108	103	2237840	87		2262231

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4314	GV4315	GV4316	GV4318		
Sampling Date		2010/08/09 10:05	2010/08/09 14:40	2010/08/09 15:10	2010/08/09 15:45		
COC Number		200692-0	200692-0	200692-0	200692-0		
	Units	**TP7-L-4**	**TP2-K-2**	**TP3-K-2**	**TP4-K-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237999
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237999
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237999
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237999
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237840
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	22	53	10	2237840
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	11	28	10	2237840
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237840
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	98	97	99	99		2237999
4-Bromofluorobenzene	%	101	99	99	100		2237999
D10-Ethylbenzene	%	104	104	104	103		2237999
D4-1,2-Dichloroethane	%	98	95	95	96		2237999
o-Terphenyl	%	110	109	108	112		2237840

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4320	GV4348	GV4350	GV4352		
Sampling Date		2010/08/09 16:10	2010/08/09 16:30	2010/08/10 09:25	2010/08/10 10:00		
COC Number		200692-0	200692-0	200692-0	200692-0		
	Units	**TP5-K-2**	**TP6-K-2**	**TP1-J-1**	**TP2-J-1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2237999
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2237999
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2237999
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2237999
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2237999
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2237999
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237840
F3 (C16-C34 Hydrocarbons)	ug/g	14	30	<10	<10	10	2237840
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2237840
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2237840
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	98	99	94	95		2237999
4-Bromofluorobenzene	%	99	100	101	102		2237999
D10-Ethylbenzene	%	110	103	89	95		2237999
D4-1,2-Dichloroethane	%	96	97	106	104		2237999
o-Terphenyl	%	106	103	110	108		2237840

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4353	GV4354	GV4356	GV4357		
Sampling Date		2010/08/10 11:00	2010/08/10 10:35	2010/08/10 10:00	2010/08/10 10:30		
COC Number		200692-0	200692-0	200692-0	200692-0		
	Units	**TP3.5-I-3**	**TP1-H-2**	**TP2-GH-2**	**TP3-GH-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2238040
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2238040
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2238040
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2238040
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2238040
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2238040
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2238040
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2238040
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2238045
F3 (C16-C34 Hydrocarbons)	ug/g	18	<10	87	<10	10	2238045
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	18	<10	10	2238045
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2238045
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	105	98	98	97		2238040
4-Bromofluorobenzene	%	101	99	99	99		2238040
D10-Ethylbenzene	%	102	106	105	102		2238040
D4-1,2-Dichloroethane	%	98	96	97	96		2238040
o-Terphenyl	%	95	96	100	97		2238045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0545
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: PC

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		GV4280	GV4280		
Sampling Date		2010/08/10 09:10	2010/08/10 09:10		
COC Number		200692-1	200692-1		
	Units	**TP2-EF-1**	**TP2-EF-1 Lab-Dup**	**RDL**	**QC Batch**
Petroleum Hydrocarbons					
Benzene	mg/kg	<0.03		0.03	2251347
Toluene	mg/kg	<0.03		0.03	2251347
Ethylbenzene	mg/kg	<0.03		0.03	2251347
Xylene (Total)	mg/kg	<0.05		0.05	2251347
Aliphatic >C6-C8	mg/kg	0.5 (1)		0.2	2251347
Aliphatic >C8-C10	mg/kg	58		0.4	2251347
>C8-C10 Aromatics (-EX)	mg/kg	2.2		0.1	2251347
Aliphatic >C10-C12	mg/kg	150	100	8.0	2238098
Aliphatic >C12-C16	mg/kg	390	270	15	2238098
Aliphatic >C16-C21	mg/kg	84	61	15	2238098
Aliphatic >C21-<C32	mg/kg	31	22	15	2238098
Aromatic >C10-C12	mg/kg	11	9.2	4.0	2238098
Aromatic >C12-C16	mg/kg	71	58	15	2238098
Aromatic >C16-C21	mg/kg	30	26	15	2238098
Aromatic >C21-<C32	mg/kg	31	38	15	2238098
Modified TPH (Tier 2)	mg/kg	860		20	2255593
Surrogate Recovery (%)					
Isobutylbenzene - Extractable	%	86	104		2238098
n-Dotriacontane - Extractable	%	94 (2)	94		2238098
Isobutylbenzene - Volatile	%	89			2251347

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated VPH RDL(s) due to detected levels in the method blank.
(2) Fuel oil fraction.

Maxxam Job #: B0B0545
Report Date: 2010/09/15

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GENERAL COMMENTS

F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Sample GV4314-01: F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Sample GV4315-01: F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Sample GV4316-01: F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Sample GV4318-01: F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Sample GV4320-01: F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Sample GV4348-01: F1/BTEX Analysis:
Analysis was performed past sample holding time. This may increase the variability associated with these results.

Results relate only to the items tested.

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
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Quality Assurance Report

Maxxam Job Number: TB0B0545

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237840	DPO	Matrix Spike						
		[GV4303-01]	o-Terphenyl	2010/08/18		114	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18		105	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/18		105	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/18		105	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/18		109	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18		93	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/18		93	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/18		93	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/18		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/18	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/18	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/18	<10		ug/g	
		RPD [GV4303-01]	F2 (C10-C16 Hydrocarbons)	2010/08/18	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/08/18	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/18	NC		%	50
2237999	LRA	Matrix Spike						
		[GV4275-01]	1,4-Difluorobenzene	2010/08/19		101	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		101	%	60 - 140
			D10-Ethylbenzene	2010/08/19		105	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		95	%	60 - 140
			Benzene	2010/08/19		86	%	60 - 140
			Toluene	2010/08/19		92	%	60 - 140
			Ethylbenzene	2010/08/19		97	%	60 - 140
			o-Xylene	2010/08/19		101	%	60 - 140
			p+m-Xylene	2010/08/19		99	%	60 - 140
			F1 (C6-C10)	2010/08/19		89	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/19		102	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		99	%	60 - 140
			D10-Ethylbenzene	2010/08/19		109	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		96	%	60 - 140
			Benzene	2010/08/19		88	%	60 - 140
			Toluene	2010/08/19		94	%	60 - 140
			Ethylbenzene	2010/08/19		98	%	60 - 140
			o-Xylene	2010/08/19		100	%	60 - 140
			p+m-Xylene	2010/08/19		100	%	60 - 140
			F1 (C6-C10)	2010/08/19		91	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/19		103	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		99	%	60 - 140
			D10-Ethylbenzene	2010/08/19		107	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		95	%	60 - 140
			Benzene	2010/08/19	<0.005		ug/g	
			Toluene	2010/08/19	<0.02		ug/g	
			Ethylbenzene	2010/08/19	<0.01		ug/g	
			o-Xylene	2010/08/19	<0.02		ug/g	
			p+m-Xylene	2010/08/19	<0.04		ug/g	
			Total Xylenes	2010/08/19	<0.04		ug/g	
			F1 (C6-C10)	2010/08/19	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/19	<10		ug/g	
		RPD [GV4275-01]	Benzene	2010/08/19	NC		%	50
			Toluene	2010/08/19	NC		%	50
			Ethylbenzene	2010/08/19	NC		%	50
			o-Xylene	2010/08/19	NC		%	50
			p+m-Xylene	2010/08/19	NC		%	50
			Total Xylenes	2010/08/19	NC		%	50

Stantec Consulting Ltd
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Client Project #: 1236000017
P.O. #: 16300NR
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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0545

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237999	LRA	RPD [GV4275-01]	F1 (C6-C10)	2010/08/19	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/19	NC		%	50
2238040	LRA	Matrix Spike	1,4-Difluorobenzene	2010/08/19		104	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		100	%	60 - 140
			D10-Ethylbenzene	2010/08/19		104	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		95	%	60 - 140
			Benzene	2010/08/19		82	%	60 - 140
			Toluene	2010/08/19		88	%	60 - 140
			Ethylbenzene	2010/08/19		91	%	60 - 140
			o-Xylene	2010/08/19		93	%	60 - 140
			p+m-Xylene	2010/08/19		93	%	60 - 140
			F1 (C6-C10)	2010/08/19		92	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/19		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		99	%	60 - 140
			D10-Ethylbenzene	2010/08/19		104	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		96	%	60 - 140
			Benzene	2010/08/19		82	%	60 - 140
			Toluene	2010/08/19		91	%	60 - 140
			Ethylbenzene	2010/08/19		91	%	60 - 140
			o-Xylene	2010/08/19		93	%	60 - 140
			p+m-Xylene	2010/08/19		93	%	60 - 140
			F1 (C6-C10)	2010/08/19		87	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/19		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		101	%	60 - 140
			D10-Ethylbenzene	2010/08/19		102	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		97	%	60 - 140
			Benzene	2010/08/19	<0.005		ug/g	
			Toluene	2010/08/19	<0.02		ug/g	
			Ethylbenzene	2010/08/19	<0.01		ug/g	
			o-Xylene	2010/08/19	<0.02		ug/g	
			p+m-Xylene	2010/08/19	<0.04		ug/g	
			Total Xylenes	2010/08/19	<0.04		ug/g	
			F1 (C6-C10)	2010/08/19	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/19	<10		ug/g	
		RPD	Benzene	2010/08/19	NC		%	50
			Toluene	2010/08/19	NC		%	50
			Ethylbenzene	2010/08/19	NC		%	50
			o-Xylene	2010/08/19	NC		%	50
			p+m-Xylene	2010/08/19	NC		%	50
			Total Xylenes	2010/08/19	NC		%	50
			F1 (C6-C10)	2010/08/19	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/19	NC		%	50
2238045	BLZ	Matrix Spike	o-Terphenyl	2010/08/20		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/20		85	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/20		96	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/20		85	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/20		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/20	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/20	<10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/20	NC		%	50

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0545

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2238045	BLZ	RPD	F3 (C16-C34 Hydrocarbons)	2010/08/20	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/20	NC		%	50
2238098	KKE	Spiked Blank	Aliphatic >C10-C12	2010/08/20		102	%	30 - 130
			Aliphatic >C12-C16	2010/08/20		103	%	30 - 130
			Aliphatic >C16-C21	2010/08/20		104	%	30 - 130
			Aliphatic >C21-<C32	2010/08/20		104	%	30 - 130
			Aromatic >C10-C12	2010/08/20		104	%	30 - 130
			Aromatic >C12-C16	2010/08/20		97	%	30 - 130
			Aromatic >C16-C21	2010/08/20		96	%	30 - 130
			Aromatic >C21-<C32	2010/08/20		94	%	30 - 130
		Method Blank	Isobutylbenzene - Extractable	2010/08/20		94	%	30 - 130
			n-Dotriacontane - Extractable	2010/08/20		114	%	30 - 130
			Aliphatic >C10-C12	2010/08/20	<8.0		mg/kg	
			Aliphatic >C12-C16	2010/08/20	<15		mg/kg	
			Aliphatic >C16-C21	2010/08/20	<15		mg/kg	
			Aliphatic >C21-<C32	2010/08/20	<15		mg/kg	
			Aromatic >C10-C12	2010/08/20	<4.0		mg/kg	
			Aromatic >C12-C16	2010/08/20	<15		mg/kg	
			Aromatic >C16-C21	2010/08/20	<15		mg/kg	
			Aromatic >C21-<C32	2010/08/20	<15		mg/kg	
		RPD [GV4280-02]	Aliphatic >C10-C12	2010/08/20	42.4		%	50
			Aliphatic >C12-C16	2010/08/20	35.8		%	50
			Aliphatic >C16-C21	2010/08/20	NC		%	50
			Aliphatic >C21-<C32	2010/08/20	NC		%	50
			Aromatic >C10-C12	2010/08/20	NC		%	50
			Aromatic >C12-C16	2010/08/20	NC		%	50
			Aromatic >C16-C21	2010/08/20	NC		%	50
			Aromatic >C21-<C32	2010/08/20	NC		%	50
2240360	SAC	Matrix Spike	Chromium (VI)	2010/08/20		92	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/20		103	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/20	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/20	NC		%	25
2248066	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/27		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/27		99	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/27		97	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/27		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/27		99	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/27		103	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/27		102	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/27		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/27		98	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/27		93	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/27		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/27		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/27		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/27		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/27		94	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/27		97	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/27		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/27		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/27		97	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/27		112	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/27		100	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/27		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/27		NC	%	75 - 125

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0545

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2248066	KCO	Matrix Spike	Acid Extractable Mercury (Hg)	2010/08/27		113	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/27		106	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/27		105	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/27		102	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/27		102	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/27		94	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/27		106	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/27		102	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/27		102	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/27		104	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/27		101	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/27		110	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/27		104	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/27		104	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/27		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/27		104	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/27		104	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/27		100	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/27		103	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/27		101	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/27		102	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/27		104	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/27		106	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/27		106	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/27		112	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/27	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/27	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/27	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/27	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/27	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/27	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/27	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/27	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/27	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/27	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/27	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/27	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/27	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/27	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/27	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/27	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/27	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/27	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/27	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/27	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/27	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/27	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/27	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/27	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/27	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/27	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/27	9.8		%	35
			Acid Extractable Beryllium (Be)	2010/08/27	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/27	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/27	6.6		%	35

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2248066	KCO	RPD	Acid Extractable Cobalt (Co)	2010/08/27	7.4		%	35
			Acid Extractable Copper (Cu)	2010/08/27	0.7		%	35
			Acid Extractable Lead (Pb)	2010/08/27	2.7		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/27	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/27	14.8		%	35
			Acid Extractable Selenium (Se)	2010/08/27	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/27	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/27	NC		%	35
			Acid Extractable Uranium (U)	2010/08/27	60.8 (1)		%	25
			Acid Extractable Vanadium (V)	2010/08/27	7.9		%	35
			Acid Extractable Zinc (Zn)	2010/08/27	2.4		%	35
			Acid Extractable Mercury (Hg)	2010/08/27	NC		%	35
2249975	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/30		103	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/30	<0.05		ug/g	
2251347	ASL	Spiked Blank	Isobutylbenzene - Volatile	2010/08/31		100	%	60 - 140
			Benzene	2010/08/31		94	%	60 - 140
			Toluene	2010/08/31		96	%	60 - 140
			Ethylbenzene	2010/08/31		96	%	60 - 140
			Xylene (Total)	2010/08/31		97	%	60 - 140
		Method Blank	Isobutylbenzene - Volatile	2010/08/31		97	%	60 - 140
			Benzene	2010/08/31	<0.03		mg/kg	
			Toluene	2010/08/31	<0.03		mg/kg	
			Ethylbenzene	2010/08/31	<0.03		mg/kg	
			Xylene (Total)	2010/08/31	<0.05		mg/kg	
			Aliphatic >C6-C8	2010/08/31	<0.2 (2)		mg/kg	
			Aliphatic >C8-C10	2010/08/31	<0.4		mg/kg	
			>C8-C10 Aromatics (-EX)	2010/08/31	<0.1		mg/kg	
2251706	GKL	RPD [GV4308-01]	Moisture	2010/08/31	0.9		%	20
2251831	SAC	Matrix Spike	Chromium (VI)	2010/09/02		87	%	75 - 125
		QC Standard	Chromium (VI)	2010/09/02		118	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/09/02		103	%	80 - 120
		Method Blank	Chromium (VI)	2010/09/02	<0.2		ug/g	
		RPD	Chromium (VI)	2010/09/02	NC		%	25
2252150	GKL	QC Standard	Sieve - #200 (<0.075mm)	2010/09/01		66	%	N/A
			Sieve - #200 (>0.075mm)	2010/09/01		34	%	N/A
		RPD	Sieve - #200 (<0.075mm)	2010/08/31	0.6		%	20
			Sieve - #200 (>0.075mm)	2010/08/31	5.1		%	20
2252203	GKL	RPD [GV4354-01]	Moisture	2010/08/31	NC		%	20
2252245	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2010/09/01		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/01		100	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/01		100	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/01		94	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/01		99	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/01		93	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/01		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/01		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/01		97	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/01		96	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/01		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/01		95	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/01		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/01		102	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/01		100	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/01		98	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/01		98	%	75 - 125

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2252245	VIV	Matrix Spike	Acid Extractable Strontium (Sr)	2010/09/01		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/01		90	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/01		104	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/01		93	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/01		104	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/01		NC (3)	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/01		104	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/09/01		104	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/01		102	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/01		98	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/01		99	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/01		100	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/01		93	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/01		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/01		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/01		98	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/01		95	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/01		103	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/01		96	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/01		94	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/01		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/01		98	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/01		98	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/01		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/01		94	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/01		95	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/01		99	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/01		92	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/01		99	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/01		97	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/01		108	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/09/01	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/09/01	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/09/01	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/09/01	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/09/01	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/09/01	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/09/01	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/09/01	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/09/01	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/09/01	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/09/01	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/09/01	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/09/01	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/09/01	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/09/01	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/09/01	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/09/01	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/09/01	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/09/01	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/09/01	<5		ug/g	
			Acid Extractable Uranium (U)	2010/09/01	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/09/01	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/09/01	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/09/01	<0.05		ug/g	

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2252245	VIV	RPD	Acid Extractable Arsenic (As)	2010/09/01	11.1		%	35
			Acid Extractable Barium (Ba)	2010/09/01	3.0		%	35
			Acid Extractable Chromium (Cr)	2010/09/01	8.8		%	35
			Acid Extractable Copper (Cu)	2010/09/01	7.4		%	35
			Acid Extractable Lead (Pb)	2010/09/01	4.9		%	35
			Acid Extractable Zinc (Zn)	2010/09/01	8.8		%	35
2252639	SAC	Matrix Spike	Chromium (VI)	2010/09/02		95	%	75 - 125
		QC Standard	Chromium (VI)	2010/09/02		118	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/09/02		102	%	80 - 120
		Method Blank	Chromium (VI)	2010/09/02	<0.2		ug/g	
		RPD	Chromium (VI)	2010/09/02	NC		%	25
2252710	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/09/01		100	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/09/01	<0.05		ug/g	
		RPD	Hot Water Ext. Boron (B)	2010/09/01	6.2		%	35
2253856	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/09/02		102	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/09/02	<0.05		ug/g	
2254076	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2010/09/02		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/02		92	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/02		90	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/02		94	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/02		96	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/02		88	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/02		96	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/02		93	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/02		93	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/02		92	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/02		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/02		93	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/02		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/02		95	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/02		94	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/02		93	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/02		95	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/02		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/02		83	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/02		95	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/02		96	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/02		91	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/02		97	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/02		96	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/09/02		107	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/02		100	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/02		100	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/02		102	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/02		108	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/02		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/02		108	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/02		102	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/02		101	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/02		103	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/02		112	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/02		106	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/02		105	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/02		104	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/02		102	%	75 - 125

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2254076	VIV	QC Standard	Acid Extractable Selenium (Se)	2010/09/02		103	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/02		105	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/02		97	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/02		87	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/02		106	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/02		107	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/02		107	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/02		106	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/02		112	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/09/02	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/09/02	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/09/02	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/09/02	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/09/02	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/09/02	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/09/02	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/09/02	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/09/02	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/09/02	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/09/02	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/09/02	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/09/02	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/09/02	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/09/02	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/09/02	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/09/02	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/09/02	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/09/02	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/09/02	<5		ug/g	
			Acid Extractable Uranium (U)	2010/09/02	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/09/02	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/09/02	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/09/02	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/09/02	NC		%	35
			Acid Extractable Arsenic (As)	2010/09/02	NC		%	35
			Acid Extractable Barium (Ba)	2010/09/02	13.6		%	35
			Acid Extractable Beryllium (Be)	2010/09/02	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/09/02	NC		%	35
			Acid Extractable Chromium (Cr)	2010/09/02	NC		%	35
			Acid Extractable Cobalt (Co)	2010/09/02	0.06		%	35
			Acid Extractable Copper (Cu)	2010/09/02	4.6		%	35
			Acid Extractable Lead (Pb)	2010/09/02	NC		%	35
			Acid Extractable Molybdenum (Mo)	2010/09/02	NC		%	35
			Acid Extractable Nickel (Ni)	2010/09/02	10.9		%	35
			Acid Extractable Selenium (Se)	2010/09/02	NC		%	35
			Acid Extractable Silver (Ag)	2010/09/02	NC		%	35
			Acid Extractable Thallium (Tl)	2010/09/02	NC		%	35
			Acid Extractable Vanadium (V)	2010/09/02	NC		%	35
			Acid Extractable Zinc (Zn)	2010/09/02	NC		%	35
			Acid Extractable Mercury (Hg)	2010/09/02	NC		%	35
2262231	NCI	Spiked Blank	o-Terphenyl	2010/09/15		97	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/15		85	%	60 - 130
		RPD	F2 (C10-C16 Hydrocarbons)	2010/09/15	0		%	50
		Spiked Blank	F3 (C16-C34 Hydrocarbons)	2010/09/15		85	%	60 - 130
		RPD	F3 (C16-C34 Hydrocarbons)	2010/09/15	0		%	50

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2262231	NCI	Spiked Blank	F4 (C34-C50 Hydrocarbons)	2010/09/15		85	%	60 - 130
		RPD	F4 (C34-C50 Hydrocarbons)	2010/09/15	0		%	50
		Method Blank	o-Terphenyl	2010/09/10		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/10	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/09/10	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/09/10	<10		ug/g	
2262335	LRA	Spiked Blank	1,4-Difluorobenzene	2010/09/13		98	%	60 - 140
			4-Bromofluorobenzene	2010/09/13		97	%	60 - 140
			D10-Ethylbenzene	2010/09/13		108	%	30 - 130
			D4-1,2-Dichloroethane	2010/09/13		113	%	60 - 140
			Benzene	2010/09/13		93	%	60 - 140
		RPD	Benzene	2010/09/13	6.9		%	50
		Spiked Blank	Toluene	2010/09/13		100	%	60 - 140
		RPD	Toluene	2010/09/13	3.7		%	50
		Spiked Blank	Ethylbenzene	2010/09/13		102	%	60 - 140
		RPD	Ethylbenzene	2010/09/13	4.5		%	50
		Spiked Blank	o-Xylene	2010/09/13		107	%	60 - 140
		RPD	o-Xylene	2010/09/13	2.7		%	50
		Spiked Blank	p+m-Xylene	2010/09/13		102	%	60 - 140
		RPD	p+m-Xylene	2010/09/13	1.7		%	50
		Spiked Blank	F1 (C6-C10)	2010/09/13		91	%	60 - 140
		RPD	F1 (C6-C10)	2010/09/13	6.9		%	50
		Method Blank	1,4-Difluorobenzene	2010/09/13		100	%	60 - 140
			4-Bromofluorobenzene	2010/09/13		98	%	60 - 140
			D10-Ethylbenzene	2010/09/13		100	%	30 - 130
			D4-1,2-Dichloroethane	2010/09/13		118	%	60 - 140
			Benzene	2010/09/13	<0.005		ug/g	
			Toluene	2010/09/13	<0.02		ug/g	
			Ethylbenzene	2010/09/13	<0.01		ug/g	
			o-Xylene	2010/09/13	<0.02		ug/g	
			p+m-Xylene	2010/09/13	<0.04		ug/g	
			Total Xylenes	2010/09/13	<0.04		ug/g	
			F1 (C6-C10)	2010/09/13	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/09/13	<10		ug/g	

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(2) Elevated VPH RDL(s) due to detected levels in the method blank.
(3) The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.

Maxxam Analytics

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200692
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680	Address:		Project #:	1236000017	CHAIN OF CUSTODY #:	PROJECT MANAGER:
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III ESA	C#200692-13-01	RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	PC/MR/MN		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality: _____
- Other (specify): CCME CWS — Report Criteria on C of A? ☐

SPECIAL INSTRUCTIONS:

Note: For 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:

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Job Specific Rush TAT (if applies to entire submission)
Date Required: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ *(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 BTEX/F1-F4	CCME PAHs	extract & hold for BTEX/F1-F4	PAHs	CCME Subtract & Naphthalene/Methylnaphthalenes	# of Bottles	Comments
		TP1-F-4	Aug10/10	1300	Soil			✓					3	
		TP1.5-F-1	Aug10/10	1500	Soil			✓					4	
		TP1.5-F-4	Aug10/10	1505	Soil					✓			4	
		TP2-F-1	Aug10/10	0930	Soil			✓					4	REC'D IN OTTAWA
5		~~TP2-F-4~~	~~Aug11/10~~	~~0935~~	~~Soil~~					✓			3	
		TP1.5-EF-3	Aug10/10	16:10	Soil			✓					4	
		TP2-EF-1	Aug11/10	0910	Soil			✓	✓	✓	✓	✓	4	
		TP2-EF-2	Aug11/10	0915	Soil					✓			4	
		TP1.5-E-1	Aug11/10	1635	Soil			✓					4	
		TP1.5-E-3	Aug11/10	16:40	Soil					✓			4	once

16-Aug-10 11:38
RENATA SPENA
B0B0545
J_R OTT-014

*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 Intact on Cooler?
Patricia Coyne Patricia Coyne	10/08/12	0900	Jessica R.	10/08/16	11:38		☐	10,6,12	☐ 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

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CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200692
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680 Yellowknife NT X1A2P3	Address:		Project #:	1236000017	CHAIN OF CUSTODY #: C#200692-12-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Project Name:	Clyde River Phase II ESA		
Email:	Patricia.Coyne@stantec.com	Email:		Site #:			
				Sampled By:	PC/MN/MR		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 — ☐ Residential/Parkland ☐ Industrial/Commercial
- ☐ Reg. 558 — ☐ Table 3 ☐ Table 6 — ☐ Medium/Fine ☐ Coarse — Municipality
- Other (specify) — Report Criteria on C of A ? ☐

SPECIAL INSTRUCTIONS

Note: For 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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Job Specific Rush TAT (if applies to entire submission) ☐
Date Required: Time Required:
Rush Confirmation Number: (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 BTEX/F1-F4	CCME Metals	Extract & Hold for BTEX/F1-F4	PAHs	CCME Subtract & Hold for Hydrocarbons					# of Bottles	Comments
1		TP0.5-G-1	Aug 10/10	11:05	soil			✓									3	
2		TP0.5-G-2	Aug 10/10	11:10	soil					✓							3	
3		TP0.5-G-4	Aug 10/10	11:15	soil			✓									3	
4		TP1-G-2	Aug 10/10	11:35	soil			✓									4	
5		TP1-G-4	Aug 10/10	11:40	soil					✓							3	REC'D IN OTTAWA
6		TP1-FG-1	Aug 10/10	1345	soil			✓									4	
7		~~TP1-FG-3~~	~~Aug 10/10~~	~~1350~~	~~soil~~					✓							3	
8		TP1.5-FG-1	Aug 10/10	1550	soil					✓							4	
9		TP1.5-FG-4	Aug 10/10	~~1555~~ 1355	soil			✓									4	
10		TP1-F-3	Aug 10/10	~~1505~~ 1355	soil			✓									4	ONIC

*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 Intact on Cooler?
Patricia Coyne	10/08/12	0900	Jessica R	10/08/16	11:38		☐	10.6.12	☐ Yes ☐ No

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Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680	Address:		Project #:	1236000017	CHAIN OF CUSTODY #:	PROJECT MANAGER:
	Yellowknife NT X1A2P3			Project Name:	Clyde phase III ESA	C#200692-09-01	RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	S PC/MR/MN		

REGULATORY CRITERIA:
☐ MISA Reg. 153/04 Sewer Use ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
☐ Reg. 558 Municipality
Other (specify) CCME CWS Report Criteria on C of A? ☐

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Job Specific Rush TAT (if applies to entire submission)
Date Required: Time Required:
Rush Confirmation Number: (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 BTEX/F1-F4	CCME Metals	Extract and Hold for BTEX/F1-F4	PAHs	CCME Subfractionation Aliphatics+Aromatics	# of Bottles	Comments
1		[redacted] TP7 [redacted] L-2	Aug 9/10	955	Soil					✓			3	
2		TP7-[redacted] L-3	Aug 9/10	1900	Soil					✓			3	
3		TP7-[redacted] L-4	Aug 9/10	1005	Soil			✓					3	
4		TP2-K-2	Aug 9/10	1440	Soil			✓					3	
5		TP3-K-2	Aug 9/10	15:10	Soil			✓					3	
6		TP3-K-3	Aug 9/10	15:15	Soil					✓			3	REC'D IN OTTAWA
7		TP4-K-2	Aug 9/10	15:45	Soil			✓					3	
8		TP4-K-3	Aug 9/10	15:50	Soil					✓			3	
9		TP5-K-2	Aug 9/10	16:10	Soil			✓					3	
10		TP5-K-3	Aug 9/10	16:15	Soil					✓			3	on ice

*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 Intact on Cooler?
Patricia Coyne	10/05/12	0900	Jessica	10/09/10	11:38		☐	10,6,12	☐ Yes ☐ No

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Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	1236000017		
Address:	PO Box 1680	Address:		Project #:	1236000017		
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase II ESA	CHAIN OF CUSTODY #: C#200692-08-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	PC/MR/MN		

REGULATORY CRITERIA:
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☐ Table 6 ☐ Coarse
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Date Required: _____ Time Required: _____ ☐
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	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	CCME BTEX/F1-F4	CCME Metals	Extract and Hold for BTEX/F1-F4	PAHs	CCME Subfractionation Aliphatics and Aromatics	Sieve Analyses	Extract and Hold for PAHs	Hold for metals			# of Bottles	Comments
1		TP6-K-2	Aug 9/10	16:30	soil			✓										3	
2		~~PAK-1~~ TP7-K-3	Aug 10/10	0850	soil					✓			✓					3	
3		TP1-J-1	Aug 10/10	0925	soil			✓	✓					✓				3	
4		TP1-J-3	Aug 10/10	0930	soil					✓				✓	✓			3	
5		TP2-J-1	Aug 10/10	1000	soil			✓	✓									3	REC'D IN OTTAWA
6		TP3.5-1-3	Aug 11/10	1100	soil			✓										4	
7		TP1-H-2	Aug 10/10	1035	soil			✓										3	
8		TP1-H-3	Aug 10/10	1040	soil				✓	✓								3	
9		TP2-GH-2	Aug 11/10	1000	soil			✓										4	
10		TP3-GH-2	Aug 11/10	1030	soil			✓										4	on ice

*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 Intact on Cooler?
Patricia Coyne Patricia Coyne	10/08/12	0900	Jessica R	10/09/16	11:38		☐	10.6.12	☐ Yes ☐ No

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White: Maxxam Yellow: Client

Your Project #: B0B0604

Attention: RENATA SPENA
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072692
Received: 2010/08/17, 8:45

Sample Matrix: Soil
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	2	N/A	2010/08/19	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	2	N/A	2010/08/23	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	2	2010/08/18	2010/08/21	AB SOP-00003 AB WI-00016	EPA 3540C/8270D

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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 #: B072692
Report Date: 2010/08/23

MAXXAM ANALYTICS INC.
Client Project #: B0B0604

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W29314	W29315		
Sampling Date		2010/08/11	2010/08/11		
	Units	**GV4561-02R\TP3.5-F-2**	**GV4563-02R\TP3.5-E-3**	**RDL**	**QC Batch**
Physical Properties					
Moisture	%	16	31	0.3	4192728

RDL = Reportable Detection Limit

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W29314		W29315		
Sampling Date		2010/08/11		2010/08/11		
	Units	**GV4561-02R\TP3.5-F-2**	**RDL**	**GV4563-02R\TP3.5-E-3**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Acenaphthene	mg/kg	2.5	0.0050	4.8 (1)	4.8	4193614
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	<0.1	0.1	4190025
Acenaphthylene	mg/kg	0.31	0.0050	<0.90 (1)	0.90	4193614
Acridine	mg/kg	<0.010	0.010	<0.010	0.010	4193614
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	0.0040	4193614
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	0.046	0.0050	4193614
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	0.024	0.0050	4193614
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	0.0095 (1)	0.0095	4193614
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	0.011	0.0050	4193614
Benzo[e]pyrene	mg/kg	<0.0050	0.0050	0.017	0.0050	4193614
Chrysene	mg/kg	<0.0050	0.0050	0.085	0.0050	4193614
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Fluoranthene	mg/kg	<0.0050	0.0050	0.34	0.0050	4193614
Fluorene	mg/kg	4.9	0.0050	13 (1)	0.50	4193614
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
2-Methylnaphthalene	mg/kg	73 (2)	0.050	240 (2)	0.50	4193614
Naphthalene	mg/kg	18 (2)	0.050	88 (2)	0.50	4193614
Phenanthrene	mg/kg	1.9	0.0050	9.5	0.0050	4193614
Perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	4193614
Pyrene	mg/kg	0.0089	0.0050	0.31	0.0050	4193614
Quinoline	mg/kg	<0.010	0.010	<1.0 (1)	1.0	4193614
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	111	N/A	103	N/A	4193614
D12-BENZO(A)PYRENE (sur.)	%	114	N/A	129	N/A	4193614
D8-ACENAPHTHYLENE (sur.)	%	99	N/A	107	N/A	4193614
TERPHENYL-D14 (sur.)	%	115	N/A	127	N/A	4193614

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference
(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

Package 1	2.7°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0604
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB072692

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4192728	APA	Method Blank	Moisture	2010/08/19	<0.3		%	
		RPD	Moisture	2010/08/19	0		%	20
4193614	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/21		112	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/21		102	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/21		104	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/21		111	%	30 - 130
			Acenaphthene	2010/08/21		97	%	30 - 130
			Acenaphthylene	2010/08/21		95	%	30 - 130
			Acridine	2010/08/21		39	%	30 - 130
			Anthracene	2010/08/21		88	%	30 - 130
			Benzo(a)anthracene	2010/08/21		97	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/21		100	%	30 - 130
			Benzo(k)fluoranthene	2010/08/21		90	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/21		93	%	30 - 130
			Benzo(c)phenanthrene	2010/08/21		95	%	30 - 130
			Benzo(a)pyrene	2010/08/21		96	%	30 - 130
			Benzo[e]pyrene	2010/08/21		94	%	30 - 130
			Chrysene	2010/08/21		123	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/21		104	%	30 - 130
			Fluoranthene	2010/08/21		99	%	30 - 130
			Fluorene	2010/08/21		99	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/21		93	%	30 - 130
			2-Methylnaphthalene	2010/08/21		92	%	30 - 130
			Naphthalene	2010/08/21		94	%	30 - 130
			Phenanthrene	2010/08/21		96	%	30 - 130
			Perylene	2010/08/21		88	%	30 - 130
			Pyrene	2010/08/21		99	%	30 - 130
			Quinoline	2010/08/21		100	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/21		107	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/21		104	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/21		100	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/21		103	%	30 - 130
			Acenaphthene	2010/08/21		97	%	30 - 130
			Acenaphthylene	2010/08/21		98	%	30 - 130
			Acridine	2010/08/21		54	%	30 - 130
			Anthracene	2010/08/21		90	%	30 - 130
			Benzo(a)anthracene	2010/08/21		101	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/21		110	%	30 - 130
			Benzo(k)fluoranthene	2010/08/21		96	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/21		99	%	30 - 130
			Benzo(c)phenanthrene	2010/08/21		95	%	30 - 130
			Benzo(a)pyrene	2010/08/21		104	%	30 - 130
			Benzo[e]pyrene	2010/08/21		100	%	30 - 130
			Chrysene	2010/08/21		125	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/21		108	%	30 - 130
			Fluoranthene	2010/08/21		102	%	30 - 130
			Fluorene	2010/08/21		99	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/21		101	%	30 - 130
			2-Methylnaphthalene	2010/08/21		92	%	30 - 130
			Naphthalene	2010/08/21		96	%	30 - 130
			Phenanthrene	2010/08/21		97	%	30 - 130
			Perylene	2010/08/21		95	%	30 - 130
			Pyrene	2010/08/21		101	%	30 - 130
			Quinoline	2010/08/21		119	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/20		106	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: RENATA SPENA
Client Project #: B0B0604
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB072692

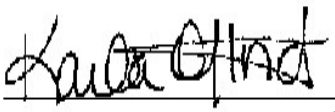
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4193614	JA3	Method Blank	D12-BENZO(A)PYRENE (sur.)	2010/08/20		98	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		97	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/20		100	%	30 - 130
			Acenaphthene	2010/08/20	<0.0050		mg/kg	
			Acenaphthylene	2010/08/20	<0.0050		mg/kg	
			Acridine	2010/08/20	<0.010		mg/kg	
			Anthracene	2010/08/20	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/20	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/20	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/20	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/20	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/20	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/20	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/20	<0.0050		mg/kg	
			Chrysene	2010/08/20	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/20	<0.0050		mg/kg	
			Fluoranthene	2010/08/20	<0.0050		mg/kg	
			Fluorene	2010/08/20	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/20	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/20	<0.0050		mg/kg	
			Naphthalene	2010/08/20	<0.0050		mg/kg	
			Phenanthrene	2010/08/20	<0.0050		mg/kg	
			Perylene	2010/08/20	<0.0050		mg/kg	
			Pyrene	2010/08/20	<0.0050		mg/kg	
			Quinoline	2010/08/20	<0.010		mg/kg	
		RPD	Acenaphthene	2010/08/21	NC		%	50
			Acenaphthylene	2010/08/21	NC		%	50
			Anthracene	2010/08/21	NC		%	50
			Benzo(a)anthracene	2010/08/21	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/21	NC		%	50
			Benzo(k)fluoranthene	2010/08/21	NC		%	50
			Benzo(g,h,i)perylene	2010/08/21	NC		%	50
			Benzo(a)pyrene	2010/08/21	NC		%	50
			Chrysene	2010/08/21	NC		%	50
			Dibenz(a,h)anthracene	2010/08/21	NC		%	50
			Fluoranthene	2010/08/21	NC		%	50
			Fluorene	2010/08/21	NC		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/21	NC		%	50
			Naphthalene	2010/08/21	NC		%	50
			Phenanthrene	2010/08/21	NC		%	50
			Pyrene	2010/08/21	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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 #: B072692

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



KARLA OFFORD, Senior Analyst

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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.

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 20066603, 200666-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/09
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B0604
Received: 2010/08/16, 11:38

Sample Matrix: Soil
Samples Received: 14

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	1	2010/08/26	2010/08/27	CAM SOP-00408	R153 Ana. Prot. 2004
Hot Water Extractable Boron	6	2010/09/01	2010/09/01	CAM SOP-00408	R153 Ana. Prot. 2004
Hot Water Extractable Boron	1	2010/09/02	2010/09/02	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (2)	8	N/A	2010/09/01	CAM SOP-00436	EPA SW846-3060/7199
TEH in Soil (AA PIRI) (1)	1	2010/08/17	2010/08/23	ATL SOP 00116 R3	Based on Atl. PIRI
Petroleum Hydro. CCME F1 & BTEX in Soil	2	2010/08/17	2010/08/18	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	9	2010/08/17	2010/08/19	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	8	2010/08/18	2010/08/20	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	3	2010/08/18	2010/09/09	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	1	2010/08/27	2010/08/27	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	6	2010/09/01	2010/09/02	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	1	2010/09/02	2010/09/02	CAM SOP-00447	EPA 6020
Moisture (1)	1	N/A	2010/08/17	ATL SOP 00001 R3	MOE Handbook 1983
Moisture	2	N/A	2010/08/19	CAM SOP-00445	McKeague 2nd ed 1978
Moisture	1	N/A	2010/08/28	CAM SOP-00445	McKeague 2nd ed 1978
Moisture	11	N/A	2010/08/31	CAM SOP-00445	McKeague 2nd ed 1978
Polychlorinated Biphenyl in Soil	1	2010/08/17	2010/08/18	CAM SOP-00309	SW846 8082
VPH in Soil (PIRI2) (1)	1	2010/08/17	2010/09/01	ATL SOP 00120 R4	Based on Atl. PIRI
ModTPH (T2) Calc. for Soil (1)	1	N/A	2010/09/03	n/a	Based on Atl. PIRI

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

(1) This test was performed by Bedford
(2) Soils are reported on a dry weight basis unless otherwise specified.

../2

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 20066603, 200666-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/09
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4558	GV4559			GV4560		GV4561		
Sampling Date		2010/08/11 15:50	2010/08/11 15:50			2010/08/11 16:00		2010/08/11 10:40		
COC Number		200666-0	200666-0			200666-0		200666-0		
	Units	**TP5-B-1**	**DUP F**	**RDL**	**QC Batch**	**TP7-C-2**	**QC Batch**	**TP3.5-F-2**	**RDL**	**QC Batch**
Inorganics										
Chromium (VI)	ug/g	<2	<2	2	2252328	<0.2	2250170	<0.2	0.2	2252328
Moisture	%	27	55	1	2252203	14	2252203	15	1	2236783

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4562		GV4563		GV4593		
Sampling Date		2010/08/11 13:05		2010/08/11 13:10		2010/08/11 09:40		
COC Number		200666-0		200666-0		200666-0		
	Units	**TP3.5-E-1**	**QC Batch**	**TP3.5-E-3**	**QC Batch**	**TP10-E-1**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2	2250170		2250170	<0.2	0.2	2250170
Moisture	%	25	2249519	22	2252203	76	1	2240367

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV4594		GV4595	GV4596		GV4597		
Sampling Date		2010/08/11 09:45		2010/08/11 10:00	2010/08/11 14:05		2010/08/11 13:40		
COC Number		200666-0		200666-0	200666-0		200666-0		
	Units	**TP10-E-3**	**QC Batch**	**TP12.5-E-1**	**TP3-DE-3**	**QC Batch**	**TP3.5-DE-1**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g		2250170	<0.2		2252328	<0.2	0.2	2250170
Moisture	%	8	2252203	55	23	2252203	3	1	2240367

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV4598	GV4599	GV4601		
Sampling Date		2010/08/11 13:45	2010/08/11 13:45	2010/08/11 14:30		
COC Number		200666-0	200666-0	200666-0		
	Units	**TP3.5-DE-2**	**DUP C**	**TP3-D-2**	**RDL**	**QC Batch**
Inorganics						
Moisture	%	8	11	57	1	2252203

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 #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4558	GV4559	GV4560	GV4561		
Sampling Date		2010/08/11 15:50	2010/08/11 15:50	2010/08/11 16:00	2010/08/11 10:40		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**TP5-B-1**	**DUP F**	**TP7-C-2**	**TP3.5-F-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	1.2	1.6	0.11	0.58	0.05	2252710
Acid Extractable Aluminum (Al)	ug/g	8100	6300	9500	9900	50	2252470
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2252470
Acid Extractable Arsenic (As)	ug/g	<1	<1	<1	<1	1	2252470
Acid Extractable Barium (Ba)	ug/g	33	27	36	41	0.5	2252470
Acid Extractable Beryllium (Be)	ug/g	0.2	<0.2	0.3	<0.2	0.2	2252470
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2252470
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2252470
Acid Extractable Chromium (Cr)	ug/g	12	12	14	16	1	2252470
Acid Extractable Cobalt (Co)	ug/g	4.2	3.5	4.7	6.2	0.1	2252470
Acid Extractable Copper (Cu)	ug/g	7.9	6.2	10	11	0.5	2252470
Acid Extractable Iron (Fe)	ug/g	16000	14000	16000	19000	50	2252470
Acid Extractable Lead (Pb)	ug/g	6	6	6	6	1	2252470
Acid Extractable Manganese (Mn)	ug/g	140	120	140	190	1	2252470
Acid Extractable Molybdenum (Mo)	ug/g	0.5	<0.5	<0.5	<0.5	0.5	2252470
Acid Extractable Nickel (Ni)	ug/g	7.5	5.7	8.1	9.0	0.5	2252470
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	<0.5	0.7	0.5	2252470
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2252470
Acid Extractable Strontium (Sr)	ug/g	9	8	5	6	1	2252470
Acid Extractable Thallium (Tl)	ug/g	0.19	0.14	0.23	0.24	0.05	2252470
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2252470
Acid Extractable Uranium (U)	ug/g	0.83	0.55	1.2	1.1	0.05	2252470
Acid Extractable Vanadium (V)	ug/g	29	28	32	35	5	2252470
Acid Extractable Zinc (Zn)	ug/g	28	24	30	34	5	2252470
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	2252470

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4562			GV4593		
Sampling Date		2010/08/11 13:05			2010/08/11 09:40		
COC Number		200666-0			200666-0		
	Units	**TP3.5-E-1**	**RDL**	**QC Batch**	**TP10-E-1**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.69	0.05	2252710	3.0	0.1	2253633
Acid Extractable Aluminum (Al)	ug/g	6400	50	2252470	9300	50	2253636
Acid Extractable Antimony (Sb)	ug/g	0.2	0.2	2252470	1.1	0.2	2253636
Acid Extractable Arsenic (As)	ug/g	<1	1	2252470	<1	1	2253636
Acid Extractable Barium (Ba)	ug/g	38	0.5	2252470	90	0.5	2253636
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2252470	<0.2	0.2	2253636
Acid Extractable Bismuth (Bi)	ug/g	<1	1	2252470	<1	1	2253636
Acid Extractable Cadmium (Cd)	ug/g	0.2	0.1	2252470	0.4	0.1	2253636
Acid Extractable Chromium (Cr)	ug/g	9	1	2252470	28	1	2253636
Acid Extractable Cobalt (Co)	ug/g	3.1	0.1	2252470	10	0.1	2253636
Acid Extractable Copper (Cu)	ug/g	11	0.5	2252470	85	0.5	2253636
Acid Extractable Iron (Fe)	ug/g	11000	50	2252470	15000	50	2253636
Acid Extractable Lead (Pb)	ug/g	14	1	2252470	180	1	2253636
Acid Extractable Manganese (Mn)	ug/g	100	1	2252470	720	1	2253636
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	2252470	0.5	0.5	2253636
Acid Extractable Nickel (Ni)	ug/g	5.8	0.5	2252470	15	0.5	2253636
Acid Extractable Selenium (Se)	ug/g	0.7	0.5	2252470	1.2	0.5	2253636
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2252470	0.4	0.2	2253636
Acid Extractable Strontium (Sr)	ug/g	4	1	2252470	40	1	2253636
Acid Extractable Thallium (Tl)	ug/g	0.15	0.05	2252470	0.16	0.05	2253636
Acid Extractable Tin (Sn)	ug/g	<5	5	2252470	11	5	2253636
Acid Extractable Uranium (U)	ug/g	0.72	0.05	2252470	1.6	0.05	2253636
Acid Extractable Vanadium (V)	ug/g	21	5	2252470	21	5	2253636
Acid Extractable Zinc (Zn)	ug/g	40	5	2252470	130	5	2253636
Acid Extractable Mercury (Hg)	ug/g	<0.05	0.05	2252470	0.14	0.05	2253636

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV4595			GV4597		
Sampling Date		2010/08/11 10:00			2010/08/11 13:40		
COC Number		200666-0			200666-0		
	Units	**TP12.5-E-1**	**RDL**	**QC Batch**	**TP3.5-DE-1**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	2.0	0.075	2252710	0.12	0.05	2246853
Acid Extractable Aluminum (Al)	ug/g	6600	50	2252470	920	50	2248066
Acid Extractable Antimony (Sb)	ug/g	5.3	0.2	2252470	<0.2	0.2	2248066
Acid Extractable Arsenic (As)	ug/g	2	1	2252470	<1	1	2248066
Acid Extractable Barium (Ba)	ug/g	41	0.5	2252470	7.5	0.5	2248066
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2252470	<0.2	0.2	2248066
Acid Extractable Bismuth (Bi)	ug/g	<1	1	2252470	<1	1	2248066
Acid Extractable Cadmium (Cd)	ug/g	1.5	0.1	2252470	0.3	0.1	2248066
Acid Extractable Chromium (Cr)	ug/g	18	1	2252470	2	1	2248066
Acid Extractable Cobalt (Co)	ug/g	4.5	0.1	2252470	0.7	0.1	2248066
Acid Extractable Copper (Cu)	ug/g	65	0.5	2252470	2.0	0.5	2248066
Acid Extractable Iron (Fe)	ug/g	25000	50	2252470	2000	50	2248066
Acid Extractable Lead (Pb)	ug/g	1300	1	2252470	3	1	2248066
Acid Extractable Manganese (Mn)	ug/g	170	1	2252470	24	1	2248066
Acid Extractable Molybdenum (Mo)	ug/g	0.8	0.5	2252470	<0.5	0.5	2248066
Acid Extractable Nickel (Ni)	ug/g	13	0.5	2252470	1.5	0.5	2248066
Acid Extractable Selenium (Se)	ug/g	0.6	0.5	2252470	<0.5	0.5	2248066
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2252470	<0.2	0.2	2248066
Acid Extractable Strontium (Sr)	ug/g	19	1	2252470	1	1	2248066
Acid Extractable Thallium (Tl)	ug/g	0.13	0.05	2252470	<0.05	0.05	2248066
Acid Extractable Tin (Sn)	ug/g	28	5	2252470	<5	5	2248066
Acid Extractable Uranium (U)	ug/g	0.61	0.05	2252470	0.05	0.05	2248066
Acid Extractable Vanadium (V)	ug/g	23	5	2252470	<5	5	2248066
Acid Extractable Zinc (Zn)	ug/g	260	5	2252470	8	5	2248066
Acid Extractable Mercury (Hg)	ug/g	0.21	0.05	2252470	<0.05	0.05	2248066

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4558		GV4559		GV4560		
Sampling Date		2010/08/11 15:50		2010/08/11 15:50		2010/08/11 16:00		
COC Number		200666-0		200666-0		200666-0		
	Units	**TP5-B-1**	**RDL**	**DUP F**	**RDL**	**TP7-C-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	0.005	<0.01	0.01	<0.005	0.005	2238040
Toluene	ug/g	<0.02	0.02	<0.04	0.04	<0.02	0.02	2238040
Ethylbenzene	ug/g	<0.01	0.01	<0.02	0.02	<0.01	0.01	2238040
o-Xylene	ug/g	<0.02	0.02	<0.04	0.04	<0.02	0.02	2238040
p+m-Xylene	ug/g	<0.04	0.04	<0.08	0.08	<0.04	0.04	2238040
Total Xylenes	ug/g	<0.04	0.04	<0.08	0.08	<0.04	0.04	2238040
F1 (C6-C10)	ug/g	<10	10	<20	20	<10	10	2238040
F1 (C6-C10) - BTEX	ug/g	<10	10	<20	20	<10	10	2238040
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	<20	20	<10	10	2238045
F3 (C16-C34 Hydrocarbons)	ug/g	33	10	82	20	85	10	2238045
F4 (C34-C50 Hydrocarbons)	ug/g	<10	10	<20	20	31	10	2238045
Reached Baseline at C50	ug/g	Yes		Yes		Yes		2238045
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	102		95		94		2238040
4-Bromofluorobenzene	%	100		102		102		2238040
D10-Ethylbenzene	%	104		104		98		2238040
D4-1,2-Dichloroethane	%	99		107		106		2238040
o-Terphenyl	%	90		95		98		2238045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
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Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4561	GV4563		GV4594	GV4594		
Sampling Date		2010/08/11 10:40	2010/08/11 13:10		2010/08/11 09:45	2010/08/11 09:45		
COC Number		200666-0	200666-0		200666-0	200666-0		
	Units	**TP3.5-F-2**	**TP3.5-E-3**	**RDL**	**TP10-E-3**	**TP10-E-3 Lab-Dup**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.05	<0.05	0.05	<0.005	<0.005	0.005	2238040
Toluene	ug/g	<0.2	<0.2	0.2	<0.02	<0.02	0.02	2238040
Ethylbenzene	ug/g	0.8	2.2	0.1	<0.01	<0.01	0.01	2238040
o-Xylene	ug/g	13	8.1	0.2	<0.02	<0.02	0.02	2238040
p+m-Xylene	ug/g	3.9	4.4	0.4	<0.04	<0.04	0.04	2238040
Total Xylenes	ug/g	17	13	0.4	<0.04	<0.04	0.04	2238040
F1 (C6-C10)	ug/g	1400	560	100	<10	<10	10	2238040
F1 (C6-C10) - BTEX	ug/g	1400	550	100	<10	<10	10	2238040
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	14000	17000	10	<10	<10	10	2238045
F3 (C16-C34 Hydrocarbons)	ug/g	1700	5400	10	25	24	10	2238045
F4 (C34-C50 Hydrocarbons)	ug/g	34	440	10	<10	<10	10	2238045
Reached Baseline at C50	ug/g	Yes	Yes		Yes	Yes		2238045
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	99	91		101	104		2238040
4-Bromofluorobenzene	%	104	105		101	101		2238040
D10-Ethylbenzene	%	122	117		108	108		2238040
D4-1,2-Dichloroethane	%	93	100		97	99		2238040
o-Terphenyl	%	108	115		93	93		2238045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
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Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4595		GV4596	GV4598	GV4599		
Sampling Date		2010/08/11 10:00		2010/08/11 14:05	2010/08/11 13:45	2010/08/11 13:45		
COC Number		200666-0		200666-0	200666-0	200666-0		
	Units	**TP12.5-E-1**	**RDL**	**TP3-DE-3**	**TP3.5-DE-2**	**DUP C**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.01	0.01	<0.005	<0.005	<0.005	0.005	2238040
Toluene	ug/g	<0.04	0.04	<0.02	<0.02	<0.02	0.02	2238040
Ethylbenzene	ug/g	<0.02	0.02	<0.01	<0.01	<0.01	0.01	2238040
o-Xylene	ug/g	<0.04	0.04	<0.02	<0.02	<0.02	0.02	2238040
p+m-Xylene	ug/g	<0.08	0.08	<0.04	<0.04	<0.04	0.04	2238040
Total Xylenes	ug/g	<0.08	0.08	<0.04	<0.04	<0.04	0.04	2238040
F1 (C6-C10)	ug/g	<20	20	<10	13	14	10	2238040
F1 (C6-C10) - BTEX	ug/g	<20	20	<10	13	14	10	2238040
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<20	20	26	460	850	10	2238045
F3 (C16-C34 Hydrocarbons)	ug/g	62	20	99	1600	1900	10	2238045
F4 (C34-C50 Hydrocarbons)	ug/g	<20	20	29	1100	1300	10	2238045
Reached Baseline at C50	ug/g	Yes		Yes	No	No		2238045
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	98		96	99	96		2238040
4-Bromofluorobenzene	%	100		101	100	102		2238040
D10-Ethylbenzene	%	115		100	102	106		2238040
D4-1,2-Dichloroethane	%	96		101	97	100		2238040
o-Terphenyl	%	90		99	98	101		2238045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV4601		
Sampling Date		2010/08/11 14:30		
COC Number		200666-0		
	Units	**TP3-D-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons				
Benzene	ug/g	<0.01	0.01	2238040
Toluene	ug/g	0.11	0.04	2238040
Ethylbenzene	ug/g	<0.02	0.02	2238040
o-Xylene	ug/g	<0.04	0.04	2238040
p+m-Xylene	ug/g	<0.08	0.08	2238040
Total Xylenes	ug/g	<0.08	0.08	2238040
F1 (C6-C10)	ug/g	<20	20	2238040
F1 (C6-C10) - BTEX	ug/g	<20	20	2238040
F2-F4 Hydrocarbons				
F2 (C10-C16 Hydrocarbons)	ug/g	<20	20	2238045
F3 (C16-C34 Hydrocarbons)	ug/g	300	20	2238045
F4 (C34-C50 Hydrocarbons)	ug/g	100	20	2238045
Reached Baseline at C50	ug/g	No		2238045
Surrogate Recovery (%)				
1,4-Difluorobenzene	%	97		2238040
4-Bromofluorobenzene	%	101		2238040
D10-Ethylbenzene	%	101		2238040
D4-1,2-Dichloroethane	%	97		2238040
o-Terphenyl	%	99		2238045

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

ATLANTIC RBCA HYDROCARBONS (SOIL)

Maxxam ID		GV4561		
Sampling Date		2010/08/11 10:40		
COC Number		200666-0		
	Units	**TP3.5-F-2**	**RDL**	**QC Batch**
Petroleum Hydrocarbons				
Benzene	mg/kg	<0.03	0.03	2251347
Toluene	mg/kg	<0.03	0.03	2251347
Ethylbenzene	mg/kg	0.26	0.03	2251347
Xylene (Total)	mg/kg	8.5	0.05	2251347
Aliphatic >C6-C8	mg/kg	47 (1)	2	2251347
Aliphatic >C8-C10	mg/kg	990	4	2251347
>C8-C10 Aromatics (-EX)	mg/kg	230	1	2251347
Aliphatic >C10-C12	mg/kg	2300	80	2238098
Aliphatic >C12-C16	mg/kg	4100	150	2238098
Aliphatic >C16-C21	mg/kg	590	15	2238098
Aliphatic >C21-<C32	mg/kg	19	15	2238098
Aromatic >C10-C12	mg/kg	710	4.0	2238098
Aromatic >C12-C16	mg/kg	1400	15	2238098
Aromatic >C16-C21	mg/kg	240	15	2238098
Aromatic >C21-<C32	mg/kg	65	15	2238098
Modified TPH (Tier 2)	mg/kg	11000	200	2255593
Surrogate Recovery (%)				
Isobutylbenzene - Extractable	%	157 (2)		2238098
n-Dotriacontane - Extractable	%	126 (3)		2238098
Isobutylbenzene - Volatile	%	70		2251347

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) Elevated VPH RDL(s) due to detected levels in the method blank.
(2) TEH surrogate(s) not within acceptance limits due to sample dilution / product interference.
(3) Fuel oil fraction. Elevated TEH RDL(s) due to sample dilution.

Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		GV4561		
Sampling Date		2010/08/11 10:40		
COC Number		200666-0		
	Units	**TP3.5-F-2**	**RDL**	**QC Batch**
PCBs				
Aroclor 1016	ug/g	<0.01	0.01	2237614
Aroclor 1221	ug/g	<0.01	0.01	2237614
Aroclor 1232	ug/g	<0.01	0.01	2237614
Aroclor 1242	ug/g	<0.01	0.01	2237614
Aroclor 1248	ug/g	<0.01	0.01	2237614
Aroclor 1254	ug/g	<0.01	0.01	2237614
Aroclor 1260	ug/g	<0.01	0.01	2237614
Aroclor 1262	ug/g	<0.01	0.01	2237614
Aroclor 1268	ug/g	<0.01	0.01	2237614
Total PCB	ug/g	<0.01	0.01	2237614
Surrogate Recovery (%)				
2,4,5,6-Tetrachloro-m-xylene	%	66		2237614
Decachlorobiphenyl	%	105		2237614

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0604
Report Date: 2010/09/09

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR
Sampler Initials: MN

GENERAL COMMENTS

Triple Silca Gel clean up added as per client request. SAS Sept.9/2010

Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample GV4558-01: F2-F4 Analysis: Triple silica clean up procedure was adopted according to client request.

Sample GV4559-01: F1/BTEX and F2-F4 Analysis:
Detection limits were adjusted for high moisture content.

F2-F4 Analysis: Triple silica clean up procedure was adopted according to client request.

Sample GV4561-01: F1/BTEX Analysis:
Due to high concentration of target analyte(s), sample required dilution. Reporting limits were adjusted accordingly.

Sample GV4563-01: F1/BTEX Analysis:
Due to high concentration of target analyte(s), sample required dilution. Reporting limits were adjusted accordingly.

Sample GV4593-01: B-HOT-EXTR: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample GV4595-01: F1/BTEX and F2-F4 Analysis:
Detection limits were adjusted for high moisture content.

F2-F4 Analysis: Triple silica clean up procedure was adopted according to client request.

B-HOT-EXTR: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Sample GV4601-01: F1/BTEX Analysis:
Detection limits were adjusted for high moisture content.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report

Maxxam Job Number: TB0B0604

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2237614	JZ	Matrix Spike	2,4,5,6-Tetrachloro-m-xylene	2010/08/18		73	%	40 - 130
			Decachlorobiphenyl	2010/08/18		100	%	40 - 130
			Aroclor 1260	2010/08/18		103	%	30 - 130
			Total PCB	2010/08/18		103	%	30 - 130
		Spiked Blank	2,4,5,6-Tetrachloro-m-xylene	2010/08/17		69	%	40 - 130
			Decachlorobiphenyl	2010/08/17		80	%	40 - 130
			Aroclor 1260	2010/08/17		91	%	30 - 130
			Total PCB	2010/08/17		91	%	30 - 130
		Method Blank	2,4,5,6-Tetrachloro-m-xylene	2010/08/17		73	%	40 - 130
			Decachlorobiphenyl	2010/08/17		89	%	40 - 130
			Aroclor 1016	2010/08/17	<0.01		ug/g	
			Aroclor 1221	2010/08/17	<0.01		ug/g	
			Aroclor 1232	2010/08/17	<0.01		ug/g	
			Aroclor 1242	2010/08/17	<0.01		ug/g	
			Aroclor 1248	2010/08/17	<0.01		ug/g	
			Aroclor 1254	2010/08/17	<0.01		ug/g	
			Aroclor 1260	2010/08/17	<0.01		ug/g	
			Aroclor 1262	2010/08/17	<0.01		ug/g	
			Aroclor 1268	2010/08/17	<0.01		ug/g	
			Total PCB	2010/08/17	<0.01		ug/g	
		RPD	Total PCB	2010/08/18	NC		%	50
2238040	LRA	Matrix Spike						
		[GV4594-01]	1,4-Difluorobenzene	2010/08/19		104	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		100	%	60 - 140
			D10-Ethylbenzene	2010/08/19		104	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		95	%	60 - 140
			Benzene	2010/08/19		82	%	60 - 140
			Toluene	2010/08/19		88	%	60 - 140
			Ethylbenzene	2010/08/19		91	%	60 - 140
			o-Xylene	2010/08/19		93	%	60 - 140
			p+m-Xylene	2010/08/19		93	%	60 - 140
			F1 (C6-C10)	2010/08/19		92	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/19		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		99	%	60 - 140
			D10-Ethylbenzene	2010/08/19		104	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		96	%	60 - 140
			Benzene	2010/08/19		82	%	60 - 140
			Toluene	2010/08/19		91	%	60 - 140
			Ethylbenzene	2010/08/19		91	%	60 - 140
			o-Xylene	2010/08/19		93	%	60 - 140
			p+m-Xylene	2010/08/19		93	%	60 - 140
			F1 (C6-C10)	2010/08/19		87	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/19		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/19		101	%	60 - 140
			D10-Ethylbenzene	2010/08/19		102	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/19		97	%	60 - 140
			Benzene	2010/08/19	<0.005		ug/g	
			Toluene	2010/08/19	<0.02		ug/g	
			Ethylbenzene	2010/08/19	<0.01		ug/g	
			o-Xylene	2010/08/19	<0.02		ug/g	
			p+m-Xylene	2010/08/19	<0.04		ug/g	
			Total Xylenes	2010/08/19	<0.04		ug/g	
			F1 (C6-C10)	2010/08/19	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/19	<10		ug/g	
		RPD [GV4594-01]	Benzene	2010/08/19	NC		%	50

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0604

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2238040	LRA	RPD [GV4594-01]	Toluene	2010/08/19	NC		%	50
			Ethylbenzene	2010/08/19	NC		%	50
			o-Xylene	2010/08/19	NC		%	50
			p+m-Xylene	2010/08/19	NC		%	50
			Total Xylenes	2010/08/19	NC		%	50
			F1 (C6-C10)	2010/08/19	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/19	NC		%	50
2238045	BLZ	Matrix Spike [GV4594-01]	o-Terphenyl	2010/08/20		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/20		85	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/20		96	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/20		85	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/20		85	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/20		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/20	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/20	<10		ug/g	
		RPD [GV4594-01]	F2 (C10-C16 Hydrocarbons)	2010/08/20	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/08/20	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/20	NC		%	50
2238098	KKE	Spiked Blank	Aliphatic >C10-C12	2010/08/20		102	%	30 - 130
			Aliphatic >C12-C16	2010/08/20		103	%	30 - 130
			Aliphatic >C16-C21	2010/08/20		104	%	30 - 130
			Aliphatic >C21-<C32	2010/08/20		104	%	30 - 130
			Aromatic >C10-C12	2010/08/20		104	%	30 - 130
			Aromatic >C12-C16	2010/08/20		97	%	30 - 130
			Aromatic >C16-C21	2010/08/20		96	%	30 - 130
			Aromatic >C21-<C32	2010/08/20		94	%	30 - 130
		Method Blank	Isobutylbenzene - Extractable	2010/08/20		94	%	30 - 130
			n-Dotriacontane - Extractable	2010/08/20		114	%	30 - 130
			Aliphatic >C10-C12	2010/08/20	<8.0		mg/kg	
			Aliphatic >C12-C16	2010/08/20	<15		mg/kg	
			Aliphatic >C16-C21	2010/08/20	<15		mg/kg	
			Aliphatic >C21-<C32	2010/08/20	<15		mg/kg	
			Aromatic >C10-C12	2010/08/20	<4.0		mg/kg	
			Aromatic >C12-C16	2010/08/20	<15		mg/kg	
			Aromatic >C16-C21	2010/08/20	<15		mg/kg	
			Aromatic >C21-<C32	2010/08/20	<15		mg/kg	
		RPD	Aliphatic >C10-C12	2010/08/20	42.4		%	50
			Aliphatic >C12-C16	2010/08/20	35.8		%	50
			Aliphatic >C16-C21	2010/08/20	NC		%	50
			Aliphatic >C21-<C32	2010/08/20	NC		%	50
			Aromatic >C10-C12	2010/08/20	NC		%	50
			Aromatic >C12-C16	2010/08/20	NC		%	50
			Aromatic >C16-C21	2010/08/20	NC		%	50
			Aromatic >C21-<C32	2010/08/20	NC		%	50
2240367	DEE	RPD	Moisture	2010/08/19	0		%	20
2246853	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/27		101	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/27	<0.05		ug/g	
2248066	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/27		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/27		99	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/27		97	%	75 - 125

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Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0604

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2248066	KCO	Matrix Spike	Acid Extractable Barium (Ba)	2010/08/27		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/27		99	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/27		103	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/27		102	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/27		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/27		98	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/27		93	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/27		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/27		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/27		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/27		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/27		94	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/27		97	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/27		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/27		99	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/27		97	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/27		112	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/27		100	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/27		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/27		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/27		113	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/27		106	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/27		105	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/27		102	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/27		102	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/27		94	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/27		106	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/27		102	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/27		102	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/27		104	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/27		101	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/27		110	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/27		104	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/27		104	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/27		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/27		104	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/27		104	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/27		100	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/27		103	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/27		101	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/27		102	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/27		104	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/27		106	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/27		106	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/27		112	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/27	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/27	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/27	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/27	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/27	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/27	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/27	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/27	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/27	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/27	<0.5		ug/g	

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2248066	KCO	Method Blank	Acid Extractable Iron (Fe)	2010/08/27	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/27	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/27	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/27	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/27	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/27	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/27	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/27	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/27	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/27	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/27	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/27	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/27	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/27	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/27	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/27	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/27	9.8		%	35
			Acid Extractable Beryllium (Be)	2010/08/27	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/27	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/27	6.6		%	35
			Acid Extractable Cobalt (Co)	2010/08/27	7.4		%	35
			Acid Extractable Copper (Cu)	2010/08/27	0.7		%	35
			Acid Extractable Lead (Pb)	2010/08/27	2.7		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/27	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/27	14.8		%	35
			Acid Extractable Selenium (Se)	2010/08/27	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/27	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/27	NC		%	35
			Acid Extractable Uranium (U)	2010/08/27	60.8 (1)		%	25
			Acid Extractable Vanadium (V)	2010/08/27	7.9		%	35
			Acid Extractable Zinc (Zn)	2010/08/27	2.4		%	35
			Acid Extractable Mercury (Hg)	2010/08/27	NC		%	35
2249519	DEE	RPD	Moisture	2010/08/28	2.2		%	20
2250170	SAC	Matrix Spike	Chromium (VI)	2010/09/01		73 (2)	%	75 - 125
		QC Standard	Chromium (VI)	2010/09/01		103	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/09/01		104	%	80 - 120
		Method Blank	Chromium (VI)	2010/09/01	<0.2		ug/g	
		RPD	Chromium (VI)	2010/09/01	NC		%	25
2251347	ASL	Spiked Blank	Isobutylbenzene - Volatile	2010/08/31		100	%	60 - 140
			Benzene	2010/08/31		94	%	60 - 140
			Toluene	2010/08/31		96	%	60 - 140
			Ethylbenzene	2010/08/31		96	%	60 - 140
			Xylene (Total)	2010/08/31		97	%	60 - 140
		Method Blank	Isobutylbenzene - Volatile	2010/08/31		97	%	60 - 140
			Benzene	2010/08/31	<0.03		mg/kg	
			Toluene	2010/08/31	<0.03		mg/kg	
			Ethylbenzene	2010/08/31	<0.03		mg/kg	
			Xylene (Total)	2010/08/31	<0.05		mg/kg	
			Aliphatic >C6-C8	2010/08/31	<0.2 (3)		mg/kg	
			Aliphatic >C8-C10	2010/08/31	<0.4		mg/kg	
			>C8-C10 Aromatics (-EX)	2010/08/31	<0.1		mg/kg	
2252203	GKL	RPD	Moisture	2010/08/31	NC		%	20
2252328	SAC	Matrix Spike	Chromium (VI)	2010/09/01		50 (2)	%	75 - 125
		QC Standard	Chromium (VI)	2010/09/01		101	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/09/01		92	%	80 - 120

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2252328	SAC	Method Blank	Chromium (VI)	2010/09/01	<0.2		ug/g	
		RPD	Chromium (VI)	2010/09/01	NC		%	25
2252470	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/02		94	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/02		95	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/02		100	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/02		93	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/02		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/02		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/02		95	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/02		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/02		98	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/02		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/02		87	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/02		101	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/02		100	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/02		NC (4)	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/02		110	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/09/02		104	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/02		104	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/02		97	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/02		98	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/02		101	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/02		96	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/02		106	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/02		98	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/02		99	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/02		100	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/02		109	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/02		101	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/02		102	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/02		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/02		100	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/02		100	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/02		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/02		94	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/02		94	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/02		102	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/02		104	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/02		98	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/02		103	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/02		108	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/09/02	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/09/02	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/09/02	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/09/02	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/09/02	<0.2		ug/g	

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2252470	VIV	Method Blank	Acid Extractable Bismuth (Bi)	2010/09/02	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/09/02	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/09/02	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/09/02	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/09/02	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/09/02	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/09/02	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/09/02	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/09/02	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/09/02	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/09/02	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/09/02	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/09/02	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/09/02	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/09/02	<5		ug/g	
			Acid Extractable Uranium (U)	2010/09/02	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/09/02	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/09/02	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/09/02	<0.05		ug/g	
		RPD	Acid Extractable Aluminum (Al)	2010/09/02	0.6		%	35
			Acid Extractable Antimony (Sb)	2010/09/02	NC		%	35
			Acid Extractable Arsenic (As)	2010/09/02	4.8		%	35
			Acid Extractable Barium (Ba)	2010/09/02	3.8		%	35
			Acid Extractable Beryllium (Be)	2010/09/02	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/09/02	NC		%	35
			Acid Extractable Chromium (Cr)	2010/09/02	3.6		%	35
			Acid Extractable Cobalt (Co)	2010/09/02	2.1		%	35
			Acid Extractable Copper (Cu)	2010/09/02	1.2		%	35
			Acid Extractable Iron (Fe)	2010/09/02	0.8		%	35
			Acid Extractable Lead (Pb)	2010/09/02	0.4		%	35
			Acid Extractable Manganese (Mn)	2010/09/02	1.2		%	35
			Acid Extractable Molybdenum (Mo)	2010/09/02	1.5		%	35
			Acid Extractable Nickel (Ni)	2010/09/02	1.8		%	35
			Acid Extractable Selenium (Se)	2010/09/02	NC		%	35
			Acid Extractable Silver (Ag)	2010/09/02	NC		%	35
			Acid Extractable Strontium (Sr)	2010/09/02	1.2		%	35
			Acid Extractable Thallium (Tl)	2010/09/02	NC		%	35
			Acid Extractable Vanadium (V)	2010/09/02	0.2		%	35
			Acid Extractable Zinc (Zn)	2010/09/02	2.4		%	35
			Acid Extractable Mercury (Hg)	2010/09/02	NC		%	35
2252710	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/09/01		100	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/09/01	<0.05		ug/g	
		RPD	Hot Water Ext. Boron (B)	2010/09/01	6.2		%	35
2253633	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/09/02		100	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/09/02	<0.05		ug/g	
2253636	VIV	Matrix Spike	Acid Extractable Aluminum (Al)	2010/09/02		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/02		92	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/02		92	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/02		87	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/02		102	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/02		89	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/02		96	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/02		92	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/02		93	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/02		NC	%	75 - 125

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2253636	VIV	Matrix Spike	Acid Extractable Iron (Fe)	2010/09/02		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/02		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/02		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/02		95	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/02		92	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/02		92	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/02		94	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/02		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/02		86	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/02		96	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/02		95	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/02		97	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/02		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/02		95	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/09/02		105	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/09/02		107	%	75 - 125
			Acid Extractable Arsenic (As)	2010/09/02		99	%	75 - 125
			Acid Extractable Barium (Ba)	2010/09/02		102	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/09/02		105	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/09/02		98	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/09/02		106	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/09/02		104	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/09/02		102	%	75 - 125
			Acid Extractable Copper (Cu)	2010/09/02		103	%	75 - 125
			Acid Extractable Iron (Fe)	2010/09/02		115	%	75 - 125
			Acid Extractable Lead (Pb)	2010/09/02		102	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/09/02		105	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/09/02		104	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/09/02		107	%	75 - 125
			Acid Extractable Selenium (Se)	2010/09/02		104	%	75 - 125
			Acid Extractable Silver (Ag)	2010/09/02		103	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/09/02		97	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/09/02		94	%	75 - 125
			Acid Extractable Tin (Sn)	2010/09/02		105	%	75 - 125
			Acid Extractable Uranium (U)	2010/09/02		102	%	75 - 125
			Acid Extractable Vanadium (V)	2010/09/02		106	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/09/02		104	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/09/02		112	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/09/02	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/09/02	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/09/02	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/09/02	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/09/02	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/09/02	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/09/02	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/09/02	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/09/02	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/09/02	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/09/02	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/09/02	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/09/02	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/09/02	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/09/02	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/09/02	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/09/02	<0.2		ug/g	

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0604

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2253636	VIV	Method Blank	Acid Extractable Strontium (Sr)	2010/09/02	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/09/02	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/09/02	<5		ug/g	
			Acid Extractable Uranium (U)	2010/09/02	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/09/02	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/09/02	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/09/02	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/09/02	NC		%	35
			Acid Extractable Arsenic (As)	2010/09/02	NC		%	35
			Acid Extractable Barium (Ba)	2010/09/02	6.4		%	35
			Acid Extractable Beryllium (Be)	2010/09/02	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/09/02	NC		%	35
			Acid Extractable Chromium (Cr)	2010/09/02	6.1		%	35
			Acid Extractable Cobalt (Co)	2010/09/02	5.8		%	35
			Acid Extractable Copper (Cu)	2010/09/02	6.3		%	35
			Acid Extractable Lead (Pb)	2010/09/02	8.9		%	35
			Acid Extractable Molybdenum (Mo)	2010/09/02	NC		%	35
			Acid Extractable Nickel (Ni)	2010/09/02	8.2		%	35
			Acid Extractable Selenium (Se)	2010/09/02	NC		%	35
			Acid Extractable Silver (Ag)	2010/09/02	NC		%	35
			Acid Extractable Thallium (Tl)	2010/09/02	NC		%	35
			Acid Extractable Uranium (U)	2010/09/02	7.1		%	25
			Acid Extractable Vanadium (V)	2010/09/02	NC		%	35
			Acid Extractable Zinc (Zn)	2010/09/02	2.5		%	35

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(2) The matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.
(3) Elevated VPH RDL(s) due to detected levels in the method blank.
(4) The recovery in the matrix spike was not calculated (NC). Spiked concentration was less than 2x that native to the sample.

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Maxxam Analytics

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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	Same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200666
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680	Address:		Project #:	123600017 ~~RCAP~~	CHAIN OF CUSTODY #:	PROJECT MANAGER:
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III ESA	C#200666-03-01	RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	MN/MR/JS/PC		

REGULATORY CRITERIA:

☐ MISA ☐ Reg. 153/04 Sewer Use ☐ Sanitary ☐ Storm ☐ Combined

☐ PWQO ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse

☐ Reg. 558 Municipality

Other (specify) CCME CWS Report Criteria on C of A ? ☐

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required:
Rush Confirmation Number: *(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 BTEX/F1-F4	CCME Metals	PAHs	extract and Hold for BTEX/F1-F4	Hold for Metals	CCME Subfractionation Aliphatics/Aromatics	PCBs			# of Bottles	Comments
1		TP5-B-1	Aug 11/10	15:50	soil			✓	✓								4	
2		DUP F	Aug 11/10	15:50	soil			✓	✓								3	
3		TP7-C-2	Aug 11/10	16:00	soil			✓	✓								3	
4		TP3.5-F-2	Aug 11/10	10:40	soil			✓	✓	✓			✓	✓			6	REC'D IN OTTAWA
5		~~TP3.5-E-2~~ TP3.5-E-1	Aug 11/10	13:05	soil				✓								3	
6		TP3.5-E-3	Aug 11/10	13:10	soil			✓		✓							3	
7		~~TP3.5-DUP G~~	~~Aug 11/10~~	~~13:10~~	~~soil~~			~~✓~~		~~✓~~								
8																		
9																		
10																		

16-Aug-10 11:38
RENATA SPENA
B0B0604
J R OTT-014

INVOICE

*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 Intact on Cooler?
Patricia Coyne	10/08/13	2100	Melissa Drouin	10/08/16	11:38		X	7/8/8	☐ 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

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CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:

Company Name: #24125 Stantec Consulting Ltd
Contact Name: Patricia Coyne
Address: PO Box 1680
Yellowknife NT X1A2P3
Phone: (867)920-2216 Fax: (867)920-2278
Email: Patricia.Coyne@stantec.com

REPORT INFORMATION (if differs from invoice):

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

PROJECT INFORMATION:

Quotation #: BO5402
P.O. #: 1236000017
Project #: 123600017 ~~RCAP~~
Project Name: Clyde River PIII ESA
Site #:
Sampled By: MN/MR/PC/JS.

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 200666
CHAIN OF CUSTODY #: C#200666-02-01
PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:

☐ MISA Reg. 153/04 Sewer Use ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Residential/Parkland
☐ Table 2 ☐ Industrial/Commercial
☐ Reg. 558 ☐ Table 3 ☐ Medium/Fine
☐ Table 6 ☐ Coarse
Municipality
Other (specify) CCME CWS. Report Criteria on C of A ? ☐

SPECIAL INSTRUCTIONS

Reg. 153 ☐ 2004 ☐ 2011

Note: For 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: Time Required: ☐
Rush Confirmation Number: (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 BTEX/F1-F4	CCME Metals	PAHs	Extract and Hold for BTEX/F1-F4	Hold for Metals	# of Bottles	Comments
1		TP10-E-1	Aug 11/10	0940	soil				✓				4	
2		TP10-E-3	Aug 11/10	0945	soil			✓					3	
3		TP12.5-E-1	Aug 12/10	1000	soil			✓	✓				4	REC'D IN OTTAWA
4		TP3-DE-3	Aug 12/10	1405	soil			✓					3	
5		TP3.5-DE-1	Aug 12/10	1340	soil				✓				4	
6		TP3.5-DE-2	Aug 12/10	1345	soil			✓					3	
7		DUPC	Aug 12/10	1345	soil			✓					3	
8		TP3.5-DE-4	Aug 12/10	1350	soil						✓		3	
9		TP4-DE-2	Aug 12/10	1530	soil			✓					3	
10		TP3-D-2	Aug 11/10	1430	soil			✓					3	ON ICE

*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 Intact on Cooler?
Patricia Coyne	10/08/13	2100	Melissa Drain	10/08/16	11:38		X	7/8/8	☐ 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

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Your P.O. #: 16300NR
Your Project #: 123600017
Your C.O.C. #: 20066604, 200666-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B0756
Received: 2010/08/16, 11:40

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	3	N/A	2010/08/18	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	3	N/A	2010/08/19		
Chloride by Automated Colourimetry	3	N/A	2010/08/19	CAM SOP-00463	SM 4500 Cl E
Conductivity	3	N/A	2010/08/18	CAM SOP-00448	SM 2510
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2010/08/18	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (1)	1	2010/08/17	2010/08/17	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water (1)	2	2010/08/17	2010/08/18	CAM SOP-00316	CCME Hydrocarbons
Hardness (calculated as CaCO3)	3	N/A	2010/08/19	CAM SOP 00102	SM 2340 B
Lab Filtered Metals Analysis by ICP	3	2010/08/18	2010/08/19	CAM SOP-00408	EPA 6010
Total Metals Analysis by ICPMS	3	N/A	2010/08/20	CAM SOP-00447	EPA 6020
Ammonia-N	3	N/A	2010/08/20	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (2)	3	N/A	2010/08/19	CAM SOP-00440	SM 4500 NO3I/NO2B
pH	3	N/A	2010/08/18	CAM SOP-00448	SM 4500H
Orthophosphate	3	N/A	2010/08/19	CAM SOP-00461	SM 4500 P-F
Sat. pH and Langelier Index (@ 20C)	3	N/A	2010/08/19		
Sat. pH and Langelier Index (@ 4C)	3	N/A	2010/08/19		
Sulphate by Automated Colourimetry	3	N/A	2010/08/19	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	3	N/A	2010/08/19		
Total Organic Carbon (TOC)	3	N/A	2010/08/19	CAM SOP-00446	EPA 415.1 modified
Total Phosphorus (Colourimetric)	3	2010/08/19	2010/08/20	CAM SOP-00407	APHA 4500 P,B,F
Turbidity	3	N/A	2010/08/18	CAM SOP-00417	APHA 2130B

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

(1) This test was performed by Maxxam Ottawa
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

../2

Your P.O. #: 16300NR
Your Project #: 123600017
Your C.O.C. #: 20066604, 200666-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0B0756
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300NR
Sampler Initials: MR

RESULTS OF ANALYSES OF WATER

Maxxam ID		GV5127	GV5127	GV5128	GV5128		
Sampling Date		2010/08/12 13:30	2010/08/12 13:30	2010/08/12 14:00	2010/08/12 14:00		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**CW-1**	**CW-1 Lab-Dup**	**CW-2**	**CW-2 Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters							
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	4		10		1	2235911
Calculated TDS	mg/L	51		102		1	2235920
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1		<1		1	2235911
Hardness (CaCO3)	mg/L	20		43		1	2235913
Langelier Index (@ 20C)	N/A	-3.97		-3.05			2235918
Langelier Index (@ 4C)	N/A	-4.23		-3.30			2235919
Saturation pH (@ 20C)	N/A	10.2		9.59			2235918
Saturation pH (@ 4C)	N/A	10.5		9.84			2235919
Inorganics							
Total Ammonia-N	mg/L	<0.05		<0.05	<0.05	0.05	2240075
Conductivity	umho/cm	113		229		1	2238465
Total Organic Carbon (TOC)	mg/L	1.7		5.0		0.2	2239510
Orthophosphate (P)	mg/L	<0.01		<0.01	<0.01	0.01	2238484
pH	pH	6.3		6.5			2238464
Total Phosphorus	mg/L	<0.002		0.012		0.002	2239762
Dissolved Sulphate (SO4)	mg/L	5		8	7	1	2238490
Turbidity	NTU	0.6		0.5		0.1	2238360
Alkalinity (Total as CaCO3)	mg/L	4		10		1	2238437
Dissolved Chloride (Cl)	mg/L	26		48	48	1	2238477
Nitrite (N)	mg/L	<0.01	<0.01	<0.01		0.01	2238421
Nitrate (N)	mg/L	<0.1	<0.1	<0.1		0.1	2238421

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

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Maxxam Job #: B0B0756
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300NR
Sampler Initials: MR

RESULTS OF ANALYSES OF WATER

Maxxam ID		GV5129		
Sampling Date		2010/08/12 14:30		
COC Number		200666-0		
	Units	**CW-3**	**RDL**	**QC Batch**
Calculated Parameters				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	15	1	2235911
Calculated TDS	mg/L	86	1	2235920
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1	1	2235911
Hardness (CaCO3)	mg/L	40	1	2235913
Langelier Index (@ 20C)	N/A	-2.53		2235918
Langelier Index (@ 4C)	N/A	-2.78		2235919
Saturation pH (@ 20C)	N/A	9.26		2235918
Saturation pH (@ 4C)	N/A	9.51		2235919
Inorganics				
Total Ammonia-N	mg/L	<0.05	0.05	2240075
Conductivity	umho/cm	191	1	2238465
Total Organic Carbon (TOC)	mg/L	5.3	0.2	2239510
Orthophosphate (P)	mg/L	<0.01	0.01	2238487
pH	pH	6.7		2238464
Total Phosphorus	mg/L	0.014	0.002	2239762
Dissolved Sulphate (SO4)	mg/L	2	1	2238488
Turbidity	NTU	0.9	0.1	2238360
Alkalinity (Total as CaCO3)	mg/L	15	1	2238437
Dissolved Chloride (Cl)	mg/L	41	1	2238483
Nitrite (N)	mg/L	<0.01	0.01	2238421
Nitrate (N)	mg/L	<0.1	0.1	2238421

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B0756
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 123600017

Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GV5127	GV5128	GV5128	GV5129		
Sampling Date		2010/08/12 13:30	2010/08/12 14:00	2010/08/12 14:00	2010/08/12 14:30		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**CW-1**	**CW-2**	**CW-2 Lab-Dup**	**CW-3**	**RDL**	**QC Batch**
Metals							
Dissolved Calcium (Ca)	mg/L	3.23	5.62		7.88	0.05	2238277
Dissolved Magnesium (Mg)	mg/L	2.78	6.96		5.02	0.05	2238277
Dissolved Potassium (K)	mg/L	<1	1		1	1	2238277
Dissolved Sodium (Na)	mg/L	10.8	22.0		16.7	0.5	2238277
Total Aluminum (Al)	ug/L	38	97	77	73	5	2240276
Total Antimony (Sb)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2240276
Total Arsenic (As)	ug/L	<1	<1	<1	<1	1	2240276
Total Barium (Ba)	ug/L	7	10	10	9	5	2240276
Total Beryllium (Be)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2240276
Total Boron (B)	ug/L	11	19	17	<10	10	2240276
Total Cadmium (Cd)	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2240276
Total Calcium (Ca)	ug/L	3500	6300	5900	8100	200	2240276
Total Chromium (Cr)	ug/L	<5	<5	<5	<5	5	2240276
Total Cobalt (Co)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2240276
Total Copper (Cu)	ug/L	1	6	2	3	1	2240276
Total Iron (Fe)	ug/L	<100	190	180	<100	100	2240276
Total Lead (Pb)	ug/L	<0.5	<0.5	<0.5	<0.5	0.5	2240276
Total Magnesium (Mg)	ug/L	2600	7300	7000	4700	50	2240276
Total Manganese (Mn)	ug/L	<2	15	15	4	2	2240276
Total Molybdenum (Mo)	ug/L	<1	<1	<1	<1	1	2240276
Total Nickel (Ni)	ug/L	<1	<1	2	1	1	2240276
Total Potassium (K)	ug/L	860	1400	1300	570	200	2240276
Total Selenium (Se)	ug/L	<2	<2	<2	<2	2	2240276
Total Silicon (Si)	ug/L	790	2300	2200	1300	50	2240276
Total Silver (Ag)	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2240276
Total Sodium (Na)	ug/L	10000	23000	22000	16000	100	2240276
Total Strontium (Sr)	ug/L	26	60	57	66	1	2240276
Total Thallium (Tl)	ug/L	<0.05	<0.05	<0.05	<0.05	0.05	2240276
Total Titanium (Ti)	ug/L	<5	6	<5	<5	5	2240276
Total Uranium (U)	ug/L	<0.1	<0.1	<0.1	<0.1	0.1	2240276

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

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Maxxam Job #: B0B0756
Report Date: 2010/08/27

Stantec Consulting Ltd
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Your P.O. #: 16300NR
Sampler Initials: MR

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GV5127	GV5128	GV5128	GV5129		
Sampling Date		2010/08/12 13:30	2010/08/12 14:00	2010/08/12 14:00	2010/08/12 14:30		
COC Number		200666-0	200666-0	200666-0	200666-0		
	Units	**CW-1**	**CW-2**	**CW-2 Lab-Dup**	**CW-3**	**RDL**	**QC Batch**
Total Vanadium (V)	ug/L	<1	<1	<1	<1	1	2240276
Total Zinc (Zn)	ug/L	<5	6	7	19	5	2240276

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

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Report Date: 2010/08/27

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GV5127	GV5128	GV5129		
Sampling Date		2010/08/12 13:30	2010/08/12 14:00	2010/08/12 14:30		
COC Number		200666-0	200666-0	200666-0		
	Units	**CW-1**	**CW-2**	**CW-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/L	<0.2	<0.2	<0.2	0.2	2237481
Toluene	ug/L	<0.2	<0.2	<0.2	0.2	2237481
Ethylbenzene	ug/L	<0.2	<0.2	<0.2	0.2	2237481
o-Xylene	ug/L	<0.2	<0.2	<0.2	0.2	2237481
p+m-Xylene	ug/L	<0.4	<0.4	<0.4	0.4	2237481
Total Xylenes	ug/L	<0.4	<0.4	<0.4	0.4	2237481
F1 (C6-C10)	ug/L	<100	<100	<100	100	2237481
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	100	2237481
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	<100	100	2236952
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	79	81	79		2237481
4-Bromofluorobenzene	%	101	97	99		2237481
D10-Ethylbenzene	%	123	130	115		2237481
D4-1,2-Dichloroethane	%	77	76	79		2237481
o-Terphenyl	%	91	93	91		2236952

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QC Batch = Quality Control Batch

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GENERAL COMMENTS

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name:

Quality Assurance Report

Maxxam Job Number: TB0B0756

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2236952	LHR	Matrix Spike	o-Terphenyl	2010/08/17		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/17		108	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/17		93	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/17		100	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/17		92	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/17	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/17	24.6		%	50
2237481	PRB	Matrix Spike	1,4-Difluorobenzene	2010/08/18		78	%	70 - 130
			4-Bromofluorobenzene	2010/08/18		105	%	70 - 130
			D10-Ethylbenzene	2010/08/18		124	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/18		75	%	70 - 130
			Benzene	2010/08/18		107	%	70 - 130
			Toluene	2010/08/18		107	%	70 - 130
			Ethylbenzene	2010/08/18		119	%	70 - 130
			o-Xylene	2010/08/18		122	%	70 - 130
			p+m-Xylene	2010/08/18		107	%	70 - 130
			F1 (C6-C10)	2010/08/18		102	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2010/08/18		80	%	70 - 130
			4-Bromofluorobenzene	2010/08/18		105	%	70 - 130
			D10-Ethylbenzene	2010/08/18		124	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/18		73	%	70 - 130
			Benzene	2010/08/18		106	%	70 - 130
			Toluene	2010/08/18		106	%	70 - 130
			Ethylbenzene	2010/08/18		117	%	70 - 130
			o-Xylene	2010/08/18		119	%	70 - 130
			p+m-Xylene	2010/08/18		105	%	70 - 130
			F1 (C6-C10)	2010/08/18		102	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2010/08/18		82	%	70 - 130
			4-Bromofluorobenzene	2010/08/18		96	%	70 - 130
			D10-Ethylbenzene	2010/08/18		121	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/18		77	%	70 - 130
			Benzene	2010/08/18	<0.2		ug/L	
			Toluene	2010/08/18	<0.2		ug/L	
			Ethylbenzene	2010/08/18	<0.2		ug/L	
			o-Xylene	2010/08/18	<0.2		ug/L	
			p+m-Xylene	2010/08/18	<0.4		ug/L	
			Total Xylenes	2010/08/18	<0.4		ug/L	
			F1 (C6-C10)	2010/08/18	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/08/18	<100		ug/L	
		RPD	Benzene	2010/08/18	NC		%	40
			Toluene	2010/08/18	NC		%	40
			Ethylbenzene	2010/08/18	NC		%	40
			o-Xylene	2010/08/18	NC		%	40
			p+m-Xylene	2010/08/18	NC		%	40
			Total Xylenes	2010/08/18	NC		%	40
			F1 (C6-C10)	2010/08/18	NC		%	40
			F1 (C6-C10) - BTEX	2010/08/18	NC		%	40
2238277	JOH	Matrix Spike	Dissolved Calcium (Ca)	2010/08/19		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2010/08/19		98	%	80 - 120
			Dissolved Potassium (K)	2010/08/19		99	%	80 - 120
			Dissolved Sodium (Na)	2010/08/19		NC	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2010/08/19		96	%	90 - 110
			Dissolved Magnesium (Mg)	2010/08/19		94	%	90 - 110
			Dissolved Potassium (K)	2010/08/19		101	%	90 - 110
			Dissolved Sodium (Na)	2010/08/19		100	%	90 - 110

Stantec Consulting Ltd
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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0756

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2238277	JOH	Method Blank	Dissolved Calcium (Ca)	2010/08/19	<0.05		mg/L	
			Dissolved Magnesium (Mg)	2010/08/19	<0.05		mg/L	
			Dissolved Potassium (K)	2010/08/19	<1		mg/L	
			Dissolved Sodium (Na)	2010/08/19	<0.5		mg/L	
		RPD	Dissolved Calcium (Ca)	2010/08/19	1.2		%	25
			Dissolved Magnesium (Mg)	2010/08/19	1.5		%	25
			Dissolved Potassium (K)	2010/08/19	NC		%	25
			Dissolved Sodium (Na)	2010/08/19	0.3		%	25
2238360	PAL	QC Standard	Turbidity	2010/08/18		100	%	85 - 115
		Method Blank	Turbidity		TBA		NTU	
		RPD	Turbidity	2010/08/18	3.3		%	25
2238421	C_N	Matrix Spike						
		[GV5127-01]	Nitrite (N)	2010/08/19		105	%	80 - 120
			Nitrate (N)	2010/08/19		104	%	80 - 120
		Spiked Blank	Nitrite (N)	2010/08/19		108	%	85 - 115
			Nitrate (N)	2010/08/19		106	%	85 - 115
		Method Blank	Nitrite (N)	2010/08/19	<0.01		mg/L	
			Nitrate (N)	2010/08/19	<0.1		mg/L	
		RPD [GV5127-01]	Nitrite (N)	2010/08/19	NC		%	25
			Nitrate (N)	2010/08/19	NC		%	25
2238437	PAL	QC Standard	Alkalinity (Total as CaCO3)	2010/08/18		96	%	85 - 115
		Method Blank	Alkalinity (Total as CaCO3)	2010/08/18	<1		mg/L	
		RPD	Alkalinity (Total as CaCO3)	2010/08/18	NC		%	25
2238465	PAL	QC Standard	Conductivity	2010/08/18		104	%	85 - 115
		Method Blank	Conductivity	2010/08/18	<1		umho/cm	
		RPD	Conductivity	2010/08/18	NC		%	25
2238477	DRM	Matrix Spike						
		[GV5128-01]	Dissolved Chloride (Cl)	2010/08/19		NC	%	75 - 125
		Spiked Blank	Dissolved Chloride (Cl)	2010/08/19		102	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2010/08/19	<1		mg/L	
		RPD [GV5128-01]	Dissolved Chloride (Cl)	2010/08/19	1.0		%	20
2238483	DRM	Matrix Spike	Dissolved Chloride (Cl)	2010/08/19		105	%	75 - 125
		Spiked Blank	Dissolved Chloride (Cl)	2010/08/19		105	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2010/08/19	<1		mg/L	
		RPD	Dissolved Chloride (Cl)	2010/08/19	1		%	20
2238484	DRM	Matrix Spike						
		[GV5128-01]	Orthophosphate (P)	2010/08/19		107	%	75 - 125
		Spiked Blank	Orthophosphate (P)	2010/08/19		101	%	80 - 120
		Method Blank	Orthophosphate (P)	2010/08/19	<0.01		mg/L	
		RPD [GV5128-01]	Orthophosphate (P)	2010/08/19	NC		%	25
2238487	DRM	Matrix Spike	Orthophosphate (P)	2010/08/19		104	%	75 - 125
		Spiked Blank	Orthophosphate (P)	2010/08/19		100	%	80 - 120
		Method Blank	Orthophosphate (P)	2010/08/19	<0.01		mg/L	
		RPD	Orthophosphate (P)	2010/08/19	NC		%	25
2238488	DRM	Matrix Spike	Dissolved Sulphate (SO4)	2010/08/19		103	%	75 - 125
		Spiked Blank	Dissolved Sulphate (SO4)	2010/08/19		97	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2010/08/19	<1		mg/L	
		RPD	Dissolved Sulphate (SO4)	2010/08/19	NC		%	25
2238490	DRM	Matrix Spike						
		[GV5128-01]	Dissolved Sulphate (SO4)	2010/08/19		102	%	75 - 125
		Spiked Blank	Dissolved Sulphate (SO4)	2010/08/19		97	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2010/08/19	<1		mg/L	
		RPD [GV5128-01]	Dissolved Sulphate (SO4)	2010/08/19	1.3		%	25
2239510	C_H	Matrix Spike	Total Organic Carbon (TOC)	2010/08/19		101	%	80 - 120
		Spiked Blank	Total Organic Carbon (TOC)	2010/08/19		97	%	80 - 120

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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0756

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239510	C_H	Method Blank	Total Organic Carbon (TOC)	2010/08/19	0.2, RDL=0.2		mg/L	
		RPD	Total Organic Carbon (TOC)	2010/08/19	7.8		%	20
2239762	VRO	Matrix Spike	Total Phosphorus	2010/08/20		NC	%	80 - 120
		QC Standard	Total Phosphorus	2010/08/20		103	%	85 - 115
		Spiked Blank	Total Phosphorus	2010/08/20		103	%	85 - 115
		Method Blank	Total Phosphorus	2010/08/20	<0.002		mg/L	
		RPD	Total Phosphorus	2010/08/20	5.5		%	20
2240075	ADB	Matrix Spike						
		[GV5128-04]	Total Ammonia-N	2010/08/20		102	%	80 - 120
		Spiked Blank	Total Ammonia-N	2010/08/20		101	%	85 - 115
		Method Blank	Total Ammonia-N	2010/08/20	<0.05		mg/L	
		RPD [GV5128-04]	Total Ammonia-N	2010/08/20	NC		%	25
2240276	JBW	Matrix Spike						
		[GV5128-03]	Total Aluminum (Al)	2010/08/20		104	%	80 - 120
			Total Antimony (Sb)	2010/08/20		109	%	80 - 120
			Total Arsenic (As)	2010/08/20		105	%	80 - 120
			Total Barium (Ba)	2010/08/20		104	%	80 - 120
			Total Beryllium (Be)	2010/08/20		105	%	80 - 120
			Total Boron (B)	2010/08/20		106	%	80 - 120
			Total Cadmium (Cd)	2010/08/20		101	%	80 - 120
			Total Calcium (Ca)	2010/08/20		111	%	80 - 120
			Total Chromium (Cr)	2010/08/20		105	%	80 - 120
			Total Cobalt (Co)	2010/08/20		101	%	80 - 120
			Total Copper (Cu)	2010/08/20		102	%	80 - 120
			Total Iron (Fe)	2010/08/20		102	%	80 - 120
			Total Lead (Pb)	2010/08/20		105	%	80 - 120
			Total Magnesium (Mg)	2010/08/20		105	%	80 - 120
			Total Manganese (Mn)	2010/08/20		102	%	80 - 120
			Total Molybdenum (Mo)	2010/08/20		107	%	80 - 120
			Total Nickel (Ni)	2010/08/20		103	%	80 - 120
			Total Potassium (K)	2010/08/20		109	%	80 - 120
			Total Selenium (Se)	2010/08/20		107	%	80 - 120
			Total Silicon (Si)	2010/08/20		101	%	80 - 120
			Total Silver (Ag)	2010/08/20		97	%	80 - 120
			Total Sodium (Na)	2010/08/20		NC	%	80 - 120
			Total Strontium (Sr)	2010/08/20		108	%	80 - 120
			Total Thallium (Tl)	2010/08/20		104	%	80 - 120
			Total Titanium (Ti)	2010/08/20		106	%	80 - 120
			Total Uranium (U)	2010/08/20		105	%	80 - 120
			Total Vanadium (V)	2010/08/20		103	%	80 - 120
			Total Zinc (Zn)	2010/08/20		NC	%	80 - 120
		Spiked Blank	Total Aluminum (Al)	2010/08/20		99	%	85 - 115
			Total Antimony (Sb)	2010/08/20		108	%	85 - 115
			Total Arsenic (As)	2010/08/20		101	%	85 - 115
			Total Barium (Ba)	2010/08/20		102	%	85 - 115
			Total Beryllium (Be)	2010/08/20		102	%	85 - 115
			Total Boron (B)	2010/08/20		102	%	85 - 115
			Total Cadmium (Cd)	2010/08/20		100	%	85 - 116
			Total Calcium (Ca)	2010/08/20		101	%	85 - 115
			Total Chromium (Cr)	2010/08/20		100	%	85 - 115
			Total Cobalt (Co)	2010/08/20		97	%	85 - 115
			Total Copper (Cu)	2010/08/20		101	%	85 - 115
			Total Iron (Fe)	2010/08/20		97	%	85 - 115
			Total Lead (Pb)	2010/08/20		102	%	85 - 115
			Total Magnesium (Mg)	2010/08/20		100	%	85 - 115

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Client Project #: 123600017
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Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0756

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2240276	JBW	Spiked Blank	Total Manganese (Mn)	2010/08/20		97	%	85 - 115
			Total Molybdenum (Mo)	2010/08/20		107	%	85 - 115
			Total Nickel (Ni)	2010/08/20		99	%	85 - 115
			Total Potassium (K)	2010/08/20		102	%	85 - 115
			Total Selenium (Se)	2010/08/20		105	%	85 - 115
			Total Silicon (Si)	2010/08/20		100	%	85 - 115
			Total Silver (Ag)	2010/08/20		96	%	85 - 115
			Total Sodium (Na)	2010/08/20		100	%	85 - 115
			Total Strontium (Sr)	2010/08/20		99	%	85 - 115
			Total Thallium (Tl)	2010/08/20		103	%	85 - 115
			Total Titanium (Ti)	2010/08/20		100	%	85 - 115
			Total Uranium (U)	2010/08/20		103	%	85 - 115
			Total Vanadium (V)	2010/08/20		99	%	85 - 115
			Total Zinc (Zn)	2010/08/20		104	%	85 - 115
		Method Blank	Total Aluminum (Al)	2010/08/20	<5		ug/L	
			Total Antimony (Sb)	2010/08/20	<0.5		ug/L	
			Total Arsenic (As)	2010/08/20	<1		ug/L	
			Total Barium (Ba)	2010/08/20	<5		ug/L	
			Total Beryllium (Be)	2010/08/20	<0.5		ug/L	
			Total Boron (B)	2010/08/20	<10		ug/L	
			Total Cadmium (Cd)	2010/08/20	<0.1		ug/L	
			Total Calcium (Ca)	2010/08/20	<200		ug/L	
			Total Chromium (Cr)	2010/08/20	<5		ug/L	
			Total Cobalt (Co)	2010/08/20	<0.5		ug/L	
			Total Copper (Cu)	2010/08/20	<1		ug/L	
			Total Iron (Fe)	2010/08/20	<100		ug/L	
			Total Lead (Pb)	2010/08/20	<0.5		ug/L	
			Total Magnesium (Mg)	2010/08/20	<50		ug/L	
			Total Manganese (Mn)	2010/08/20	<2		ug/L	
			Total Molybdenum (Mo)	2010/08/20	<1		ug/L	
			Total Nickel (Ni)	2010/08/20	<1		ug/L	
			Total Potassium (K)	2010/08/20	<200		ug/L	
			Total Selenium (Se)	2010/08/20	<2		ug/L	
			Total Silicon (Si)	2010/08/20	<50		ug/L	
			Total Silver (Ag)	2010/08/20	<0.1		ug/L	
			Total Sodium (Na)	2010/08/20	<100		ug/L	
			Total Strontium (Sr)	2010/08/20	<1		ug/L	
			Total Thallium (Tl)	2010/08/20	<0.05		ug/L	
			Total Titanium (Ti)	2010/08/20	<5		ug/L	
			Total Uranium (U)	2010/08/20	<0.1		ug/L	
			Total Vanadium (V)	2010/08/20	<1		ug/L	
			Total Zinc (Zn)	2010/08/20	<5		ug/L	
		RPD [GV5128-03]	Total Aluminum (Al)	2010/08/20	23.0		%	25
			Total Antimony (Sb)	2010/08/20	NC		%	25
			Total Arsenic (As)	2010/08/20	NC		%	25
			Total Barium (Ba)	2010/08/20	NC		%	25
			Total Beryllium (Be)	2010/08/20	NC		%	25
			Total Boron (B)	2010/08/20	NC		%	25
			Total Cadmium (Cd)	2010/08/20	NC		%	25
			Total Calcium (Ca)	2010/08/20	6.3		%	25
			Total Chromium (Cr)	2010/08/20	NC		%	25
			Total Cobalt (Co)	2010/08/20	NC		%	25
			Total Copper (Cu)	2010/08/20	NC		%	25
			Total Iron (Fe)	2010/08/20	NC		%	25
			Total Lead (Pb)	2010/08/20	NC		%	25

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B0756

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2240276	JBW	RPD [GV5128-03]	Total Magnesium (Mg)	2010/08/20	4.7		%	25
			Total Manganese (Mn)	2010/08/20	3.0		%	25
			Total Molybdenum (Mo)	2010/08/20	NC		%	25
			Total Nickel (Ni)	2010/08/20	NC		%	25
			Total Potassium (K)	2010/08/20	5.4		%	25
			Total Selenium (Se)	2010/08/20	NC		%	25
			Total Silicon (Si)	2010/08/20	4.7		%	25
			Total Silver (Ag)	2010/08/20	NC		%	25
			Total Sodium (Na)	2010/08/20	3.9		%	25
			Total Strontium (Sr)	2010/08/20	4.5		%	25
			Total Thallium (Tl)	2010/08/20	NC		%	25
			Total Titanium (Ti)	2010/08/20	NC		%	25
			Total Uranium (U)	2010/08/20	NC		%	25
			Total Vanadium (V)	2010/08/20	NC		%	25
			Total Zinc (Zn)	2010/08/20	NC		%	25

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

Maxxam Analytics

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200666
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680	Address:		Project #:	123600017 RCAP		
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III ESA	CHAIN OF CUSTODY #: C#200666-04-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	MR/PC/MN/JS		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify): CCME — Report Criteria on C of A ? ☐

Reg. 153: ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required:
Rush Confirmation Number: (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 BTEX/F1-F4	CCME Total Metals - Freshwater Aquatic Life	RCAP including Reactive silica, color	# of Bottles	Comments
1		CW-1	12/08/10	1:30	water			✓	✓	✓	1 2	
2		CW-2	12/08/10	2:00	water			✓	✓	✓	1 2	
3		CW-3	12/08/10	2:30	Water			✓	✓	✓	1 2	
4												
5												
6												
7												
8												
9												
10												

16-Aug-10 11:40
RENATA SPENA
B0B0756
J_R OTT-001

RECD IN OTTAWA

*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 intact on Cooler?
Patricia Coyne	10/08/10	0900		10/08/16	11:40		X	8.5 6	☐ 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

Your Project #: MB0B0756
Site:123600017

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/19
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072653
Received: 2010/08/18, 8:30

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Silica (Reactive)	3	N/A	2010/08/18	AB SOP-00011	EPA 370.1

Encryption Key

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

JENNIFER RISPLER,
Email: Jennifer.Rispler@MaxxamAnalytics.com
Phone# (403) 735-2201 Ext:2201

==========

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 #: B072653
Report Date: 2010/08/19

MAXXAM ANALYTICS INC.
Client Project #: MB0B0756
Site Reference: 123600017

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		W29165	W29166	W29167		
Sampling Date		2010/08/12	2010/08/12	2010/08/12		
	Units	**CW-1 (GV5127-02R)**	**CW-2 (GV5128-02R)**	**CW-3 (GV5129-02R)**	**RDL**	**QC Batch**
Misc. Inorganics						
Reactive Silica	mg/L	1.8	4.8	2.7	0.05	4188604

RDL = Reportable Detection Limit

Maxxam Job #: B072653
Report Date: 2010/08/19

MAXXAM ANALYTICS INC.
Client Project #: MB0B0756
Site Reference: 123600017

Package 1	1.0°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B0756
P.O. #:
Site Reference: 123600017

Quality Assurance Report

Maxxam Job Number: CB072653

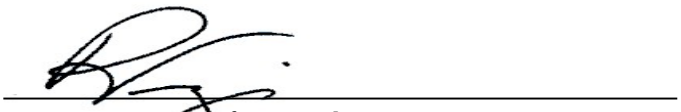
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4188604	CZ0	Matrix Spike	Reactive Silica	2010/08/18		101	%	80 - 120
		Spiked Blank	Reactive Silica	2010/08/18		100	%	89 - 110
		Method Blank	Reactive Silica	2010/08/18	<0.05		mg/L	
		RPD	Reactive Silica	2010/08/18	2.4		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Validation Signature Page

Maxxam Job #: B072653

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



RON VENZI, Scientific Specialist

==========

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

Your Project #: B0B0756

Attention: Renata Spena
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/23

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B072668
Received: 2010/08/17, 8:45

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Benzo[a]pyrene Equivalency	3	N/A	2010/08/21	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons (1)	3	2010/08/19	2010/08/20	AB SOP-00003 AB WI-00017	EPA 3510C/8270D

(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

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		W29214	W29224	W29225		
Sampling Date		2010/08/12	2010/08/12	2010/08/12		
	Units	**GV5127-06R\CW-1**	**GV5128-06R\CW-2**	**GV5129-06R\CW-3**	**RDL**	**QC Batch**
Polycyclic Aromatics						
Benzo[a]pyrene equivalency	ug/L	<0.01	<0.01	<0.01	0.01	4189791
Acenaphthene	ug/L	<0.10	<0.10	<0.10	0.10	4191365
Acenaphthylene	ug/L	<0.10	<0.10	<0.10	0.10	4191365
Acridine	ug/L	<0.20	<0.20	<0.20	0.20	4191365
Anthracene	ug/L	<0.010	<0.010	<0.010	0.010	4191365
Benzo(a)anthracene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	4191365
Benzo(b&j)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	4191365
Benzo(k)fluoranthene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	4191365
Benzo(g,h,i)perylene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	4191365
Benzo(c)phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	4191365
Benzo(a)pyrene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	4191365
Benzo[e]pyrene	ug/L	<0.050	<0.050	<0.050	0.050	4191365
Chrysene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	4191365
Dibenz(a,h)anthracene	ug/L	<0.0075	<0.0075	<0.0075	0.0075	4191365
Fluoranthene	ug/L	<0.040	<0.040	<0.040	0.040	4191365
Fluorene	ug/L	<0.050	<0.050	<0.050	0.050	4191365
Indeno(1,2,3-cd)pyrene	ug/L	<0.0085	<0.0085	<0.0085	0.0085	4191365
2-Methylnaphthalene	ug/L	<0.10	<0.10	<0.10	0.10	4191365
Naphthalene	ug/L	<0.10	<0.10	<0.10	0.10	4191365
Phenanthrene	ug/L	<0.050	<0.050	<0.050	0.050	4191365
Perylene	ug/L	<0.050	<0.050	<0.050	0.050	4191365
Pyrene	ug/L	<0.020	<0.020	<0.020	0.020	4191365
Quinoline	ug/L	<0.20	<0.20	<0.20	0.20	4191365
Surrogate Recovery (%)						
D10-ANTHRACENE (sur.)	%	116	112	112	N/A	4191365
D12-BENZO(A)PYRENE (sur.)	%	109	101	105	N/A	4191365
D8-ACENAPHTHYLENE (sur.)	%	105	105	102	N/A	4191365
TERPHENYL-D14 (sur.)	%	108	101	105	N/A	4191365

N/A = Not Applicable
RDL = Reportable Detection Limit

Package 1	2.7°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0B0756
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB072668

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4191365	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/20		99	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/20		90	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		88	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/20		91	%	30 - 130
			Acenaphthene	2010/08/20		90	%	30 - 130
			Acenaphthylene	2010/08/20		89	%	30 - 130
			Acridine	2010/08/20		67	%	30 - 130
			Anthracene	2010/08/20		84	%	30 - 130
			Benzo(a)anthracene	2010/08/20		91	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/20		99	%	30 - 130
			Benzo(k)fluoranthene	2010/08/20		91	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/20		95	%	30 - 130
			Benzo(c)phenanthrene	2010/08/20		88	%	30 - 130
			Benzo(a)pyrene	2010/08/20		94	%	30 - 130
			Benzo[e]pyrene	2010/08/20		91	%	30 - 130
			Chrysene	2010/08/20		120	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/20		100	%	30 - 130
			Fluoranthene	2010/08/20		95	%	30 - 130
			Fluorene	2010/08/20		91	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/20		95	%	30 - 130
			2-Methylnaphthalene	2010/08/20		83	%	30 - 130
			Naphthalene	2010/08/20		85	%	30 - 130
			Phenanthrene	2010/08/20		93	%	30 - 130
			Perylene	2010/08/20		89	%	30 - 130
			Pyrene	2010/08/20		96	%	30 - 130
			Quinoline	2010/08/20		124	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/20		119	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/20		111	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/20		109	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/20		112	%	30 - 130
			Acenaphthene	2010/08/20		104	%	30 - 130
			Acenaphthylene	2010/08/20		103	%	30 - 130
			Acridine	2010/08/20		82	%	30 - 130
			Anthracene	2010/08/20		96	%	30 - 130
			Benzo(a)anthracene	2010/08/20		103	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/20		112	%	30 - 130
			Benzo(k)fluoranthene	2010/08/20		104	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/20		106	%	30 - 130
			Benzo(c)phenanthrene	2010/08/20		99	%	30 - 130
			Benzo(a)pyrene	2010/08/20		107	%	30 - 130
			Benzo[e]pyrene	2010/08/20		102	%	30 - 130
			Chrysene	2010/08/20		128	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/20		113	%	30 - 130
			Fluoranthene	2010/08/20		108	%	30 - 130
			Fluorene	2010/08/20		105	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/20		107	%	30 - 130
			2-Methylnaphthalene	2010/08/20		97	%	30 - 130
			Naphthalene	2010/08/20		101	%	30 - 130
			Phenanthrene	2010/08/20		106	%	30 - 130
			Perylene	2010/08/20		105	%	30 - 130
			Pyrene	2010/08/20		108	%	30 - 130
			Quinoline	2010/08/20		120	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/19		121	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/19		115	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/19		107	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0B0756
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB072668

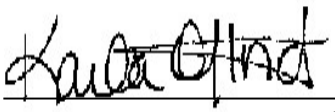
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4191365	JA3	Method Blank	TERPHENYL-D14 (sur.)	2010/08/19		115	%	30 - 130
			Acenaphthene	2010/08/19	<0.10		ug/L	
			Acenaphthylene	2010/08/19	<0.10		ug/L	
			Acridine	2010/08/19	<0.20		ug/L	
			Anthracene	2010/08/19	<0.010		ug/L	
			Benzo(a)anthracene	2010/08/19	<0.0085		ug/L	
			Benzo(b&j)fluoranthene	2010/08/19	<0.0085		ug/L	
			Benzo(k)fluoranthene	2010/08/19	<0.0085		ug/L	
			Benzo(g,h,i)perylene	2010/08/19	<0.0085		ug/L	
			Benzo(c)phenanthrene	2010/08/19	<0.050		ug/L	
			Benzo(a)pyrene	2010/08/19	<0.0075		ug/L	
			Benzo[e]pyrene	2010/08/19	<0.050		ug/L	
			Chrysene	2010/08/19	<0.0085		ug/L	
			Dibenz(a,h)anthracene	2010/08/19	<0.0075		ug/L	
			Fluoranthene	2010/08/19	<0.040		ug/L	
			Fluorene	2010/08/19	<0.050		ug/L	
			Indeno(1,2,3-cd)pyrene	2010/08/19	<0.0085		ug/L	
			2-Methylnaphthalene	2010/08/19	<0.10		ug/L	
			Naphthalene	2010/08/19	<0.10		ug/L	
			Phenanthrene	2010/08/19	<0.050		ug/L	
			Perylene	2010/08/19	<0.050		ug/L	
			Pyrene	2010/08/19	<0.020		ug/L	
			Quinoline	2010/08/19	<0.20		ug/L	
		RPD	Acenaphthene	2010/08/20	NC		%	40
			Acenaphthylene	2010/08/20	NC		%	40
			Acridine	2010/08/20	NC		%	40
			Anthracene	2010/08/20	NC		%	40
			Benzo(a)anthracene	2010/08/20	NC		%	40
			Benzo(b&j)fluoranthene	2010/08/20	NC		%	40
			Benzo(k)fluoranthene	2010/08/20	NC		%	40
			Benzo(g,h,i)perylene	2010/08/20	NC		%	40
			Benzo(a)pyrene	2010/08/20	NC		%	40
			Chrysene	2010/08/20	39.1		%	40
			Dibenz(a,h)anthracene	2010/08/20	NC		%	40
			Fluoranthene	2010/08/20	NC		%	40
			Fluorene	2010/08/20	NC		%	40
			Indeno(1,2,3-cd)pyrene	2010/08/20	NC		%	40
			Naphthalene	2010/08/20	NC		%	40
			Phenanthrene	2010/08/20	NC		%	40
			Pyrene	2010/08/20	NC		%	40
			Quinoline	2010/08/20	NC		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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 #: B072668

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



KARLA OFFORD, Senior Analyst

==========

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

Your P.O. #: 16300NR
Your Project #: 123600017
Site: CLYDE RIVER PH III ESA
Your C.O.C. #: OO573303

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/24

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B1195
Received: 2010/08/16, 15:06

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	8	2010/08/21	2010/08/23	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (1)	8	N/A	2010/08/24	BRL SOP-00106	EPA SW846-3060/7199
Acid Extr. Metals (aqua regia) by ICPMS	4	2010/08/20	2010/08/24	CAM SOP-00447	EPA 6020
Acid Extr. Metals (aqua regia) by ICPMS	4	2010/08/23	2010/08/23	CAM SOP-00447	EPA 6020
Moisture	8	N/A	2010/08/19	CAM SOP-00445	McKeague 2nd ed 1978

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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Total cover pages: 1

Maxxam Job #: B0B1195
Report Date: 2010/08/24

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GV7396	GV7397		GV7398		GV7399		
Sampling Date		2010/08/13 14:32	2010/08/13 14:15		2010/08/13 14:02		2010/08/13 10:20		
COC Number		OO573303	OO573303		OO573303		OO573303		
	Units	**BCR-S26**	**BCR-S21**	**QC Batch**	**BCR-S24**	**QC Batch**	**OCR-S9**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	<0.2	2241584	<0.2	2241595	<0.2	0.2	2241584
Moisture	%	15	19	2240678	16	2240678	25	1	2240678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV7400	GV7401		GV7402		GV7403		
Sampling Date		2010/08/13 11:45	2010/08/13 09:15		2010/08/13 10:42		2010/08/13 11:20		
COC Number		OO573303	OO573303		OO573303		OO573303		
	Units	**OCR-S1**	**OCR-S12**	**QC Batch**	**OCR-S20**	**QC Batch**	**OCR-SE2**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	<0.2	2241595	<0.2	2241584	<0.2	0.2	2241595
Moisture	%	29	68	2240678	18	2240678	50	1	2240678

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GV7403		
Sampling Date		2010/08/13 11:20		
COC Number		OO573303		
	Units	**OCR-SE2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics				
Chromium (VI)	ug/g	<0.2	0.2	2241595

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B1195
Report Date: 2010/08/24

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV7396		GV7397		GV7398		
Sampling Date		2010/08/13 14:32		2010/08/13 14:15		2010/08/13 14:02		
COC Number		OO573303		OO573303		OO573303		
	Units	**BCR-S26**	**QC Batch**	**BCR-S21**	**QC Batch**	**BCR-S24**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.19	2242159	0.60	2242365	0.09	0.05	2242159
Acid Extractable Aluminum (Al)	ug/g	9800	2241777	7400	2242674	2200	50	2241777
Acid Extractable Antimony (Sb)	ug/g	<0.2	2241777	<0.2	2242674	<0.2	0.2	2241777
Acid Extractable Arsenic (As)	ug/g	<1	2241777	<1	2242674	<1	1	2241777
Acid Extractable Barium (Ba)	ug/g	35	2241777	37	2242674	13	0.5	2241777
Acid Extractable Beryllium (Be)	ug/g	0.2	2241777	0.2	2242674	<0.2	0.2	2241777
Acid Extractable Bismuth (Bi)	ug/g	<1	2241777	<1	2242674	<1	1	2241777
Acid Extractable Cadmium (Cd)	ug/g	<0.1	2241777	<0.1	2242674	<0.1	0.1	2241777
Acid Extractable Chromium (Cr)	ug/g	15	2241777	12	2242674	6	1	2241777
Acid Extractable Cobalt (Co)	ug/g	4.4	2241777	4.3	2242674	1.9	0.1	2241777
Acid Extractable Copper (Cu)	ug/g	7.6	2241777	6.1	2242674	3.5	0.5	2241777
Acid Extractable Iron (Fe)	ug/g	18000	2241777	14000	2242674	8400	50	2241777
Acid Extractable Lead (Pb)	ug/g	6	2241777	5	2242674	5	1	2241777
Acid Extractable Manganese (Mn)	ug/g	140	2241777	150	2242674	56	1	2241777
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2241777	<0.5	2242674	<0.5	0.5	2241777
Acid Extractable Nickel (Ni)	ug/g	7.9	2241777	7.4	2242674	2.5	0.5	2241777
Acid Extractable Selenium (Se)	ug/g	<0.5	2241777	<0.5	2242674	<0.5	0.5	2241777
Acid Extractable Silver (Ag)	ug/g	<0.2	2241777	<0.2	2242674	<0.2	0.2	2241777
Acid Extractable Strontium (Sr)	ug/g	4	2241777	7	2242674	3	1	2241777
Acid Extractable Thallium (Tl)	ug/g	0.25	2241777	0.20	2242674	0.07	0.05	2241777
Acid Extractable Tin (Sn)	ug/g	<5	2241777	<5	2242674	<5	5	2241777
Acid Extractable Uranium (U)	ug/g	0.92	2241777	0.73	2242674	0.72	0.05	2241777
Acid Extractable Vanadium (V)	ug/g	32	2241777	27	2242674	21	5	2241777
Acid Extractable Zinc (Zn)	ug/g	35	2241777	29	2242674	12	5	2241777
Acid Extractable Mercury (Hg)	ug/g	<0.05	2241777	<0.05	2242674	<0.05	0.05	2241777

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B1195
Report Date: 2010/08/24

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV7399			GV7400		GV7401		
Sampling Date		2010/08/13 10:20			2010/08/13 11:45		2010/08/13 09:15		
COC Number		OO573303			OO573303		OO573303		
	Units	**OCR-S9**	**RDL**	**QC Batch**	**OCR-S1**	**RDL**	**OCR-S12**	**RDL**	**QC Batch**
Metals									
Hot Water Ext. Boron (B)	ug/g	0.64	0.05	2242159	3.0	0.15	1.1	0.05	2242365
Acid Extractable Aluminum (Al)	ug/g	5500	50	2241777	9600	50	13000	50	2242674
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	2241777	1.0	0.2	<0.2	0.2	2242674
Acid Extractable Arsenic (As)	ug/g	1	1	2241777	2	1	1	1	2242674
Acid Extractable Barium (Ba)	ug/g	29	0.5	2241777	120	0.5	65	0.5	2242674
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2241777	0.3	0.2	0.3	0.2	2242674
Acid Extractable Bismuth (Bi)	ug/g	<1	1	2241777	<1	1	<1	1	2242674
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	2241777	1.0	0.1	<0.1	0.1	2242674
Acid Extractable Chromium (Cr)	ug/g	8	1	2241777	17	1	19	1	2242674
Acid Extractable Cobalt (Co)	ug/g	3.5	0.1	2241777	17	0.1	7.7	0.1	2242674
Acid Extractable Copper (Cu)	ug/g	5.1	0.5	2241777	71	0.5	10	0.5	2242674
Acid Extractable Iron (Fe)	ug/g	9600	50	2241777	17000	50	22000	50	2242674
Acid Extractable Lead (Pb)	ug/g	4	1	2241777	110	1	8	1	2242674
Acid Extractable Manganese (Mn)	ug/g	150	1	2241777	3100	10	390	1	2242674
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	2241777	0.8	0.5	<0.5	0.5	2242674
Acid Extractable Nickel (Ni)	ug/g	4.9	0.5	2241777	15	0.5	12	0.5	2242674
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	2241777	2.7	0.5	<0.5	0.5	2242674
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2241777	0.7	0.2	<0.2	0.2	2242674
Acid Extractable Strontium (Sr)	ug/g	5	1	2241777	65	1	15	1	2242674
Acid Extractable Thallium (Tl)	ug/g	0.15	0.05	2241777	0.24	0.05	0.32	0.05	2242674
Acid Extractable Tin (Sn)	ug/g	<5	5	2241777	23	5	<5	5	2242674
Acid Extractable Uranium (U)	ug/g	0.57	0.05	2241777	1.4	0.05	0.93	0.05	2242674
Acid Extractable Vanadium (V)	ug/g	24	5	2241777	24	5	39	5	2242674
Acid Extractable Zinc (Zn)	ug/g	20	5	2241777	200	5	44	5	2242674
Acid Extractable Mercury (Hg)	ug/g	<0.05	0.05	2241777	6.6	0.5	<0.05	0.05	2242674

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 #: B0B1195
Report Date: 2010/08/24

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GV7402			GV7403		
Sampling Date		2010/08/13 10:42			2010/08/13 11:20		
COC Number		OO573303			OO573303		
	Units	**OCR-S20**	**RDL**	**QC Batch**	**OCR-SE2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.20	0.05	2242159	0.76	0.05	2242365
Acid Extractable Aluminum (Al)	ug/g	11000	50	2241777	7700	50	2242674
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	2241777	1.2	0.2	2242674
Acid Extractable Arsenic (As)	ug/g	2	1	2241777	4	1	2242674
Acid Extractable Barium (Ba)	ug/g	53	0.5	2241777	140	0.5	2242674
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2241777	<0.2	0.2	2242674
Acid Extractable Bismuth (Bi)	ug/g	<1	1	2241777	<1	1	2242674
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	2241777	0.6	0.1	2242674
Acid Extractable Chromium (Cr)	ug/g	19	1	2241777	13	1	2242674
Acid Extractable Cobalt (Co)	ug/g	8.6	0.1	2241777	13	0.1	2242674
Acid Extractable Copper (Cu)	ug/g	8.0	0.5	2241777	28	0.5	2242674
Acid Extractable Iron (Fe)	ug/g	24000	50	2241777	18000	50	2242674
Acid Extractable Lead (Pb)	ug/g	7	1	2241777	220	1	2242674
Acid Extractable Manganese (Mn)	ug/g	350	1	2241777	3000	10	2242674
Acid Extractable Molybdenum (Mo)	ug/g	0.5	0.5	2241777	0.7	0.5	2242674
Acid Extractable Nickel (Ni)	ug/g	11	0.5	2241777	11	0.5	2242674
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	2241777	0.7	0.5	2242674
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2241777	0.7	0.2	2242674
Acid Extractable Strontium (Sr)	ug/g	9	1	2241777	15	1	2242674
Acid Extractable Thallium (Tl)	ug/g	0.33	0.05	2241777	0.23	0.05	2242674
Acid Extractable Tin (Sn)	ug/g	<5	5	2241777	8	5	2242674
Acid Extractable Uranium (U)	ug/g	0.90	0.05	2241777	0.58	0.05	2242674
Acid Extractable Vanadium (V)	ug/g	45	5	2241777	26	5	2242674
Acid Extractable Zinc (Zn)	ug/g	44	5	2241777	210	5	2242674
Acid Extractable Mercury (Hg)	ug/g	<0.05	0.05	2241777	0.38	0.05	2242674

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 #: B0B1195
Report Date: 2010/08/24

Stantec Consulting Ltd
Client Project #: 123600017
Project name: CLYDE RIVER PH III ESA
Your P.O. #: 16300NR

GENERAL COMMENTS

Sample GV7400-01: Metals analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PH III ESA

Quality Assurance Report

Maxxam Job Number: MB0B1195

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2240678	DEE	RPD	Moisture	2010/08/19	NC		%	20
2241584	SAC	Matrix Spike	Chromium (VI)	2010/08/24		25 (1)	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/24		107	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/24	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/24	NC		%	25
2241595	SAC	Matrix Spike [GV7403-01]	Chromium (VI)	2010/08/24		0 (1)	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/24		108	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/24	<0.2		ug/g	
		RPD [GV7403-01]	Chromium (VI)	2010/08/24	NC		%	25
2241777	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/24		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/24		98	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/24		96	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/24		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/24		94	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/24		95	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/24		97	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/24		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/24		92	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/24		92	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/24		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/24		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/24		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/24		97	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/24		94	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/24		95	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/24		95	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/24		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/24		90	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/24		101	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/24		100	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/24		105	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/24		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/24		97	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/24		108	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/24		110	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/24		107	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/24		103	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/24		103	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/24		107	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/24		107	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/24		106	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/24		105	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/24		105	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/24		112	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/24		107	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/24		107	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/24		105	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/24		105	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/24		107	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/24		105	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/24		108	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/24		103	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/24		106	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/24		110	%	75 - 125

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B1195

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241777	KCO	QC Standard	Acid Extractable Vanadium (V)	2010/08/24		112	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/24		109	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/24		103	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/24	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/24	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/24	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/24	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/24	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/24	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/24	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/24	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/24	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/24	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/24	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/24	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/24	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/24	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/24	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/24	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/24	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/24	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/24	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/24	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/24	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/24	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/24	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/24	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/24	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/24	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/24	5.0		%	35
			Acid Extractable Beryllium (Be)	2010/08/24	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/24	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/24	2.3		%	35
			Acid Extractable Cobalt (Co)	2010/08/24	3.2		%	35
			Acid Extractable Copper (Cu)	2010/08/24	6.0		%	35
			Acid Extractable Lead (Pb)	2010/08/24	34.1		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/24	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/24	4.7		%	35
			Acid Extractable Selenium (Se)	2010/08/24	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/24	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/24	NC		%	35
			Acid Extractable Uranium (U)	2010/08/24	2.7		%	25
			Acid Extractable Vanadium (V)	2010/08/24	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/24	0.4		%	35
			Acid Extractable Mercury (Hg)	2010/08/24	NC		%	35
2242159	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/23		102	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/23	<0.05		ug/g	
2242365	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/23		104	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/23	<0.05		ug/g	
2242674	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/23		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/23		104	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/23		99	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/23		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/23		103	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/23		102	%	75 - 125

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B1195

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2242674	KCO	Matrix Spike	Acid Extractable Cadmium (Cd)	2010/08/23		102	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/23		99	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/23		95	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/23		88	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/23		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/23		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/23		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/23		104	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/23		102	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/23		100	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/23		101	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/23		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/23		96	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/23		107	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/23		103	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/23		99	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/23		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/23		107	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/23		100	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/23		102	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/23		96	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/23		98	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/23		99	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/23		96	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/23		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/23		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/23		96	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/23		95	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/23		102	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/23		95	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/23		99	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/23		99	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/23		98	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/23		98	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/23		98	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/23		96	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/23		91	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/23		99	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/23		98	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/23		100	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/23		93	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/23		92	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/23	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/23	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/23	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/23	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/23	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/23	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/23	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/23	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/23	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/23	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/23	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/23	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/23	<1		ug/g	

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 123600017
P.O. #: 16300NR
Project name: CLYDE RIVER PH III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B1195

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2242674	KCO	Method Blank	Acid Extractable Molybdenum (Mo)	2010/08/23	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/23	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/23	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/23	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/23	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/23	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/23	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/23	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/23	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/23	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/23	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/23	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/23	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/23	1.8		%	35
			Acid Extractable Beryllium (Be)	2010/08/23	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/23	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/23	6.6		%	35
			Acid Extractable Cobalt (Co)	2010/08/23	1.3		%	35
			Acid Extractable Copper (Cu)	2010/08/23	14.0		%	35
			Acid Extractable Lead (Pb)	2010/08/23	3.1		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/23	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/23	6.7		%	35
			Acid Extractable Selenium (Se)	2010/08/23	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/23	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/23	NC		%	35
			Acid Extractable Vanadium (V)	2010/08/23	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/23	0.7		%	35
			Acid Extractable Mercury (Hg)	2010/08/23	NC		%	35

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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 matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.

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CHAIN OF CUSTODY RECORD

Maxxam Analytics Inc
6740 Campobello Road, Mississauga, ON L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5778 Toll Free: (800) 563-6266

IMMEDIATE USE

Page 1 of 1

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Stantec	Company Name:	Quotation #: B05402	
Contact Name: Patricia Cayne	Contact Name:	P.O. #:	CHAIN OF CUSTODY #
Address: PO Box 1680 Yellowknife, NT X1A 2P3	Address: Same	Project #: 123600017	00573303
Phone: 867-920-2216 Fax: 867-920-2278	Phone: Fax:	Project Name: Clyde River PhillES4	
Email: patricia-cayne@stantec.com	Email:	Location:	
		Sampled By: MN/JS	

REGULATORY CRITERIA

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

- ☐ MISA
- ☐ PWQO
- ☐ Reg. 558
- Reg. 153: ☐ Table 1 ☐ Table 2 ☐ Table 3
- Sewer Use: ☐ Sanitary ☐ Storm
- Region:
- ☐ Other: CCME (specify)
- Report Criteria on C of A? ☐

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

ANALYSIS REQUESTED (Please be specific)

Regulated Drinking Water? (Y / N)
Metals Field Filtered? (Y / N)
CCME BTEX, F1-F4
PAHs
metals (CCME, ATL)

	Sample Identification	Date Sampled	Time Sampled	Matrix (GW, SW, Soil, etc.)	# of Cont.
1	BCR-S26	Aug 13/10	2:32pm	Soil	1 bag
2	BCR-S21	Aug 13/10	2:15pm	Soil	1 bag
3	BCR-S24	Aug 13/10	2:02pm	Soil	1 bag
4	OCR-89	Aug 13/10	10:20am	Soil	1 bag
5	OCR-S1	Aug 13/10	11:45am	Soil	1 bag
6	OCR-S12	Aug 13/10	9:15am	Soil	1 bag
7	OCR-S20	Aug 13/10	10:42am	Soil	1 bag
8	OCR-SE2	Aug 13/10	11:20am	Soil	1 bag
9					
10					
11					
12					

TURNAROUND TIME (TAT) REQUIRED

PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS.

Regular (Standard) TAT:
☑ 5 to 7 Working Days

Rush TAT: Rush Confirmation #: (call Lab for #)
☐ 1 day ☐ 2 days ☐ 3 days

DATE Required:

TIME Required:

Please note that TAT for certain tests such as BOD and Dissolved [illegible] - contact your Project

16-Aug-10 15:06
MARIE (MCNAIR) MUI
B0B1195
ABH ENV-734

REC'D IN OTTAWA

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
Melissa Nicholson	Jessica Pi	Aug 13/10	15:06
	ZOFIA ZEMITA	2010/08/17	9:22

Laboratory Use Only

Temperature (°C) on Receipt	Condition of Sample on Receipt
3.6.4 11/12°C	☐ OK ☐ SIF

*MANDATORY SECTIONS IN GREY MUST BE FILLED OUT. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

ENVCOC-ONT-05/06

White: Maxxam Yellow: Mail Pink: Client

Your Project #: MB0B3041, 123600017
Site: CLYDE RIVER

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B076455
Received: 2010/08/26, 8:30

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Silica (Reactive)	1	N/A	2010/08/27	AB SOP-00011	EPA 370.1

Encryption Key

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

JENNIFER RISPLER,
Email: Jennifer.Rispler@MaxxamAnalytics.com
Phone# (403) 735-2201 Ext:2201

==========

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 #: B076455
Report Date: 2010/08/27

MAXXAM ANALYTICS INC.
Client Project #: MB0B3041, 123600017
Site Reference: CLYDE RIVER

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		W49108	W49108		
Sampling Date		2010/08/17	2010/08/17		
	Units	**CW-5 (GW5746)**	**CW-5 (GW5746) Lab-Dup**	**RDL**	**QC Batch**
Misc. Inorganics					
Reactive Silica	mg/L	3.6	3.3	0.05	4214011

RDL = Reportable Detection Limit

Maxxam Job #: B076455
Report Date: 2010/08/27

MAXXAM ANALYTICS INC.
Client Project #: MB0B3041, 123600017
Site Reference: CLYDE RIVER

Package 1	0.3°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B3041, 123600017
P.O. #:
Site Reference: CLYDE RIVER

Quality Assurance Report

Maxxam Job Number: CB076455

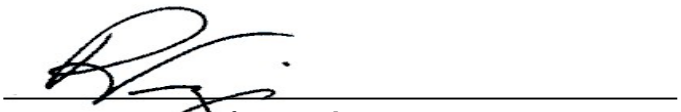
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4214011	CZ0	Matrix Spike [W49108-01]	Reactive Silica	2010/08/27		NC	%	80 - 120
		Spiked Blank	Reactive Silica	2010/08/27		105	%	89 - 110
		Method Blank	Reactive Silica	2010/08/27	<0.05		mg/L	
		RPD [W49108-01]	Reactive Silica	2010/08/27	6.4		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
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.

Validation Signature Page

Maxxam Job #: B076455

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



RON VENZI, Scientific Specialist

==========

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

Your Project #: 1236000017
Site: CLYDE RIVER
Your C.O.C. #: 20063904, 200639-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/13
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B3041
Received: 2010/08/19, 14:05

Sample Matrix: Water
Samples Received: 14

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Alkalinity	1	N/A	2010/08/23	CAM SOP-00448	SM 2320B
Carbonate, Bicarbonate and Hydroxide	1	N/A	2010/08/25	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A	2010/08/23	CAM SOP-00463	SM 4500 Cl E
Colour	1	N/A	2010/08/26	CAM SOP-00412	APHA 2120
Conductivity	1	N/A	2010/08/23	CAM SOP-00448	SM 2510
Petroleum Hydro. CCME F1 & BTEX in Water (1)	2	N/A	2010/08/23	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Water (1)	3	N/A	2010/08/24	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Water (1)	5	N/A	2010/08/25	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Water (1)	2	N/A	2010/08/26	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water (1)	3	2010/08/19	2010/08/24	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water (1)	3	2010/08/20	2010/08/21	CAM SOP-00316	CCME Hydrocarbons
Petroleum Hydrocarbons F2-F4 in Water (1)	2	2010/08/23	2010/08/24	CAM SOP-00316	CCME Hydrocarbons
Hardness (calculated as CaCO3)	1	N/A	2010/08/25	CAM SOP 00102	SM 2340 B
Lab Filtered Metals Analysis by ICP	1	2010/08/23	2010/08/24	CAM SOP-00408	EPA 6010
Dissolved Metals by ICPMS	2	N/A	2010/08/24	CAM SOP-00447	EPA 6020
Total Metals Analysis by ICPMS	5	N/A	2010/08/26	CAM SOP-00447	EPA 6020
Total Metals Analysis by ICPMS	1	N/A	2010/08/27	CAM SOP-00447	EPA 6020
Ammonia-N	1	N/A	2010/08/27	CAM SOP-00441	US GS I-2522-90
Nitrate (NO3) and Nitrite (NO2) in Water (1)	1	N/A	2010/08/23	CAM SOP-00440	SM 4500 NO3I/NO2B
pH	1	N/A	2010/08/23	CAM SOP-00448	SM 4500H
Orthophosphate	1	N/A	2010/08/23	CAM SOP-00461	SM 4500 P-F
Sat. pH and Langelier Index (@ 20C)	1	N/A	2010/08/25		
Sat. pH and Langelier Index (@ 4C)	1	N/A	2010/08/25		
Sulphate by Automated Colourimetry	1	N/A	2010/08/23	CAM SOP-00464	EPA 375.4
Total Dissolved Solids (TDS calc)	1	N/A	2010/08/25		
Total Organic Carbon (TOC)	1	N/A	2010/08/26	CAM SOP-00446	EPA 415.1 modified
Total Phosphorus (Colourimetric)	1	2010/08/26	2010/08/27	CAM SOP-00407	APHA 4500 P,B,F
Turbidity	1	N/A	2010/08/23	CAM SOP-00417	APHA 2130B

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

(1) This test was performed by Maxxam Ottawa
(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

../2

Your Project #: 1236000017
Site: CLYDE RIVER
Your C.O.C. #: 20063904, 200639-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/13
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

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Total cover pages: 2

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

RESULTS OF ANALYSES OF WATER

Maxxam ID		GW5746		
Sampling Date		2010/08/17 11:12		
COC Number		200639-0		
	Units	**CW-5**	**RDL**	**QC Batch**
Calculated Parameters				
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	5	1	2239937
Calculated TDS	mg/L	66	1	2239941
Carb. Alkalinity (calc. as CaCO3)	mg/L	<1	1	2239937
Hardness (CaCO3)	mg/L	28	1	2239910
Langelier Index (@ 20C)	N/A	-2.89		2239939
Langelier Index (@ 4C)	N/A	-3.14		2239940
Saturation pH (@ 20C)	N/A	9.99		2239939
Saturation pH (@ 4C)	N/A	10.2		2239940
Inorganics				
Total Ammonia-N	mg/L	<0.05	0.05	2245703
Colour	TCU	9	2	2246499
Conductivity	umho/cm	140	1	2242883
Total Organic Carbon (TOC)	mg/L	2.7	0.2	2245713
Orthophosphate (P)	mg/L	<0.01	0.01	2241214
pH	pH	7.1		2242885
Total Phosphorus	mg/L	0.003	0.002	2246709
Dissolved Sulphate (SO4)	mg/L	4	1	2241215
Turbidity	NTU	0.8	0.1	2242831
Alkalinity (Total as CaCO3)	mg/L	5	1	2242882
Dissolved Chloride (Cl)	mg/L	33	1	2241210
Nitrite (N)	mg/L	<0.01	0.01	2241647
Nitrate (N)	mg/L	<0.1	0.1	2241647

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
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Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GW5667			GW5668	GW5669		
Sampling Date		2010/08/16 08:14			2010/08/16 08:45	2010/08/16 10:12		
COC Number		200639-0			200639-0	200639-0		
	Units	**MW14**	**RDL**	**QC Batch**	**MW1**	**MW13**	**RDL**	**QC Batch**
Metals								
Dissolved Aluminum (Al)	ug/L					15	5	2242613
Total Aluminum (Al)	ug/L	70000	50	2246523	5500		50	2246467
Dissolved Antimony (Sb)	ug/L					<0.5	0.5	2242613
Total Antimony (Sb)	ug/L	<5	5	2246523	<5		5	2246467
Dissolved Arsenic (As)	ug/L					1	1	2242613
Total Arsenic (As)	ug/L	12	10	2246523	<50		50	2246467
Dissolved Barium (Ba)	ug/L					180	5	2242613
Total Barium (Ba)	ug/L	560	50	2246523	96		50	2246467
Dissolved Beryllium (Be)	ug/L					<0.5	0.5	2242613
Total Beryllium (Be)	ug/L	<5	5	2246523	<5		5	2246467
Dissolved Boron (B)	ug/L					400	10	2242613
Total Boron (B)	ug/L	<100	100	2246523	2400		100	2246467
Dissolved Cadmium (Cd)	ug/L					0.2	0.1	2242613
Total Cadmium (Cd)	ug/L	<1	1	2246523	2		1	2246467
Dissolved Chromium (Cr)	ug/L					12	5	2242613
Total Chromium (Cr)	ug/L	110	50	2246523	<50		50	2246467
Dissolved Cobalt (Co)	ug/L					5.9	0.5	2242613
Total Cobalt (Co)	ug/L	56	5	2246523	16		5	2246467
Dissolved Copper (Cu)	ug/L					42	1	2242613
Total Copper (Cu)	ug/L	220	10	2246523	110		10	2246467
Dissolved Iron (Fe)	ug/L					26000	100	2242613
Total Iron (Fe)	ug/L	290000	1000	2246523	13000		1000	2246467
Dissolved Lead (Pb)	ug/L					<0.5	0.5	2242613
Total Lead (Pb)	ug/L	78	5	2246523	8		5	2246467
Dissolved Lithium (Li)	ug/L					16	5	2242613
Total Lithium (Li)	ug/L	63	50	2246523	93		50	2246467
Dissolved Manganese (Mn)	ug/L					820	2	2242613
Total Manganese (Mn)	ug/L	3500	20	2246523	390		20	2246467
Dissolved Molybdenum (Mo)	ug/L					3	1	2242613
Total Molybdenum (Mo)	ug/L	<10	10	2246523	36		10	2246467
Dissolved Nickel (Ni)	ug/L					18	1	2242613
Total Nickel (Ni)	ug/L	120	10	2246523	49		10	2246467

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GW5667			GW5668	GW5669		
Sampling Date		2010/08/16 08:14			2010/08/16 08:45	2010/08/16 10:12		
COC Number		200639-0			200639-0	200639-0		
	Units	**MW14**	**RDL**	**QC Batch**	**MW1**	**MW13**	**RDL**	**QC Batch**
Dissolved Selenium (Se)	ug/L					<2	2	2242613
Total Selenium (Se)	ug/L	<20	20	2246523	<20		20	2246467
Dissolved Silicon (Si)	ug/L					7800	50	2242613
Total Silicon (Si)	ug/L	72000	500	2246523	12000		500	2246467
Dissolved Silver (Ag)	ug/L					<0.1	0.1	2242613
Total Silver (Ag)	ug/L	3	1	2246523	<1		1	2246467
Dissolved Strontium (Sr)	ug/L					350	1	2242613
Total Strontium (Sr)	ug/L	810	10	2246523	3200		10	2246467
Dissolved Thallium (Tl)	ug/L					<0.05	0.05	2242613
Total Thallium (Tl)	ug/L	1.7	0.5	2246523	<0.5		0.5	2246467
Dissolved Tin (Sn)	ug/L					<1	1	2242613
Total Tin (Sn)	ug/L	<10	10	2246523	<10		10	2246467
Dissolved Titanium (Ti)	ug/L					<5	5	2242613
Total Titanium (Ti)	ug/L	6800	50	2246523	1100		50	2246467
Dissolved Uranium (U)	ug/L					4.5	0.1	2242613
Total Uranium (U)	ug/L	18	1	2246523	5		1	2246467
Dissolved Vanadium (V)	ug/L					<1	1	2242613
Total Vanadium (V)	ug/L	370	10	2246523	<50		50	2246467
Dissolved Zinc (Zn)	ug/L					70	5	2242613
Total Zinc (Zn)	ug/L	320	50	2246523	200		50	2246467

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GW5670		GW5746	GW5746		GW5747		
Sampling Date		2010/08/16 12:32		2010/08/17 11:12	2010/08/17 11:12		2010/08/17 11:35		
COC Number		200639-0		200639-0	200639-0		200639-0		
	Units	**MW11**	**RDL**	**CW-5**	**CW-5 Lab-Dup**	**RDL**	**SW-DUMP**	**RDL**	**QC Batch**
Metals									
Dissolved Calcium (Ca)	mg/L		0.05	4.49	4.46	0.05		0.05	2242528
Dissolved Magnesium (Mg)	mg/L		0.05	3.99	3.99	0.05		0.05	2242528
Dissolved Potassium (K)	mg/L		1	<1	<1	1		1	2242528
Dissolved Sodium (Na)	mg/L		0.5	12.9	12.9	0.5		0.5	2242528
Total Aluminum (Al)	ug/L	19000	5	90	91	5	16000	5	2246523
Total Antimony (Sb)	ug/L	<0.5	0.5	<0.5	<0.5	0.5	29	0.5	2246523
Total Arsenic (As)	ug/L	3	1	<1	<1	1	6	1	2246523
Total Barium (Ba)	ug/L	310	5	9	9	5	140	5	2246523
Total Beryllium (Be)	ug/L	<0.5	0.5	<0.5	<0.5	0.5	<0.5	0.5	2246523
Total Boron (B)	ug/L	420	10	<10	<10	10	47	10	2246523
Total Cadmium (Cd)	ug/L	0.1	0.1	<0.1	<0.1	0.1	2.6	0.1	2246523
Total Calcium (Ca)	ug/L		200	4500	4500	200		200	2246523
Total Chromium (Cr)	ug/L	37	5	<5	<5	5	30	5	2246523
Total Cobalt (Co)	ug/L	12	0.5	<0.5	<0.5	0.5	9.8	0.5	2246523
Total Copper (Cu)	ug/L	150	1	1	1	1	170	1	2246523
Total Iron (Fe)	ug/L	26000	100	<100	<100	100	53000	100	2246523
Total Lead (Pb)	ug/L	13	0.5	<0.5	<0.5	0.5	830	0.5	2246523
Total Lithium (Li)	ug/L	23	5			5	14	5	2246523
Total Magnesium (Mg)	ug/L		50	4500	4500	50		50	2246523
Total Manganese (Mn)	ug/L	1100	2	3	3	2	560	2	2246523
Total Molybdenum (Mo)	ug/L	4	1	<1	<1	1	6	1	2246523
Total Nickel (Ni)	ug/L	33	1	<1	<1	1	41	1	2246523
Total Potassium (K)	ug/L		200	1000	1000	200		200	2246523
Total Selenium (Se)	ug/L	<2	2	<2	<2	2	<2	2	2246523
Total Silicon (Si)	ug/L	35000	50	1800	1800	50	27000	50	2246523
Total Silver (Ag)	ug/L	0.3	0.1	<0.1	<0.1	0.1	0.7	0.1	2246523
Total Sodium (Na)	ug/L		100	14000	14000	100		100	2246523
Total Strontium (Sr)	ug/L	60	1	36	36	1	89	1	2246523
Total Thallium (Tl)	ug/L	0.59	0.05	<0.05	<0.05	0.05	0.34	0.05	2246523
Total Tin (Sn)	ug/L	2	1			1	54	1	2246523
Total Titanium (Ti)	ug/L	2300	50	6	6	5	1700	50	2246523

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

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GW5670		GW5746	GW5746		GW5747		
Sampling Date		2010/08/16 12:32		2010/08/17 11:12	2010/08/17 11:12		2010/08/17 11:35		
COC Number		200639-0		200639-0	200639-0		200639-0		
	Units	**MW11**	**RDL**	**CW-5**	**CW-5 Lab-Dup**	**RDL**	**SW-DUMP**	**RDL**	**QC Batch**
Total Uranium (U)	ug/L	1.7	0.1	<0.1	<0.1	0.1	1.3	0.1	2246523
Total Vanadium (V)	ug/L	46	1	<1	<1	1	62	1	2246523
Total Zinc (Zn)	ug/L	200	5	<5	<5	5	460	5	2246523

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

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GW5748		GW5751		
Sampling Date		2010/08/16 09:14				
COC Number		200639-0		200639-0		
	Units	**MW7**	**RDL**	**TBLK-M-10-476**	**RDL**	**QC Batch**
Metals						
Dissolved Aluminum (Al)	ug/L	300	5		5	2242613
Total Aluminum (Al)	ug/L		5	11	5	2246523
Dissolved Antimony (Sb)	ug/L	<0.5	0.5		0.5	2242613
Total Antimony (Sb)	ug/L		0.5	<0.5	0.5	2246523
Dissolved Arsenic (As)	ug/L	<1	1		1	2242613
Total Arsenic (As)	ug/L		1	<1	1	2246523
Dissolved Barium (Ba)	ug/L	78	5		5	2242613
Total Barium (Ba)	ug/L		5	<5	5	2246523
Dissolved Beryllium (Be)	ug/L	<0.5	0.5		0.5	2242613
Total Beryllium (Be)	ug/L		0.5	<0.5	0.5	2246523
Dissolved Boron (B)	ug/L	150	10		10	2242613
Total Boron (B)	ug/L		10	<10	10	2246523
Dissolved Cadmium (Cd)	ug/L	0.7	0.1		0.1	2242613
Total Cadmium (Cd)	ug/L		0.1	<0.1	0.1	2246523
Dissolved Chromium (Cr)	ug/L	<5	5		5	2242613
Total Chromium (Cr)	ug/L		5	<5	5	2246523
Dissolved Cobalt (Co)	ug/L	1.3	0.5		0.5	2242613
Total Cobalt (Co)	ug/L		0.5	<0.5	0.5	2246523
Dissolved Copper (Cu)	ug/L	58	1		1	2242613
Total Copper (Cu)	ug/L		1	<1	1	2246523
Dissolved Iron (Fe)	ug/L	170	100		100	2242613
Total Iron (Fe)	ug/L		100	<100	100	2246523
Dissolved Lead (Pb)	ug/L	4.8	0.5		0.5	2242613
Total Lead (Pb)	ug/L		0.5	<0.5	0.5	2246523
Dissolved Lithium (Li)	ug/L	7	5		5	2242613
Total Lithium (Li)	ug/L		5	<5	5	2246523
Dissolved Manganese (Mn)	ug/L	580	2		2	2242613
Total Manganese (Mn)	ug/L		2	<2	2	2246523
Dissolved Molybdenum (Mo)	ug/L	<1	1		1	2242613
Total Molybdenum (Mo)	ug/L		1	<1	1	2246523
Dissolved Nickel (Ni)	ug/L	11	1		1	2242613
Total Nickel (Ni)	ug/L		1	<1	1	2246523

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		GW5748		GW5751		
Sampling Date		2010/08/16 09:14				
COC Number		200639-0		200639-0		
	Units	**MW7**	**RDL**	**TBLK-M-10-476**	**RDL**	**QC Batch**
Dissolved Selenium (Se)	ug/L	<2	2		2	2242613
Total Selenium (Se)	ug/L		2	<2	2	2246523
Dissolved Silicon (Si)	ug/L	5500	50		50	2242613
Total Silicon (Si)	ug/L		50	<50	50	2246523
Dissolved Silver (Ag)	ug/L	0.1	0.1		0.1	2242613
Total Silver (Ag)	ug/L		0.1	<0.1	0.1	2246523
Dissolved Strontium (Sr)	ug/L	190	1		1	2242613
Total Strontium (Sr)	ug/L		1	<1	1	2246523
Dissolved Thallium (Tl)	ug/L	<0.05	0.05		0.05	2242613
Total Thallium (Tl)	ug/L		0.05	<0.05	0.05	2246523
Dissolved Tin (Sn)	ug/L	<1	1		1	2242613
Total Tin (Sn)	ug/L		1	<1	1	2246523
Dissolved Titanium (Ti)	ug/L	<5	5		5	2242613
Total Titanium (Ti)	ug/L		50	<5	5	2246523
Dissolved Uranium (U)	ug/L	0.2	0.1			2242613
Total Uranium (U)	ug/L		0.1	<0.1	0.1	2246523
Dissolved Vanadium (V)	ug/L	<1	1			2242613
Total Vanadium (V)	ug/L		1	<1	1	2246523
Dissolved Zinc (Zn)	ug/L	320	5			2242613
Total Zinc (Zn)	ug/L		5	<5	5	2246523

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW5667	GW5668		GW5669	GW5669		
Sampling Date		2010/08/16 08:14	2010/08/16 08:45		2010/08/16 10:12	2010/08/16 10:12		
COC Number		200639-0	200639-0		200639-0	200639-0		
	Units	**MW14**	**MW1**	**QC Batch**	**MW13**	**MW13 Lab-Dup**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/L	<0.2	<0.2	2239994	<0.2	<0.2	0.2	2241760
Toluene	ug/L	0.4	0.2	2239994	<0.2	<0.2	0.2	2241760
Ethylbenzene	ug/L	<0.2	<0.2	2239994	<0.2	<0.2	0.2	2241760
o-Xylene	ug/L	<0.2	<0.2	2239994	<0.2	<0.2	0.2	2241760
p+m-Xylene	ug/L	<0.4	<0.4	2239994	<0.4	<0.4	0.4	2241760
Total Xylenes	ug/L	<0.4	<0.4	2239994	<0.4	<0.4	0.4	2241760
F1 (C6-C10)	ug/L	<100	<100	2239994	<100	<100	100	2241760
F1 (C6-C10) - BTEX	ug/L	<100	<100	2239994	<100	<100	100	2241760
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100	2240099	<100		100	2240099
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	101	100	2239994	98	98		2241760
4-Bromofluorobenzene	%	96	99	2239994	98	101		2241760
D10-Ethylbenzene	%	98	99	2239994	106	93		2241760
D4-1,2-Dichloroethane	%	108	111	2239994	108	106		2241760
o-Terphenyl	%	99	102	2240099	104			2240099

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

Maxxam Job #: B0B3041
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Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW5670	GW5671		GW5746	GW5746		
Sampling Date		2010/08/16 12:32	2010/08/16 13:14		2010/08/17 11:12	2010/08/17 11:12		
COC Number		200639-0	200639-0		200639-0	200639-0		
	Units	**MW11**	**MW12**	**QC Batch**	**CW-5**	**CW-5 Lab-Dup**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/L	<0.2	<0.2	2241760	<0.2	<0.2	0.2	2244324
Toluene	ug/L	<0.2	0.2	2241760	<0.2	<0.2	0.2	2244324
Ethylbenzene	ug/L	<0.2	<0.2	2241760	<0.2	<0.2	0.2	2244324
o-Xylene	ug/L	<0.2	<0.2	2241760	<0.2	<0.2	0.2	2244324
p+m-Xylene	ug/L	<0.4	<0.4	2241760	<0.4	<0.4	0.4	2244324
Total Xylenes	ug/L	<0.4	<0.4	2241760	<0.4	<0.4	0.4	2244324
F1 (C6-C10)	ug/L	<100	<100	2241760	<100	<100	100	2244324
F1 (C6-C10) - BTEX	ug/L	<100	<100	2241760	<100	<100	100	2244324
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/L			2240099	<100		100	2240095
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	98	98	2241760	97	94		2244324
4-Bromofluorobenzene	%	100	100	2241760	104	105		2244324
D10-Ethylbenzene	%	106	105	2241760	98	102		2244324
D4-1,2-Dichloroethane	%	106	108	2241760	105	102		2244324
o-Terphenyl	%			2240099	103			2240095

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

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW5747	GW5748	GW5749	GW5750		
Sampling Date		2010/08/17 11:35	2010/08/16 09:14	2010/08/16 09:35	2010/08/16 09:42		
COC Number		200639-0	200639-0	200639-0	200639-0		
	Units	**SW-DUMP**	**MW7**	**MW5**	**MW3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2244324
Toluene	ug/L	0.3	0.3	1.2	0.4	0.2	2244324
Ethylbenzene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2244324
o-Xylene	ug/L	<0.2	<0.2	<0.2	<0.2	0.2	2244324
p+m-Xylene	ug/L	<0.4	<0.4	<0.4	<0.4	0.4	2244324
Total Xylenes	ug/L	<0.4	<0.4	<0.4	<0.4	0.4	2244324
F1 (C6-C10)	ug/L	<100	<100	<100	<100	100	2244324
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	<100	100	2244324
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/L	<100	<100			100	2240095
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	94	95	92	94		2244324
4-Bromofluorobenzene	%	104	106	106	106		2244324
D10-Ethylbenzene	%	105	113	106	100		2244324
D4-1,2-Dichloroethane	%	106	89	104	91		2244324
o-Terphenyl	%	101	103				2240095

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW5752	GW5753	GW5754		
Sampling Date				2010/08/17 17:45		
COC Number		200639-0	200639-0	200639-0		
	Units	**TBLK-F24W-10-476**	**TBLK-F1BW-10-464**	**FB**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/L		<0.2	<0.2	0.2	2244324
Toluene	ug/L		<0.2	<0.2	0.2	2244324
Ethylbenzene	ug/L		<0.2	<0.2	0.2	2244324
o-Xylene	ug/L		<0.2	<0.2	0.2	2244324
p+m-Xylene	ug/L		<0.4	<0.4	0.4	2244324
Total Xylenes	ug/L		<0.4	<0.4	0.4	2244324
F1 (C6-C10)	ug/L		<100	<100	100	2244324
F1 (C6-C10) - BTEX	ug/L		<100	<100	100	2244324
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/L	<100		<100	100	2242628
Surrogate Recovery (%)						
1,4-Difluorobenzene	%		95	94		2244324
4-Bromofluorobenzene	%		104	106		2244324
D10-Ethylbenzene	%		112	103		2244324
D4-1,2-Dichloroethane	%		104	102		2244324
o-Terphenyl	%	106		103		2242628

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3041
Report Date: 2010/09/13

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Sampler Initials: MN

GENERAL COMMENTS

Sample GW5667-01: Metals Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Sample GW5668-01: Metals Analysis:: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

Results relate only to the items tested.

Stantec Consulting Ltd
Attention: Patricia Coyne
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P.O. #:
Project name: CLYDE RIVER

Quality Assurance Report

Maxxam Job Number: TB0B3041

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2239994	STE	Matrix Spike	1,4-Difluorobenzene	2010/08/24		95	%	70 - 130
			4-Bromofluorobenzene	2010/08/24		105	%	70 - 130
			D10-Ethylbenzene	2010/08/24		95	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/24		92	%	70 - 130
			Benzene	2010/08/24		77	%	70 - 130
			Toluene	2010/08/24		89	%	70 - 130
			Ethylbenzene	2010/08/24		91	%	70 - 130
			o-Xylene	2010/08/24		95	%	70 - 130
			p+m-Xylene	2010/08/24		91	%	70 - 130
			F1 (C6-C10)	2010/08/24		103	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2010/08/23		97	%	70 - 130
			4-Bromofluorobenzene	2010/08/23		105	%	70 - 130
			D10-Ethylbenzene	2010/08/23		97	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/23		90	%	70 - 130
			Benzene	2010/08/23		88	%	70 - 130
			Toluene	2010/08/23		90	%	70 - 130
			Ethylbenzene	2010/08/23		92	%	70 - 130
			o-Xylene	2010/08/23		93	%	70 - 130
			p+m-Xylene	2010/08/23		93	%	70 - 130
			F1 (C6-C10)	2010/08/23		105	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2010/08/20		96	%	70 - 130
			4-Bromofluorobenzene	2010/08/20		105	%	70 - 130
			D10-Ethylbenzene	2010/08/20		106	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/20		101	%	70 - 130
			Benzene	2010/08/20	<0.2		ug/L	
			Toluene	2010/08/20	<0.2		ug/L	
			Ethylbenzene	2010/08/20	<0.2		ug/L	
			o-Xylene	2010/08/20	<0.2		ug/L	
			p+m-Xylene	2010/08/20	<0.4		ug/L	
			Total Xylenes	2010/08/20	<0.4		ug/L	
			F1 (C6-C10)	2010/08/20	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/08/20	<100		ug/L	
		RPD	Benzene	2010/08/23	3.2		%	40
			Toluene	2010/08/23	3.7		%	40
			Ethylbenzene	2010/08/23	NC		%	40
			o-Xylene	2010/08/23	NC		%	40
			p+m-Xylene	2010/08/23	NC		%	40
			Total Xylenes	2010/08/23	NC		%	40
			F1 (C6-C10)	2010/08/23	NC		%	40
			F1 (C6-C10) - BTEX	2010/08/23	NC		%	40
2240095	LHR	Matrix Spike	o-Terphenyl	2010/08/20		122	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20		88	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/20		122	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20		98	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/20		113	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/20	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/20	NC		%	50
2240099	PRB	Matrix Spike	o-Terphenyl	2010/08/23		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		98	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/23		102	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		96	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/23		101	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/23	NC		%	50
2241210	DRM	Matrix Spike	Dissolved Chloride (Cl)	2010/08/23		104	%	75 - 125

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241210	DRM	Spiked Blank	Dissolved Chloride (Cl)	2010/08/23		104	%	80 - 120
		Method Blank	Dissolved Chloride (Cl)	2010/08/23	<1		mg/L	
		RPD	Dissolved Chloride (Cl)	2010/08/23	NC		%	20
2241214	DRM	Matrix Spike	Orthophosphate (P)	2010/08/23		105	%	75 - 125
		Spiked Blank	Orthophosphate (P)	2010/08/23		99	%	80 - 120
		Method Blank	Orthophosphate (P)	2010/08/23	<0.01		mg/L	
		RPD	Orthophosphate (P)	2010/08/23	NC		%	25
2241215	DRM	Matrix Spike	Dissolved Sulphate (SO4)	2010/08/23		105	%	75 - 125
		Spiked Blank	Dissolved Sulphate (SO4)	2010/08/23		98	%	80 - 120
		Method Blank	Dissolved Sulphate (SO4)	2010/08/23	<1		mg/L	
		RPD	Dissolved Sulphate (SO4)	2010/08/23	NC		%	25
2241647	C_N	Matrix Spike	Nitrite (N)	2010/08/23		103	%	80 - 120
			Nitrate (N)	2010/08/23		96	%	80 - 120
		Spiked Blank	Nitrite (N)	2010/08/23		105	%	85 - 115
			Nitrate (N)	2010/08/23		107	%	85 - 115
		Method Blank	Nitrite (N)	2010/08/23	<0.01		mg/L	
			Nitrate (N)	2010/08/23	<0.1		mg/L	
		RPD	Nitrite (N)	2010/08/23	NC		%	25
			Nitrate (N)	2010/08/23	0.3		%	25
2241760	STE	Matrix Spike						
		[GW5670-02]	1,4-Difluorobenzene	2010/08/24		97	%	70 - 130
			4-Bromofluorobenzene	2010/08/24		107	%	70 - 130
			D10-Ethylbenzene	2010/08/24		90	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/24		110	%	70 - 130
			Benzene	2010/08/24		75	%	70 - 130
			Toluene	2010/08/24		77	%	70 - 130
			Ethylbenzene	2010/08/24		83	%	70 - 130
			o-Xylene	2010/08/24		92	%	70 - 130
			p+m-Xylene	2010/08/24		78	%	70 - 130
			F1 (C6-C10)	2010/08/24		87	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2010/08/24		101	%	70 - 130
			4-Bromofluorobenzene	2010/08/24		104	%	70 - 130
			D10-Ethylbenzene	2010/08/24		111	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/24		106	%	70 - 130
			Benzene	2010/08/24		82	%	70 - 130
			Toluene	2010/08/24		84	%	70 - 130
			Ethylbenzene	2010/08/24		92	%	70 - 130
			o-Xylene	2010/08/24		100	%	70 - 130
			p+m-Xylene	2010/08/24		87	%	70 - 130
			F1 (C6-C10)	2010/08/24		87	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2010/08/24		101	%	70 - 130
			4-Bromofluorobenzene	2010/08/24		98	%	70 - 130
			D10-Ethylbenzene	2010/08/24		108	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/24		99	%	70 - 130
			Benzene	2010/08/24	<0.2		ug/L	
			Toluene	2010/08/24	<0.2		ug/L	
			Ethylbenzene	2010/08/24	<0.2		ug/L	
			o-Xylene	2010/08/24	<0.2		ug/L	
			p+m-Xylene	2010/08/24	<0.4		ug/L	
			Total Xylenes	2010/08/24	<0.4		ug/L	
			F1 (C6-C10)	2010/08/24	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/08/24	<100		ug/L	
		RPD [GW5669-03]	Benzene	2010/08/24	NC		%	40
			Toluene	2010/08/24	NC		%	40
			Ethylbenzene	2010/08/24	NC		%	40

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2241760	STE	RPD [GW5669-03]	o-Xylene	2010/08/24	NC		%	40
			p+m-Xylene	2010/08/24	NC		%	40
			Total Xylenes	2010/08/24	NC		%	40
			F1 (C6-C10)	2010/08/24	NC		%	40
			F1 (C6-C10) - BTEX	2010/08/24	NC		%	40
2242528	JOH	Matrix Spike [GW5746-02]	Dissolved Calcium (Ca)	2010/08/24		104	%	80 - 120
			Dissolved Magnesium (Mg)	2010/08/24		102	%	80 - 120
			Dissolved Potassium (K)	2010/08/24		107	%	80 - 120
			Dissolved Sodium (Na)	2010/08/24		NC	%	80 - 120
		Spiked Blank	Dissolved Calcium (Ca)	2010/08/24		103	%	90 - 110
			Dissolved Magnesium (Mg)	2010/08/24		100	%	90 - 110
			Dissolved Potassium (K)	2010/08/24		100	%	90 - 110
			Dissolved Sodium (Na)	2010/08/24		104	%	90 - 110
		Method Blank	Dissolved Calcium (Ca)	2010/08/24	<0.05		mg/L	
			Dissolved Magnesium (Mg)	2010/08/24	<0.05		mg/L	
			Dissolved Potassium (K)	2010/08/24	<1		mg/L	
			Dissolved Sodium (Na)	2010/08/24	<0.5		mg/L	
		RPD [GW5746-02]	Dissolved Calcium (Ca)	2010/08/24	0.7		%	25
			Dissolved Magnesium (Mg)	2010/08/24	0.2		%	25
			Dissolved Potassium (K)	2010/08/24	NC		%	25
			Dissolved Sodium (Na)	2010/08/24	0.4		%	25
2242613	HRE	Matrix Spike	Dissolved Aluminum (Al)	2010/08/24		95	%	80 - 120
			Dissolved Antimony (Sb)	2010/08/24		105	%	80 - 120
			Dissolved Arsenic (As)	2010/08/24		104	%	80 - 120
			Dissolved Barium (Ba)	2010/08/24		96	%	80 - 120
			Dissolved Beryllium (Be)	2010/08/24		100	%	80 - 120
			Dissolved Boron (B)	2010/08/24		100	%	80 - 120
			Dissolved Cadmium (Cd)	2010/08/24		103	%	80 - 120
			Dissolved Chromium (Cr)	2010/08/24		97	%	80 - 120
			Dissolved Cobalt (Co)	2010/08/24		97	%	80 - 120
			Dissolved Copper (Cu)	2010/08/24		95	%	80 - 120
			Dissolved Iron (Fe)	2010/08/24		101	%	80 - 120
			Dissolved Lead (Pb)	2010/08/24		96	%	80 - 120
			Dissolved Lithium (Li)	2010/08/24		103	%	80 - 120
			Dissolved Manganese (Mn)	2010/08/24		NC	%	80 - 120
			Dissolved Molybdenum (Mo)	2010/08/24		105	%	80 - 120
			Dissolved Nickel (Ni)	2010/08/24		96	%	80 - 120
			Dissolved Selenium (Se)	2010/08/24		101	%	80 - 120
			Dissolved Silicon (Si)	2010/08/24		103	%	80 - 120
			Dissolved Silver (Ag)	2010/08/24		89	%	80 - 120
			Dissolved Strontium (Sr)	2010/08/24		NC	%	80 - 120
			Dissolved Thallium (Tl)	2010/08/24		95	%	80 - 120
			Dissolved Tin (Sn)	2010/08/24		103	%	80 - 120
			Dissolved Titanium (Ti)	2010/08/24		100	%	80 - 120
			Dissolved Uranium (U)	2010/08/24		103	%	80 - 120
			Dissolved Vanadium (V)	2010/08/24		98	%	80 - 120
			Dissolved Zinc (Zn)	2010/08/24		96	%	80 - 120
		Spiked Blank	Dissolved Aluminum (Al)	2010/08/24		98	%	90 - 110
			Dissolved Antimony (Sb)	2010/08/24		100	%	90 - 110
			Dissolved Arsenic (As)	2010/08/24		103	%	90 - 110
			Dissolved Barium (Ba)	2010/08/24		98	%	90 - 110
			Dissolved Beryllium (Be)	2010/08/24		99	%	90 - 110
			Dissolved Boron (B)	2010/08/24		102	%	90 - 110
			Dissolved Cadmium (Cd)	2010/08/24		97	%	90 - 110

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2242613	HRE	Spiked Blank	Dissolved Chromium (Cr)	2010/08/24		99	%	90 - 110
			Dissolved Cobalt (Co)	2010/08/24		97	%	90 - 110
			Dissolved Copper (Cu)	2010/08/24		98	%	90 - 110
			Dissolved Iron (Fe)	2010/08/24		102	%	90 - 110
			Dissolved Lead (Pb)	2010/08/24		99	%	90 - 110
			Dissolved Lithium (Li)	2010/08/24		103	%	90 - 110
			Dissolved Manganese (Mn)	2010/08/24		100	%	90 - 110
			Dissolved Molybdenum (Mo)	2010/08/24		98	%	90 - 110
			Dissolved Nickel (Ni)	2010/08/24		97	%	90 - 110
			Dissolved Selenium (Se)	2010/08/24		99	%	90 - 110
			Dissolved Silicon (Si)	2010/08/24		106	%	90 - 110
			Dissolved Silver (Ag)	2010/08/24		96	%	90 - 110
			Dissolved Strontium (Sr)	2010/08/24		100	%	90 - 110
			Dissolved Thallium (Tl)	2010/08/24		98	%	90 - 110
			Dissolved Tin (Sn)	2010/08/24		99	%	90 - 110
			Dissolved Titanium (Ti)	2010/08/24		103	%	90 - 110
			Dissolved Uranium (U)	2010/08/24		102	%	90 - 110
			Dissolved Vanadium (V)	2010/08/24		99	%	90 - 110
			Dissolved Zinc (Zn)	2010/08/24		98	%	90 - 110
		Method Blank	Dissolved Aluminum (Al)	2010/08/24	<5		ug/L	
			Dissolved Antimony (Sb)	2010/08/24	<0.5		ug/L	
			Dissolved Arsenic (As)	2010/08/24	<1		ug/L	
			Dissolved Barium (Ba)	2010/08/24	<5		ug/L	
			Dissolved Beryllium (Be)	2010/08/24	<0.5		ug/L	
			Dissolved Boron (B)	2010/08/24	<10		ug/L	
			Dissolved Cadmium (Cd)	2010/08/24	<0.1		ug/L	
			Dissolved Chromium (Cr)	2010/08/24	<5		ug/L	
			Dissolved Cobalt (Co)	2010/08/24	<0.5		ug/L	
			Dissolved Copper (Cu)	2010/08/24	<1		ug/L	
			Dissolved Iron (Fe)	2010/08/24	<100		ug/L	
			Dissolved Lead (Pb)	2010/08/24	<0.5		ug/L	
			Dissolved Lithium (Li)	2010/08/24	<5		ug/L	
			Dissolved Manganese (Mn)	2010/08/24	<2		ug/L	
			Dissolved Molybdenum (Mo)	2010/08/24	<1		ug/L	
			Dissolved Nickel (Ni)	2010/08/24	<1		ug/L	
			Dissolved Selenium (Se)	2010/08/24	<2		ug/L	
			Dissolved Silicon (Si)	2010/08/24	<50		ug/L	
			Dissolved Silver (Ag)	2010/08/24	<0.1		ug/L	
			Dissolved Strontium (Sr)	2010/08/24	<1		ug/L	
			Dissolved Thallium (Tl)	2010/08/24	<0.05		ug/L	
			Dissolved Tin (Sn)	2010/08/24	<1		ug/L	
			Dissolved Titanium (Ti)	2010/08/24	<5		ug/L	
			Dissolved Uranium (U)	2010/08/24	<0.1		ug/L	
			Dissolved Vanadium (V)	2010/08/24	<1		ug/L	
			Dissolved Zinc (Zn)	2010/08/24	<5		ug/L	
		RPD	Dissolved Lead (Pb)	2010/08/24	NC		%	25
2242628	LHR	Matrix Spike	o-Terphenyl	2010/08/24		107	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24		94	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/24		104	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24		85	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/24		100	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/24	NC		%	50
2242831	KTH	QC Standard	Turbidity	2010/08/23		99	%	85 - 115
		Method Blank	Turbidity	2010/08/23	<0.1		NTU	

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2242831	KTH	RPD	Turbidity	2010/08/23	2.1		%	25
2242882	YPA	QC Standard	Alkalinity (Total as CaCO3)	2010/08/23		96	%	85 - 115
		Method Blank	Alkalinity (Total as CaCO3)	2010/08/23	<1		mg/L	
		RPD	Alkalinity (Total as CaCO3)	2010/08/23	0.3		%	25
2242883	YPA	QC Standard	Conductivity	2010/08/23		102	%	85 - 115
		Method Blank	Conductivity	2010/08/23	<1		umho/cm	
		RPD	Conductivity	2010/08/23	1.6		%	25
2244324	STE	Matrix Spike						
		[GW5747-03]	1,4-Difluorobenzene	2010/08/25		94	%	70 - 130
			4-Bromofluorobenzene	2010/08/25		106	%	70 - 130
			D10-Ethylbenzene	2010/08/25		102	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/25		87	%	70 - 130
			Benzene	2010/08/25		82	%	70 - 130
			Toluene	2010/08/25		81	%	70 - 130
			Ethylbenzene	2010/08/25		86	%	70 - 130
			o-Xylene	2010/08/25		88	%	70 - 130
			p+m-Xylene	2010/08/25		86	%	70 - 130
			F1 (C6-C10)	2010/08/25		90	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2010/08/26		96	%	70 - 130
			4-Bromofluorobenzene	2010/08/26		104	%	70 - 130
			D10-Ethylbenzene	2010/08/26		102	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/26		87	%	70 - 130
			Benzene	2010/08/26		87	%	70 - 130
			Toluene	2010/08/26		92	%	70 - 130
			Ethylbenzene	2010/08/26		96	%	70 - 130
			o-Xylene	2010/08/26		99	%	70 - 130
			p+m-Xylene	2010/08/26		96	%	70 - 130
			F1 (C6-C10)	2010/08/26		104	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2010/08/25		97	%	70 - 130
			4-Bromofluorobenzene	2010/08/25		105	%	70 - 130
			D10-Ethylbenzene	2010/08/25		110	%	70 - 130
			D4-1,2-Dichloroethane	2010/08/25		99	%	70 - 130
			Benzene	2010/08/25	<0.2		ug/L	
			Toluene	2010/08/25	<0.2		ug/L	
			Ethylbenzene	2010/08/25	<0.2		ug/L	
			o-Xylene	2010/08/25	<0.2		ug/L	
			p+m-Xylene	2010/08/25	<0.4		ug/L	
			Total Xylenes	2010/08/25	<0.4		ug/L	
			F1 (C6-C10)	2010/08/25	<100		ug/L	
			F1 (C6-C10) - BTEX	2010/08/25	<100		ug/L	
		RPD [GW5746-07]	Benzene	2010/08/25	NC		%	40
			Toluene	2010/08/25	NC		%	40
			Ethylbenzene	2010/08/25	NC		%	40
			o-Xylene	2010/08/25	NC		%	40
			p+m-Xylene	2010/08/25	NC		%	40
			Total Xylenes	2010/08/25	NC		%	40
			F1 (C6-C10)	2010/08/25	NC		%	40
			F1 (C6-C10) - BTEX	2010/08/25	NC		%	40
2245703	ADB	Matrix Spike	Total Ammonia-N	2010/08/27		102	%	80 - 120
		Spiked Blank	Total Ammonia-N	2010/08/27		102	%	85 - 115
		Method Blank	Total Ammonia-N	2010/08/27	<0.05		mg/L	
		RPD	Total Ammonia-N	2010/08/27	NC		%	25
2245713	AHA	Matrix Spike	Total Organic Carbon (TOC)	2010/08/26		95	%	80 - 120
		Spiked Blank	Total Organic Carbon (TOC)	2010/08/26		95	%	80 - 120
		Method Blank	Total Organic Carbon (TOC)	2010/08/26	<0.2		mg/L	

Stantec Consulting Ltd
Attention: Patricia Coyne
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Quality Assurance Report (Continued)

Maxxam Job Number: TB0B3041

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2245713	AHA	RPD	Total Organic Carbon (TOC)	2010/08/26	0.6		%	20
2246467	VIV	Matrix Spike	Total Aluminum (Al)	2010/08/26		98	%	80 - 120
			Total Antimony (Sb)	2010/08/26		108	%	80 - 120
			Total Arsenic (As)	2010/08/26		99	%	80 - 120
			Total Barium (Ba)	2010/08/26		96	%	80 - 120
			Total Beryllium (Be)	2010/08/26		98	%	80 - 120
			Total Boron (B)	2010/08/26		95	%	80 - 120
			Total Cadmium (Cd)	2010/08/26		102	%	80 - 120
			Total Chromium (Cr)	2010/08/26		97	%	80 - 120
			Total Cobalt (Co)	2010/08/26		96	%	80 - 120
			Total Copper (Cu)	2010/08/26		95	%	80 - 120
			Total Iron (Fe)	2010/08/26		99	%	80 - 120
			Total Lead (Pb)	2010/08/26		94	%	80 - 120
			Total Lithium (Li)	2010/08/26		97	%	80 - 120
			Total Manganese (Mn)	2010/08/26		96	%	80 - 120
			Total Molybdenum (Mo)	2010/08/26		104	%	80 - 120
			Total Nickel (Ni)	2010/08/26		95	%	80 - 120
			Total Selenium (Se)	2010/08/26		102	%	80 - 120
			Total Silicon (Si)	2010/08/26		97	%	80 - 120
			Total Silver (Ag)	2010/08/26		94	%	80 - 120
			Total Strontium (Sr)	2010/08/26		NC	%	80 - 120
			Total Thallium (Tl)	2010/08/26		94	%	80 - 120
			Total Tin (Sn)	2010/08/26		101	%	80 - 120
			Total Titanium (Ti)	2010/08/26		97	%	80 - 120
			Total Uranium (U)	2010/08/26		92	%	80 - 120
			Total Vanadium (V)	2010/08/26		98	%	80 - 120
			Total Zinc (Zn)	2010/08/26		96	%	80 - 120
		Spiked Blank	Total Aluminum (Al)	2010/08/26		105	%	85 - 115
			Total Antimony (Sb)	2010/08/26		108	%	85 - 115
			Total Arsenic (As)	2010/08/26		102	%	85 - 115
			Total Barium (Ba)	2010/08/26		100	%	85 - 115
			Total Beryllium (Be)	2010/08/26		102	%	85 - 115
			Total Boron (B)	2010/08/26		101	%	85 - 115
			Total Cadmium (Cd)	2010/08/26		104	%	85 - 116
			Total Chromium (Cr)	2010/08/26		103	%	85 - 115
			Total Cobalt (Co)	2010/08/26		101	%	85 - 115
			Total Copper (Cu)	2010/08/26		101	%	85 - 115
			Total Iron (Fe)	2010/08/26		105	%	85 - 115
			Total Lead (Pb)	2010/08/26		97	%	85 - 115
			Total Lithium (Li)	2010/08/26		97	%	85 - 115
			Total Manganese (Mn)	2010/08/26		104	%	85 - 115
			Total Molybdenum (Mo)	2010/08/26		104	%	85 - 115
			Total Nickel (Ni)	2010/08/26		101	%	85 - 115
			Total Selenium (Se)	2010/08/26		108	%	85 - 115
			Total Silicon (Si)	2010/08/26		102	%	85 - 115
			Total Silver (Ag)	2010/08/26		97	%	85 - 115
			Total Strontium (Sr)	2010/08/26		103	%	85 - 115
			Total Thallium (Tl)	2010/08/26		96	%	85 - 115
			Total Tin (Sn)	2010/08/26		101	%	85 - 115
			Total Titanium (Ti)	2010/08/26		102	%	85 - 115
			Total Uranium (U)	2010/08/26		94	%	85 - 115
			Total Vanadium (V)	2010/08/26		102	%	85 - 115
			Total Zinc (Zn)	2010/08/26		103	%	85 - 115
		Method Blank	Total Aluminum (Al)	2010/08/26	<5		ug/L	
			Total Antimony (Sb)	2010/08/26	<0.5		ug/L	

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246467	VIV	Method Blank	Total Arsenic (As)	2010/08/26	<1		ug/L	
			Total Barium (Ba)	2010/08/26	<5		ug/L	
			Total Beryllium (Be)	2010/08/26	<0.5		ug/L	
			Total Boron (B)	2010/08/26	<10		ug/L	
			Total Cadmium (Cd)	2010/08/26	<0.1		ug/L	
			Total Chromium (Cr)	2010/08/26	<5		ug/L	
			Total Cobalt (Co)	2010/08/26	<0.5		ug/L	
			Total Copper (Cu)	2010/08/26	<1		ug/L	
			Total Iron (Fe)	2010/08/26	<100		ug/L	
			Total Lead (Pb)	2010/08/26	<0.5		ug/L	
			Total Lithium (Li)	2010/08/26	<5		ug/L	
			Total Manganese (Mn)	2010/08/26	<2		ug/L	
			Total Molybdenum (Mo)	2010/08/26	<1		ug/L	
			Total Nickel (Ni)	2010/08/26	<1		ug/L	
			Total Selenium (Se)	2010/08/26	<2		ug/L	
			Total Silicon (Si)	2010/08/26	<50		ug/L	
			Total Silver (Ag)	2010/08/26	<0.1		ug/L	
			Total Strontium (Sr)	2010/08/26	<1		ug/L	
			Total Thallium (Tl)	2010/08/26	<0.05		ug/L	
			Total Tin (Sn)	2010/08/26	<1		ug/L	
			Total Titanium (Ti)	2010/08/26	<5		ug/L	
			Total Uranium (U)	2010/08/26	<0.1		ug/L	
			Total Vanadium (V)	2010/08/26	<1		ug/L	
			Total Zinc (Zn)	2010/08/26	<5		ug/L	
		RPD	Total Aluminum (Al)	2010/08/26	1.5		%	25
			Total Antimony (Sb)	2010/08/26	NC		%	25
			Total Arsenic (As)	2010/08/26	NC		%	25
			Total Barium (Ba)	2010/08/26	3.6		%	25
			Total Beryllium (Be)	2010/08/26	NC		%	25
			Total Boron (B)	2010/08/26	6.6		%	25
			Total Cadmium (Cd)	2010/08/26	NC		%	25
			Total Chromium (Cr)	2010/08/26	NC		%	25
			Total Cobalt (Co)	2010/08/26	NC		%	25
			Total Copper (Cu)	2010/08/26	NC		%	25
			Total Lead (Pb)	2010/08/26	NC		%	25
			Total Manganese (Mn)	2010/08/26	4.5		%	25
			Total Molybdenum (Mo)	2010/08/26	2.1		%	25
			Total Nickel (Ni)	2010/08/26	5.4		%	25
			Total Selenium (Se)	2010/08/26	NC		%	25
			Total Silicon (Si)	2010/08/26	0.6		%	25
			Total Silver (Ag)	2010/08/26	NC		%	25
			Total Strontium (Sr)	2010/08/26	4.5		%	25
			Total Thallium (Tl)	2010/08/26	NC		%	25
			Total Tin (Sn)	2010/08/26	NC		%	25
			Total Titanium (Ti)	2010/08/26	NC		%	25
			Total Vanadium (V)	2010/08/26	NC		%	25
			Total Zinc (Zn)	2010/08/26	NC		%	25
2246499	BMO	Spiked Blank	Colour	2010/08/26		96	%	85 - 115
		Method Blank	Colour	2010/08/26	<2		TCU	
		RPD	Colour	2010/08/26	NC		%	25
2246523	VIV	Matrix Spike [GW5746-03]	Total Aluminum (Al)	2010/08/26		108	%	80 - 120
			Total Antimony (Sb)	2010/08/26		109	%	80 - 120
			Total Arsenic (As)	2010/08/26		100	%	80 - 120
			Total Barium (Ba)	2010/08/26		98	%	80 - 120

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246523	VIV	Matrix Spike [GW5746-03]	Total Beryllium (Be)	2010/08/26		102	%	80 - 120
			Total Boron (B)	2010/08/26		102	%	80 - 120
			Total Cadmium (Cd)	2010/08/26		103	%	80 - 120
			Total Calcium (Ca)	2010/08/26		100	%	80 - 120
			Total Chromium (Cr)	2010/08/26		100	%	80 - 120
			Total Cobalt (Co)	2010/08/26		97	%	80 - 120
			Total Copper (Cu)	2010/08/26		97	%	80 - 120
			Total Iron (Fe)	2010/08/26		101	%	80 - 120
			Total Lead (Pb)	2010/08/26		93	%	80 - 120
			Total Lithium (Li)	2010/08/26		97	%	80 - 120
			Total Magnesium (Mg)	2010/08/26		109	%	80 - 120
			Total Manganese (Mn)	2010/08/26		100	%	80 - 120
			Total Molybdenum (Mo)	2010/08/26		104	%	80 - 120
			Total Nickel (Ni)	2010/08/26		97	%	80 - 120
			Total Potassium (K)	2010/08/26		99	%	80 - 120
			Total Selenium (Se)	2010/08/26		103	%	80 - 120
			Total Silicon (Si)	2010/08/26		99	%	80 - 120
			Total Silver (Ag)	2010/08/26		95	%	80 - 120
			Total Sodium (Na)	2010/08/26		107	%	80 - 120
			Total Strontium (Sr)	2010/08/26		99	%	80 - 120
			Total Thallium (Tl)	2010/08/26		93	%	80 - 120
			Total Tin (Sn)	2010/08/26		102	%	80 - 120
			Total Titanium (Ti)	2010/08/26		100	%	80 - 120
			Total Uranium (U)	2010/08/26		91	%	80 - 120
			Total Vanadium (V)	2010/08/26		99	%	80 - 120
			Total Zinc (Zn)	2010/08/26		98	%	80 - 120
		Spiked Blank	Total Aluminum (Al)	2010/08/26		103	%	85 - 115
			Total Antimony (Sb)	2010/08/26		110	%	85 - 115
			Total Arsenic (As)	2010/08/26		99	%	85 - 115
			Total Barium (Ba)	2010/08/26		98	%	85 - 115
			Total Beryllium (Be)	2010/08/26		101	%	85 - 115
			Total Boron (B)	2010/08/26		99	%	85 - 115
			Total Cadmium (Cd)	2010/08/26		106	%	85 - 116
			Total Calcium (Ca)	2010/08/26		100	%	85 - 115
			Total Chromium (Cr)	2010/08/26		101	%	85 - 115
			Total Cobalt (Co)	2010/08/26		99	%	85 - 115
			Total Copper (Cu)	2010/08/26		98	%	85 - 115
			Total Iron (Fe)	2010/08/26		103	%	85 - 115
			Total Lead (Pb)	2010/08/26		94	%	85 - 115
			Total Lithium (Li)	2010/08/26		97	%	85 - 115
			Total Magnesium (Mg)	2010/08/26		108	%	85 - 115
			Total Manganese (Mn)	2010/08/26		102	%	85 - 115
			Total Molybdenum (Mo)	2010/08/26		104	%	85 - 115
			Total Nickel (Ni)	2010/08/26		99	%	85 - 115
			Total Potassium (K)	2010/08/26		101	%	85 - 115
			Total Selenium (Se)	2010/08/26		105	%	85 - 115
			Total Silicon (Si)	2010/08/26		101	%	85 - 115
			Total Silver (Ag)	2010/08/26		97	%	85 - 115
			Total Sodium (Na)	2010/08/26		107	%	85 - 115
			Total Strontium (Sr)	2010/08/26		100	%	85 - 115
			Total Thallium (Tl)	2010/08/26		94	%	85 - 115
			Total Tin (Sn)	2010/08/26		103	%	85 - 115
			Total Titanium (Ti)	2010/08/26		102	%	85 - 115
			Total Uranium (U)	2010/08/26		92	%	85 - 115

Stantec Consulting Ltd
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Client Project #: 1236000017
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Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: TB0B3041

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246523	VIV	Spiked Blank	Total Vanadium (V)	2010/08/26		101	%	85 - 115
			Total Zinc (Zn)	2010/08/26		99	%	85 - 115
		Method Blank	Total Aluminum (Al)	2010/08/26	9, RDL=5		ug/L	
			Total Antimony (Sb)	2010/08/26	<0.5		ug/L	
			Total Arsenic (As)	2010/08/26	<1		ug/L	
			Total Barium (Ba)	2010/08/26	<5		ug/L	
			Total Beryllium (Be)	2010/08/26	<0.5		ug/L	
			Total Boron (B)	2010/08/26	<10		ug/L	
			Total Cadmium (Cd)	2010/08/26	<0.1		ug/L	
			Total Calcium (Ca)	2010/08/26	<200		ug/L	
			Total Chromium (Cr)	2010/08/26	<5		ug/L	
			Total Cobalt (Co)	2010/08/26	<0.5		ug/L	
			Total Copper (Cu)	2010/08/26	<1		ug/L	
			Total Iron (Fe)	2010/08/26	<100		ug/L	
			Total Lead (Pb)	2010/08/26	<0.5		ug/L	
			Total Lithium (Li)	2010/08/26	<5		ug/L	
			Total Magnesium (Mg)	2010/08/26	<50		ug/L	
			Total Manganese (Mn)	2010/08/26	<2		ug/L	
			Total Molybdenum (Mo)	2010/08/26	<1		ug/L	
			Total Nickel (Ni)	2010/08/26	<1		ug/L	
			Total Potassium (K)	2010/08/26	<200		ug/L	
			Total Selenium (Se)	2010/08/26	<2		ug/L	
			Total Silicon (Si)	2010/08/26	<50		ug/L	
			Total Silver (Ag)	2010/08/26	<0.1		ug/L	
			Total Sodium (Na)	2010/08/26	<100		ug/L	
			Total Strontium (Sr)	2010/08/26	<1		ug/L	
			Total Thallium (Tl)	2010/08/26	<0.05		ug/L	
			Total Tin (Sn)	2010/08/26	<1		ug/L	
			Total Titanium (Ti)	2010/08/26	<5		ug/L	
			Total Uranium (U)	2010/08/26	<0.1		ug/L	
			Total Vanadium (V)	2010/08/26	<1		ug/L	
			Total Zinc (Zn)	2010/08/26	<5		ug/L	
		RPD [GW5746-03]	Total Aluminum (Al)	2010/08/26	1.1		%	25
			Total Antimony (Sb)	2010/08/26	NC		%	25
			Total Arsenic (As)	2010/08/26	NC		%	25
			Total Barium (Ba)	2010/08/26	NC		%	25
			Total Beryllium (Be)	2010/08/26	NC		%	25
			Total Boron (B)	2010/08/26	NC		%	25
			Total Cadmium (Cd)	2010/08/26	NC		%	25
			Total Calcium (Ca)	2010/08/26	0.7		%	25
			Total Chromium (Cr)	2010/08/26	NC		%	25
			Total Cobalt (Co)	2010/08/26	NC		%	25
			Total Copper (Cu)	2010/08/26	NC		%	25
			Total Iron (Fe)	2010/08/26	NC		%	25
			Total Lead (Pb)	2010/08/26	NC		%	25
			Total Magnesium (Mg)	2010/08/26	0.6		%	25
			Total Manganese (Mn)	2010/08/26	NC		%	25
			Total Molybdenum (Mo)	2010/08/26	NC		%	25
			Total Nickel (Ni)	2010/08/26	NC		%	25
			Total Potassium (K)	2010/08/26	1.2		%	25
			Total Selenium (Se)	2010/08/26	NC		%	25
			Total Silicon (Si)	2010/08/26	1.3		%	25
			Total Silver (Ag)	2010/08/26	NC		%	25
			Total Sodium (Na)	2010/08/26	1.3		%	25
			Total Strontium (Sr)	2010/08/26	0.9		%	25

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246523	VIV	RPD [GW5746-03]	Total Thallium (Tl)	2010/08/26	NC		%	25
			Total Titanium (Ti)	2010/08/26	NC		%	25
			Total Uranium (U)	2010/08/26	NC		%	25
			Total Vanadium (V)	2010/08/26	NC		%	25
			Total Zinc (Zn)	2010/08/26	NC		%	25
2246709	VRO	Matrix Spike	Total Phosphorus	2010/08/27		103	%	80 - 120
		QC Standard	Total Phosphorus	2010/08/27		106	%	85 - 115
		Spiked Blank	Total Phosphorus	2010/08/27		112	%	85 - 115
		Method Blank	Total Phosphorus	2010/08/27	<0.002		mg/L	
		RPD	Total Phosphorus	2010/08/27	11.8		%	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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

Maxxam Analytics

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6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

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INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	SAME	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200639
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:			
Address:	PO Box 1680 Yellowknife NT X1A2P3	Address:		Project #:	1236000017 Ground Water	CHAIN OF CUSTODY #: C#200639-04-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Project Name:	Clyde River		
Email:	Patricia.Coyne@stantec.com	Email:		Site #:			
				Sampled By:	M.N/M.K		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO ☐ Table 1 ☐ Residential/Parkland
- ☐ Table 2 ☐ Industrial/Commercial
- ☐ Reg. 558 ☐ Table 3 ☐ Medium/Fine — Municipality
- ☐ Table 6 ☐ Coarse
- Other (specify) CCME — Report Criteria on C of A ? ☐

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ (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 BTEX F1-F2	CCME TOTAL metals - FINAL	CCME DISSOLVED METALS	# of Bottles	Comments
1		MW14	Aug 16/10	8:17am	ground water			✓	✓		5	
2		MW1	Aug 16/10	8:45am	ground water			✓	✓		6	
3		MW13	Aug 6/10	10:12am	ground water		$	✓		✓	5	only enough sample for 1 amber + 3 vials
4		MW11	Aug 17/10	12:32pm	ground water			✓	✓	✓	4	no amber bottles only BTEX F1 vials
5		MW12	Aug 17/10	1:14pm	ground water			✓			3	(not enough water) no amber bottles - not enough sample
6												
7												
8												
9												
10												

19-Aug-10 14:05
RENATA SPENA
B0B3041
K /N OTT-001

REC'D IN OTTAWA

10/9/11

RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
Melissa Dobson	Aug 17/10	10:40pm	Melissa Brown	10/09/09	14:05	

Laboratory Use Only: Time Sensitive ☐ | Temperature (°C) on Receipt 9/8/8 | Custody Seal Intact on Cooler? ☐ 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

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:

Company Name: #24125 Stantec Consulting Ltd
Contact Name: Patricia Coyne
Address: PO Box 1680
Yellowknife NT X1A2P3
Phone: (867)920-2216 Fax: (867)920-2278
Email: Patricia.Coyne@stantec.com

REPORT INFORMATION (if differs from invoice):

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

PROJECT INFORMATION:

Quotation #: B05402
P.O. #:
Project #: 1236000017 Ground Water
Project Name: Clyderiver
Site #:
Sampled By: MN/MK

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 200639
CHAIN OF CUSTODY #: C#200639-05-01
PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:

☐ MISA ☐ Reg. 153/04 Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Residential/Parkland
☐ Table 2 ☐ Industrial/Commercial
☐ Reg. 558 ☐ Table 3 ☐ Medium/Fine
☐ Table 6 ☐ Coarse
Municipality:
Other (specify): CCME
Report Criteria on C of A ?

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required: ☐
Rush Confirmation Number: (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Basic Landfill Package 1	CCME BTEX F1-F2	CCME Total Metals - ANAL	RCAP including reactive silica, color	PAHs	CCME Dissolved Metals - Anal	F2	BTEX-F1			# of Bottles	Comments
1		WASTE-4	Aug 15/10	13:02	soil			✓										4	REC'D IN OTTAWA
2		CW-5	Aug 17/10	11:12	surface water				✓	✓	✓							10	
3		SW-DUMP	Aug 17/10	11:35	surface water				✓	✓								6	
4		MW7	Aug 16/10	9:14	ground water		✓		✓				✓					6	
5		MW5	Aug 16/10	9:35	ground water				✓									3	only 3 BTEX vials - no amber bottles
6		MW3	Aug 16/10	9:42	ground water				✓									3	only 3 BTEX vials - no amber bottles
7		TBLK-M-10-476			water				✓	✓								1	
8		TBLK-F24W-10-467			water									✓				2	
9		TBLK-F1BW-10-464			water										✓			3	
10		FB	Aug 17/10	5:45pm	water				✓									5	10/9/11

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
Melissa Nicholson	Aug 19/10		Melissa Drain	10/08/19	14:05	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
☐	9/8/8	☐ 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

Your C.O.C. #: B0B3041

Attention: Renata Spena
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/09/13
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B074028
Received: 2010/08/20, 11:16

Sample Matrix: Leachate
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX in Leachates by P&T GC/MS	1	2010/08/23	2010/08/25	EENVSOP-00003	EPA 1311/8260C
ICPMS Metals on TCLP Leachate	1	2010/08/25	2010/08/26	AB SOP-00043	EPA 200.8

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Flash Point	1	N/A	2010/08/24	EENVSOP-00079	ASTM D3828-93
Free Liquid (Paint filter)	1	N/A	2010/08/24	AB SOP-00047	EPA SW846/9095B
pH (1:1 extract, solid waste)	1	2010/08/26	2010/08/26	AB SOP-00006	SSMA 16.3

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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 #: B074028
Report Date: 2010/09/13

BASIC CLASS II LANDFILL PACKAGE (LEACHATE)

Maxxam ID		W35319	W35319		
Sampling Date		2010/08/15	2010/08/15		
COC Number		B0B3041	B0B3041		
	Units	**GW5745-01R \ WASTE-4**	**GW5745-01R \ WASTE-4 Lab-Dup**	**RDL**	**QC Batch**
Elements					
Leachable Antimony (Sb)	mg/L	<1	N/A	1	4211210
Leachable Arsenic (As)	mg/L	<0.5	N/A	0.5	4211210
Leachable Barium (Ba)	mg/L	<1	N/A	1	4211210
Leachable Beryllium (Be)	mg/L	<0.5	N/A	0.5	4211210
Leachable Boron (B)	mg/L	<1	N/A	1	4211210
Leachable Cadmium (Cd)	mg/L	<0.1	N/A	0.1	4211210
Leachable Chromium (Cr)	mg/L	<0.5	N/A	0.5	4211210
Leachable Cobalt (Co)	mg/L	<1	N/A	1	4211210
Leachable Copper (Cu)	mg/L	1	N/A	1	4211210
Leachable Iron (Fe)	mg/L	<1	N/A	1	4211210
Leachable Lead (Pb)	mg/L	<0.5	N/A	0.5	4211210
Leachable Mercury (Hg)	mg/L	<0.02	N/A	0.02	4211210
Leachable Nickel (Ni)	mg/L	<0.5	N/A	0.5	4211210
Leachable Selenium (Se)	mg/L	<0.1	N/A	0.1	4211210
Leachable Silver (Ag)	mg/L	<0.5	N/A	0.5	4211210
Leachable Thallium (Tl)	mg/L	<0.5	N/A	0.5	4211210
Leachable Uranium (U)	mg/L	<0.2	N/A	0.2	4211210
Leachable Vanadium (V)	mg/L	<1	N/A	1	4211210
Leachable Zinc (Zn)	mg/L	1	N/A	1	4211210
Leachable Zirconium (Zr)	mg/L	<1	N/A	1	4211210
Volatiles					
Leachable (ZH) Benzene	ug/L	<10	<10	10	4204294
Leachable (ZH) Toluene	ug/L	<10	<10	10	4204294
Leachable (ZH) Ethylbenzene	ug/L	<10	<10	10	4204294
Leachable (ZH) o-Xylene	ug/L	<10	<10	10	4204294
Leachable (ZH) m & p-Xylene	ug/L	<20	<20	20	4204294
Leachable (ZH) Xylenes (Total)	ug/L	<20	<20	20	4204294
Surrogate Recovery (%)					
Leachable (ZH) 4-BROMOFLUOROBENZENE (sur.)	%	96	98	N/A	4204294
Leachable (ZH) D4-1,2-DICHLOROETHANE (sur.)	%	95	93	N/A	4204294
Leachable (ZH) D8-TOLUENE (sur.)	%	94	93	N/A	4204294

N/A = Not Applicable
RDL = Reportable Detection Limit

MAXXAM ANALYTICS INC.

Maxxam Job #: B074028
Report Date: 2010/09/13

BASIC CLASS II LANDFILL PACKAGE (SOIL)

Maxxam ID		W35319	
Sampling Date		2010/08/15	
COC Number		B0B3041	
	Units	**GW5745-01R \ WASTE-4**	**QC Batch**
Soluble Parameters			
Soluble (1:1) pH	N/A	6.33	4212346
Physical Properties			
Free Liquid	N/A	PASS	4204352

MAXXAM ANALYTICS INC.

Maxxam Job #: B074028
Report Date: 2010/09/13

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W35319		
Sampling Date		2010/08/15		
COC Number		B0B3041		
	Units	**GW5745-01R \ WASTE-4**	**RDL**	**QC Batch**
FOR OIL ANALYSES				
Flash point	°C	>61 (1)	23	4203933

RDL = Reportable Detection Limit
(1) Headspace in sample jar was noted at the time of analysis

MAXXAM ANALYTICS INC.

Maxxam Job #: B074028
Report Date: 2010/09/13

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB074028

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4203933	JM9	RPD	Flash point	2010/08/24	NC		%	25
4204294	HW4	Matrix Spike						
		[W35368-00]	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/25		100	%	60 - 140
			Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/25		98	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/25		92	%	60 - 140
			Leachable (ZH) Benzene	2010/08/25		98	%	70 - 130
			Leachable (ZH) Toluene	2010/08/25		80	%	70 - 130
			Leachable (ZH) Ethylbenzene	2010/08/25		81	%	70 - 130
			Leachable (ZH) o-Xylene	2010/08/25		85	%	70 - 130
			Leachable (ZH) m & p-Xylene	2010/08/25		79	%	70 - 130
		Spiked Blank	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/25		98	%	60 - 140
			Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/25		89	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/25		96	%	60 - 140
			Leachable (ZH) Benzene	2010/08/25		98	%	70 - 130
			Leachable (ZH) Toluene	2010/08/25		81	%	70 - 130
			Leachable (ZH) Ethylbenzene	2010/08/25		85	%	70 - 130
			Leachable (ZH) o-Xylene	2010/08/25		89	%	70 - 130
			Leachable (ZH) m & p-Xylene	2010/08/25		84	%	70 - 130
		Method Blank	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/25		100	%	60 - 140
			Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/25		94	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/25		93	%	60 - 140
			Leachable (ZH) Benzene	2010/08/25	<10		ug/L	
			Leachable (ZH) Toluene	2010/08/25	<10		ug/L	
			Leachable (ZH) Ethylbenzene	2010/08/25	<10		ug/L	
			Leachable (ZH) o-Xylene	2010/08/25	<10		ug/L	
			Leachable (ZH) m & p-Xylene	2010/08/25	<20		ug/L	
			Leachable (ZH) Xylenes (Total)	2010/08/25	<20		ug/L	
		RPD [W35319-00]	Leachable (ZH) Benzene	2010/08/25	NC		%	50
			Leachable (ZH) Toluene	2010/08/25	NC		%	50
			Leachable (ZH) Ethylbenzene	2010/08/25	NC		%	50
			Leachable (ZH) o-Xylene	2010/08/25	NC		%	50
			Leachable (ZH) m & p-Xylene	2010/08/25	NC		%	50
			Leachable (ZH) Xylenes (Total)	2010/08/25	NC		%	50
4204352	JM9	RPD	Free Liquid	2010/08/24	NC		%	25
4211210	SG8	Matrix Spike						
		[W35385-00]	Leachable Antimony (Sb)	2010/08/26		99	%	75 - 125
			Leachable Arsenic (As)	2010/08/26		100	%	75 - 125
			Leachable Barium (Ba)	2010/08/26		NC	%	75 - 125
			Leachable Beryllium (Be)	2010/08/26		97	%	75 - 125
			Leachable Boron (B)	2010/08/26		97	%	75 - 125
			Leachable Cadmium (Cd)	2010/08/26		100	%	75 - 125
			Leachable Chromium (Cr)	2010/08/26		96	%	75 - 125
			Leachable Cobalt (Co)	2010/08/26		96	%	75 - 125
			Leachable Copper (Cu)	2010/08/26		NC	%	75 - 125
			Leachable Iron (Fe)	2010/08/26		NC	%	75 - 125
			Leachable Lead (Pb)	2010/08/26		NC	%	75 - 125
			Leachable Nickel (Ni)	2010/08/26		90	%	75 - 125
			Leachable Selenium (Se)	2010/08/26		97	%	75 - 125
			Leachable Silver (Ag)	2010/08/26		96	%	75 - 125
			Leachable Thallium (Tl)	2010/08/26		95	%	75 - 125
			Leachable Uranium (U)	2010/08/26		96	%	75 - 125
			Leachable Vanadium (V)	2010/08/26		104	%	75 - 125
			Leachable Zinc (Zn)	2010/08/26		NC	%	75 - 125
			Leachable Zirconium (Zr)	2010/08/26		114	%	75 - 125
		Spiked Blank	Leachable Antimony (Sb)	2010/08/26		89	%	80 - 120

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB074028

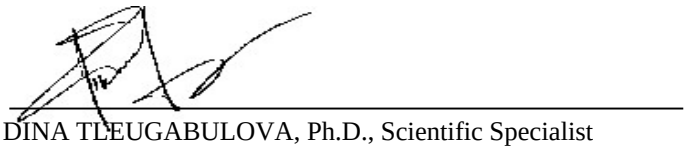
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4211210	SG8	Spiked Blank	Leachable Arsenic (As)	2010/08/26		97	%	80 - 120
			Leachable Barium (Ba)	2010/08/26		100	%	80 - 120
			Leachable Beryllium (Be)	2010/08/26		101	%	80 - 120
			Leachable Boron (B)	2010/08/26		100	%	80 - 120
			Leachable Cadmium (Cd)	2010/08/26		101	%	80 - 120
			Leachable Chromium (Cr)	2010/08/26		96	%	80 - 120
			Leachable Cobalt (Co)	2010/08/26		98	%	80 - 120
			Leachable Copper (Cu)	2010/08/26		95	%	80 - 120
			Leachable Iron (Fe)	2010/08/26		98	%	80 - 120
			Leachable Lead (Pb)	2010/08/26		98	%	80 - 120
			Leachable Nickel (Ni)	2010/08/26		95	%	80 - 120
			Leachable Selenium (Se)	2010/08/26		95	%	80 - 120
			Leachable Silver (Ag)	2010/08/26		100	%	80 - 120
			Leachable Thallium (Tl)	2010/08/26		99	%	80 - 120
			Leachable Uranium (U)	2010/08/26		96	%	80 - 120
			Leachable Vanadium (V)	2010/08/26		99	%	80 - 120
			Leachable Zinc (Zn)	2010/08/26		97	%	80 - 120
			Leachable Zirconium (Zr)	2010/08/26		103	%	80 - 120
		Method Blank	Leachable Antimony (Sb)	2010/08/26	<1		mg/L	
			Leachable Arsenic (As)	2010/08/26	<0.5		mg/L	
			Leachable Barium (Ba)	2010/08/26	<1		mg/L	
			Leachable Beryllium (Be)	2010/08/26	<0.5		mg/L	
			Leachable Boron (B)	2010/08/26	<1		mg/L	
			Leachable Cadmium (Cd)	2010/08/26	<0.1		mg/L	
			Leachable Chromium (Cr)	2010/08/26	<0.5		mg/L	
			Leachable Cobalt (Co)	2010/08/26	<1		mg/L	
			Leachable Copper (Cu)	2010/08/26	<1		mg/L	
			Leachable Iron (Fe)	2010/08/26	<1		mg/L	
			Leachable Lead (Pb)	2010/08/26	<0.5		mg/L	
			Leachable Mercury (Hg)	2010/08/26	<0.02		mg/L	
			Leachable Nickel (Ni)	2010/08/26	<0.5		mg/L	
			Leachable Selenium (Se)	2010/08/26	<0.1		mg/L	
			Leachable Silver (Ag)	2010/08/26	<0.5		mg/L	
			Leachable Thallium (Tl)	2010/08/26	<0.5		mg/L	
			Leachable Uranium (U)	2010/08/26	<0.2		mg/L	
			Leachable Vanadium (V)	2010/08/26	<1		mg/L	
			Leachable Zinc (Zn)	2010/08/26	<1		mg/L	
			Leachable Zirconium (Zr)	2010/08/26	<1		mg/L	
4212346	NW2	QC Standard	Soluble (1:1) pH	2010/08/26		99	%	97 - 103
		Spiked Blank	Soluble (1:1) pH	2010/08/26		100	%	99 - 101

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 #: B074028

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



DINA TLEUGABULOVA, Ph.D., Scientific Specialist

HUA WO, Organics Supervisor

==========

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

Your P.O. #: 16300NR
Your Project #: 1236000017
Site: CLYDE RIVER
Your C.O.C. #: 20063806, 200638-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B3907
Received: 2010/08/19, 14:19

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	7	2010/08/25	2010/08/26	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (1)	7	N/A	2010/08/26	BRL SOP-00106	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	1	2010/08/21	2010/08/24	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	6	2010/08/21	2010/08/25	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	2010/08/23	2010/08/25	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	7	2010/08/25	2010/08/25	CAM SOP-00447	EPA 6020
Moisture	2	N/A	2010/08/25	CAM SOP-00445	McKeague 2nd ed 1978
Moisture	6	N/A	2010/08/26	CAM SOP-00445	McKeague 2nd ed 1978

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2010/08/24	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	1	2010/08/23	2010/08/24	CAM SOP-00316	CCME Hydrocarbons

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

../2

Your P.O. #: 16300NR
Your Project #: 1236000017
Site: CLYDE RIVER
Your C.O.C. #: 20063806, 200638-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/08/27

CERTIFICATE OF ANALYSIS

-2-

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GW9676	GW9676	GW9677		GW9678		
Sampling Date		2010/08/15 13:20	2010/08/15 13:20	2010/08/15 09:45		2010/08/15 09:15		
COC Number		200638-0	200638-0	200638-0		200638-0		
	Units	**TP 3.5-G-H-1**	**TP 3.5-G-H-1 Lab-Dup**	**TP 2-DE-3**	**QC Batch**	**TP DUMP 5-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2			2245021	<0.2	0.2	2245021
Moisture	%	3	3	8	2246341	15	1	2246075

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GW9679	GW9680		GW9681	GW9681		
Sampling Date		2010/08/15 15:05	2010/08/15 14:53		2010/08/15 15:25	2010/08/15 15:25		
COC Number		200638-0	200638-0		200638-0	200638-0		
	Units	**TP NBDUMP 2-1**	**TPNBDUMP 4-2**	**QC Batch**	**TPNBDUMP 3-2**	**TPNBDUMP 3-2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	0.2	0.5	2245021	<0.2	<0.2	0.2	2245021
Moisture	%	11	13	2246341	13		1	2246023

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GW9682	GW9683		
Sampling Date		2010/08/15 14:20	2010/08/15 14:00		
COC Number		200638-0	200638-0		
	Units	**TPNBDUMP 1-2**	**SS 10-1**	**RDL**	**QC Batch**
Inorganics					
Chromium (VI)	ug/g	<0.2	0.5	0.2	2245021
Moisture	%	10	16	1	2246341

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GW9676	GW9678	GW9679	GW9680		
Sampling Date		2010/08/15 13:20	2010/08/15 09:15	2010/08/15 15:05	2010/08/15 14:53		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP 3.5-G-H-1**	**TP DUMP 5-2**	**TP NBDUMP 2-1**	**TPNBDUMP 4-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.07	0.23	0.14	0.26	0.05	2245130
Acid Extractable Aluminum (Al)	ug/g	5500	9000	6200	10000	50	2245272
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	<0.2	<0.2	0.2	2245272
Acid Extractable Arsenic (As)	ug/g	<1	1	<1	<1	1	2245272
Acid Extractable Barium (Ba)	ug/g	24	45	29	40	0.5	2245272
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	0.2	0.2	2245272
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2245272
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2245272
Acid Extractable Chromium (Cr)	ug/g	13	15	11	15	1	2245272
Acid Extractable Cobalt (Co)	ug/g	4.4	5.3	3.8	6.1	0.1	2245272
Acid Extractable Copper (Cu)	ug/g	3.2	10	8.1	11	0.5	2245272
Acid Extractable Iron (Fe)	ug/g	17000	18000	14000	17000	50	2245272
Acid Extractable Lead (Pb)	ug/g	4	6	4	6	1	2245272
Acid Extractable Manganese (Mn)	ug/g	290	180	130	190	1	2245272
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2245272
Acid Extractable Nickel (Ni)	ug/g	6.0	7.9	6.5	8.4	0.5	2245272
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2245272
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2245272
Acid Extractable Strontium (Sr)	ug/g	4	4	5	5	1	2245272
Acid Extractable Thallium (Tl)	ug/g	0.15	0.26	0.19	0.28	0.05	2245272
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2245272
Acid Extractable Uranium (U)	ug/g	0.52	1.0	0.63	1.1	0.05	2245272
Acid Extractable Vanadium (V)	ug/g	31	33	26	33	5	2245272
Acid Extractable Zinc (Zn)	ug/g	32	34	25	33	5	2245272
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	<0.05	0.05	2245272

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GW9681	GW9682	GW9683		
Sampling Date		2010/08/15 15:25	2010/08/15 14:20	2010/08/15 14:00		
COC Number		200638-0	200638-0	200638-0		
	Units	**TPNBDUMP 3-2**	**TPNBDUMP 1-2**	**SS 10-1**	**RDL**	**QC Batch**
Metals						
Hot Water Ext. Boron (B)	ug/g	0.62	<0.05	0.36	0.05	2245130
Acid Extractable Aluminum (Al)	ug/g	6200	2300	8000	50	2245272
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	1.9	0.2	2245272
Acid Extractable Arsenic (As)	ug/g	<1	<1	1	1	2245272
Acid Extractable Barium (Ba)	ug/g	30	13	40	0.5	2245272
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	0.2	2245272
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	1	2245272
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	0.1	2245272
Acid Extractable Chromium (Cr)	ug/g	12	6	16	1	2245272
Acid Extractable Cobalt (Co)	ug/g	4.6	1.9	5.0	0.1	2245272
Acid Extractable Copper (Cu)	ug/g	7.5	1.8	18	0.5	2245272
Acid Extractable Iron (Fe)	ug/g	15000	8400	16000	50	2245272
Acid Extractable Lead (Pb)	ug/g	4	3	29	1	2245272
Acid Extractable Manganese (Mn)	ug/g	170	67	160	1	2245272
Acid Extractable Molybdenum (Mo)	ug/g	0.6	<0.5	<0.5	0.5	2245272
Acid Extractable Nickel (Ni)	ug/g	7.2	2.8	8.2	0.5	2245272
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	0.5	2245272
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	0.2	2245272
Acid Extractable Strontium (Sr)	ug/g	8	3	7	1	2245272
Acid Extractable Thallium (Tl)	ug/g	0.21	0.09	0.24	0.05	2245272
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	5	2245272
Acid Extractable Uranium (U)	ug/g	0.82	0.44	1.1	0.05	2245272
Acid Extractable Vanadium (V)	ug/g	27	16	29	5	2245272
Acid Extractable Zinc (Zn)	ug/g	28	12	200	5	2245272
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	<0.05	0.05	2245272

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW9676	GW9677	GW9679	GW9680		
Sampling Date		2010/08/15 13:20	2010/08/15 09:45	2010/08/15 15:05	2010/08/15 14:53		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP 3.5-G-H-1**	**TP 2-DE-3**	**TP NBDUMP 2-1**	**TPNBDUMP 4-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2243865
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2243865
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2243865
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2243865
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2243865
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2243865
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2243865
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2243865
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2243395
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2243395
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2243395
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2243395
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	104	103	99	99		2243865
4-Bromofluorobenzene	%	102	102	102	101		2243865
D10-Ethylbenzene	%	101	100	99	97		2243865
D4-1,2-Dichloroethane	%	94	94	94	94		2243865
o-Terphenyl	%	104	111	108	108		2243395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW9681	GW9682		GW9683		
Sampling Date		2010/08/15 15:25	2010/08/15 14:20		2010/08/15 14:00		
COC Number		200638-0	200638-0		200638-0		
	Units	**TPNBDUMP 3-2**	**TPNBDUMP 1-2**	**RDL**	**SS 10-1**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	0.005	<0.05	0.05	2243865
Toluene	ug/g	<0.02	<0.02	0.02	<0.2	0.2	2243865
Ethylbenzene	ug/g	<0.01	<0.01	0.01	<0.1	0.1	2243865
o-Xylene	ug/g	<0.02	<0.02	0.02	<0.2	0.2	2243865
p+m-Xylene	ug/g	<0.04	<0.04	0.04	<0.4	0.4	2243865
Total Xylenes	ug/g	<0.04	<0.04	0.04	<0.4	0.4	2243865
F1 (C6-C10)	ug/g	<10	<10	10	260	100	2243865
F1 (C6-C10) - BTEX	ug/g	<10	<10	10	260	100	2243865
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	10	10000	10	2243395
F3 (C16-C34 Hydrocarbons)	ug/g	<10	<10	10	4000	10	2243395
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	10	140	10	2243395
Reached Baseline at C50	ug/g	Yes	Yes		Yes		2243395
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	104		103		2243865
4-Bromofluorobenzene	%	102	102		106		2243865
D10-Ethylbenzene	%	100	99		104		2243865
D4-1,2-Dichloroethane	%	95	94		94		2243865
o-Terphenyl	%	111	107		122		2243395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GW9684	GW9684		
Sampling Date		2010/08/15 14:05	2010/08/15 14:05		
COC Number		200638-0	200638-0		
	Units	**WS 10-1**	**WS 10-1 Lab-Dup**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons					
Benzene	ug/L	<0.2	<0.2	0.2	2243886
Toluene	ug/L	2.0	1.9	0.2	2243886
Ethylbenzene	ug/L	0.9	0.9	0.2	2243886
o-Xylene	ug/L	5.2	5.2	0.2	2243886
p+m-Xylene	ug/L	7.7	7.3	0.4	2243886
Total Xylenes	ug/L	13	12	0.4	2243886
F1 (C6-C10)	ug/L	190	210	100	2243886
F1 (C6-C10) - BTEX	ug/L	170	190	100	2243886
F2-F4 Hydrocarbons					
F2 (C10-C16 Hydrocarbons)	ug/L	740		100	2243705
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	100	97		2243886
4-Bromofluorobenzene	%	106	107		2243886
D10-Ethylbenzene	%	107	99		2243886
D4-1,2-Dichloroethane	%	98	99		2243886
o-Terphenyl	%	107			2243705

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B3907
Report Date: 2010/08/27

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER
Your P.O. #: 16300NR

GENERAL COMMENTS

Sample GW9683-01: F1/BTEX Analysis: Due to high concentration of target analytes, sample required dilution. Reporting limits were adjusted accordingly.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report

Maxxam Job Number: MB0B3907

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2243395	DPO	Matrix Spike	o-Terphenyl	2010/08/23		124	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		NC	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/23		NC	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/23		NC	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/23		115	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		95	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/23		95	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/23		95	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/24		107	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/24	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/24	<10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/25	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/08/25	12.1		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/25	NC		%	50
2243705	NCI	Matrix Spike	o-Terphenyl	2010/08/24		108	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24		96	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/24		108	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24		94	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/24		105	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24	<100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/08/24	NC		%	50
2243865	LRA	Matrix Spike	1,4-Difluorobenzene	2010/08/25		100	%	60 - 140
			4-Bromofluorobenzene	2010/08/25		102	%	60 - 140
			D10-Ethylbenzene	2010/08/25		99	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/25		93	%	60 - 140
			Benzene	2010/08/25		83	%	60 - 140
			Toluene	2010/08/25		92	%	60 - 140
			Ethylbenzene	2010/08/25		94	%	60 - 140
			o-Xylene	2010/08/25		95	%	60 - 140
			p+m-Xylene	2010/08/25		95	%	60 - 140
			F1 (C6-C10)	2010/08/25		89	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/24		104	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		102	%	60 - 140
			D10-Ethylbenzene	2010/08/24		94	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		94	%	60 - 140
			Benzene	2010/08/24		78	%	60 - 140
			Toluene	2010/08/24		84	%	60 - 140
			Ethylbenzene	2010/08/24		88	%	60 - 140
			o-Xylene	2010/08/24		91	%	60 - 140
			p+m-Xylene	2010/08/24		90	%	60 - 140
			F1 (C6-C10)	2010/08/24		98	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/24		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		102	%	60 - 140
			D10-Ethylbenzene	2010/08/24		96	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		93	%	60 - 140
			Benzene	2010/08/24	<0.005		ug/g	
			Toluene	2010/08/24	<0.02		ug/g	
			Ethylbenzene	2010/08/24	<0.01		ug/g	
			o-Xylene	2010/08/24	<0.02		ug/g	
			p+m-Xylene	2010/08/24	<0.04		ug/g	
			Total Xylenes	2010/08/24	<0.04		ug/g	
			F1 (C6-C10)	2010/08/24	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/24	<10		ug/g	
		RPD	Benzene	2010/08/25	NC		%	50

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B3907

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2243865 LRA	RPD	Toluene	2010/08/25	NC		%	50
		Ethylbenzene	2010/08/25	NC		%	50
		o-Xylene	2010/08/25	NC		%	50
		p+m-Xylene	2010/08/25	NC		%	50
		Total Xylenes	2010/08/25	NC		%	50
		F1 (C6-C10)	2010/08/25	NC		%	50
		F1 (C6-C10) - BTEX	2010/08/25	NC		%	50
2243886 ABD	Matrix Spike						
	[GW9684-07]	1,4-Difluorobenzene	2010/08/24		98	%	70 - 130
		4-Bromofluorobenzene	2010/08/24		106	%	70 - 130
		D10-Ethylbenzene	2010/08/24		100	%	70 - 130
		D4-1,2-Dichloroethane	2010/08/24		92	%	70 - 130
		Benzene	2010/08/24		90	%	70 - 130
		Toluene	2010/08/24		97	%	70 - 130
		Ethylbenzene	2010/08/24		100	%	70 - 130
		o-Xylene	2010/08/24		101	%	70 - 130
		p+m-Xylene	2010/08/24		94	%	70 - 130
		F1 (C6-C10)	2010/08/24		107	%	70 - 130
	Spiked Blank	1,4-Difluorobenzene	2010/08/24		98	%	70 - 130
		4-Bromofluorobenzene	2010/08/24		104	%	70 - 130
		D10-Ethylbenzene	2010/08/24		100	%	70 - 130
		D4-1,2-Dichloroethane	2010/08/24		96	%	70 - 130
		Benzene	2010/08/24		91	%	70 - 130
		Toluene	2010/08/24		99	%	70 - 130
		Ethylbenzene	2010/08/24		104	%	70 - 130
		o-Xylene	2010/08/24		105	%	70 - 130
		p+m-Xylene	2010/08/24		97	%	70 - 130
		F1 (C6-C10)	2010/08/24		105	%	70 - 130
	Method Blank	1,4-Difluorobenzene	2010/08/24		99	%	70 - 130
		4-Bromofluorobenzene	2010/08/24		101	%	70 - 130
		D10-Ethylbenzene	2010/08/24		98	%	70 - 130
		D4-1,2-Dichloroethane	2010/08/24		98	%	70 - 130
		Benzene	2010/08/24	<0.2		ug/L	
		Toluene	2010/08/24	<0.2		ug/L	
		Ethylbenzene	2010/08/24	<0.2		ug/L	
		o-Xylene	2010/08/24	<0.2		ug/L	
		p+m-Xylene	2010/08/24	<0.4		ug/L	
		Total Xylenes	2010/08/24	<0.4		ug/L	
		F1 (C6-C10)	2010/08/24	<100		ug/L	
		F1 (C6-C10) - BTEX	2010/08/24	<100		ug/L	
	RPD [GW9684-07]	Benzene	2010/08/24	NC		%	40
		Toluene	2010/08/24	6.6		%	40
		Ethylbenzene	2010/08/24	NC		%	40
		o-Xylene	2010/08/24	1.1		%	40
		p+m-Xylene	2010/08/24	4.5		%	40
		Total Xylenes	2010/08/24	3.1		%	40
		F1 (C6-C10)	2010/08/24	NC		%	40
		F1 (C6-C10) - BTEX	2010/08/24	NC		%	40
2245021 KTH	Matrix Spike						
	[GW9681-03]	Chromium (VI)	2010/08/26		74 (1)	%	75 - 125
	QC Standard	Chromium (VI)	2010/08/26		101	%	75 - 125
	Spiked Blank	Chromium (VI)	2010/08/26		98	%	80 - 120
	Method Blank	Chromium (VI)	2010/08/26	<0.2		ug/g	
	RPD [GW9681-03]	Chromium (VI)	2010/08/26	NC		%	25
2245130 AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/25		104	%	85 - 115

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

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B3907

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2245130	AFZ	Method Blank	Hot Water Ext. Boron (B)	2010/08/25	<0.05		ug/g	
2245272	KCO	Matrix Spike	Acid Extractable Aluminum (Al)	2010/08/25		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/25		97	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/25		91	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/25		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/25		90	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/25		94	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/25		94	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/25		99	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/25		88	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/25		87	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/25		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/25		NC	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/25		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/25		98	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/25		90	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/25		92	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/25		94	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/25		NC	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/25		91	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/25		100	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/25		95	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/25		93	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/25		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/25		105	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/25		102	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/25		100	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/25		95	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/25		98	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/25		94	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/25		101	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/25		97	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/25		96	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/25		95	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/25		95	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/25		106	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/25		98	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/25		97	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/25		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/25		97	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/25		96	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/25		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/25		96	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/25		96	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/25		99	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/25		100	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/25		95	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/25		99	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/25		100	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/25	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/25	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/25	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/25	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/25	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/25	<1		ug/g	

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B3907

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2245272	KCO	Method Blank	Acid Extractable Cadmium (Cd)	2010/08/25	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/25	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/25	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/25	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/25	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/25	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/25	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/25	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/25	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/25	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/25	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/25	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/25	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/25	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/25	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/25	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/25	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/25	<0.05		ug/g	
		RPD	Acid Extractable Antimony (Sb)	2010/08/25	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/25	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/25	21.2		%	35
			Acid Extractable Beryllium (Be)	2010/08/25	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/25	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/25	5.0		%	35
			Acid Extractable Cobalt (Co)	2010/08/25	5.8		%	35
			Acid Extractable Copper (Cu)	2010/08/25	9.6		%	35
			Acid Extractable Lead (Pb)	2010/08/25	4.5		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/25	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/25	2.0		%	35
			Acid Extractable Selenium (Se)	2010/08/25	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/25	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/25	NC		%	35
			Acid Extractable Uranium (U)	2010/08/25	4.0		%	25
			Acid Extractable Vanadium (V)	2010/08/25	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/25	4.1		%	35
			Acid Extractable Mercury (Hg)	2010/08/25	NC		%	35
2246023	DEE	RPD	Moisture	2010/08/25	6.5		%	20
2246075	DEE	RPD	Moisture	2010/08/25	0.9		%	20
2246341	MYG	RPD [GW9676-03]	Moisture	2010/08/26	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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 was below the lower control limit. This may be due in part to the reducing environment of the sample

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

19-Aug-10 14:19
RENATA SPENA
B0B3907
MHO ENV-975

Maxxam Analytics

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUST

Page 1 of 2

IMMEDIATE TEST

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	1236000017
Address:	PO Box 1680	Address:		Project #:	1236000017 ~~Surface water~~
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III ESA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:	
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	PC/MR/MN/RM

Lab Use Only: BOTTLE ORDER #: 200638

CHAIN OF CUSTODY #: C#200638-06-01

PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify) CCME CWS — Report Criteria on C of A? ☐

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Basic Landfill II Landfill Package	CCME BTEX/F1-F4	CCME/ATI Metals	PAHs	CCME/ATI BTEX/F1-F2	# of Bottles	Comments
1		TP3.5-GTH-1	Aug 15/10	1320	soil				✓	✓	✓		4	
2		TP2-DE-3	Aug 15/10	0945	soil				✓				3	
3		TPDUMP5-2	Aug 15/10	0915	soil					✓			1	
4		TPNBDUMP2-1	Aug 15/10	1505	soil				✓	✓			3	
5		TPNBDUMP4-2	Aug 15/10	1453	soil				✓	✓			3	
6		TPNBDUMP3-2	Aug 15/10	1525	soil				✓	✓			3	
7		TPNBDUMP1-2	Aug 15/10	1420	soil				✓	✓			3	
8		SS10-1	Aug 15/10	1400	soil				✓	✓	✓		4	
9		WS10-1	Aug 15/10	1405	water							✓	1	
10		Waste-1	Aug 15/10	~~1500~~ 1530	soil			✓					4	13,14,16 10,11,12

REC'D IN OTTAWA

*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 Intact on Cooler?
Patricia Coyne	10/08/15	630	Jessica	10/08/19	14:19		☐	6/10	☐ 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

LOGIN RENATA 2010/08/20 9:40 tmp: 8/10/10°C 10/10/10°C

Maxxam Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

CHAIN OF CUSTODY RECORD

IMMEDIATE TEST

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:		Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200638
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680 Yellowknife NT X1A2P3	Address:	same	Project #:	1236000017 ~~Surface water~~	CHAIN OF CUSTODY #: C#200638-04-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Project Name:	Clyde River Phase III ESA		
Email:	Patricia.Coyne@stantec.com	Email:		Site #:			
				Sampled By:	PC/MN/MR/RM		

REGULATORY CRITERIA:

- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify): CCME CWS — Report Criteria on C of A? ☐
- **Reg. 153** ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	Basic Landfill II Landfill Package	CCME BTEX/F1-F4	PAH's	Extract and Hold for PAH's	pH	Hold for CCME Metals				# of Bottles	Comments
1		Waste-2	Aug 15/10	1530	soil			✓									4	
2		Waste-3	Aug 15/10	1600	soil			✓									6	
3		SE Beach Dump-1	Aug 15/10	1500	soil					✓							2	
4		SE Beach Dump-2	Aug 15/10	1505	soil					✓							2	
5		SE Beach Dump-3	Aug 15/10	1510	soil					✓							2	
6		TP5.5-MN-5	Aug 13/10	1350	soil							✓	✓				1	
7																		
8												REC'D IN OTTAWA						
9																		
10																		

13/14/46
10/11/10

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted
Patricia Coyne	10/08/15	1630	Jessica K.	10/08/19	14:19	
JOHN ZERETH	2010/08/20	9:40				

Laboratory Use Only: Time Sensitive ☐ | Temperature (°C) on Receipt: 4°C | Custody Seal Intact on Cooler? ☐ Yes ☐ No

temp: 8/10/10° C
10/10/10° 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.

White: Maxxam Yellow: Client

Maxxam Analytics International Corporation o/a Maxxam Analytics

Your Project #: MB0B3907
Site: 123600017 SURFACE WATER

Attention: SUB CONTRACTOR
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B075376
Received: 2010/08/24, 8:30

Sample Matrix: Leachate
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX in Leachates by P&T GC/MS	2	2010/08/24	2010/08/25	CAL SOP-00190	EPA 1311/8260C
BTEX in Leachates by P&T GC/MS	1	2010/08/24	2010/08/26	CAL SOP-00190	EPA 1311/8260C
ICPMS Metals on TCLP Leachate	3	2010/08/24	2010/08/25	AB SOP-00043	EPA 200.8

Sample Matrix: Soil
Samples Received: 8

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Flash Point	3	N/A	2010/08/25	CAL SOP-00175	ASTM D93-07, 3828-05
Moisture	5	N/A	2010/08/25	CAL SOP-00023	McKeague MSSMA 2.411
Benzo[a]pyrene Equivalency	5	N/A	2010/08/25	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	5	2010/08/24	2010/08/25	AB SOP-00003 AB WI-00016	EPA 3540C/8270D
Free Liquid (Paint filter)	3	N/A	2010/08/25	CAL SOP-00020	EPA SW846/9095B
pH (1:1 extract, solid waste)	3	2010/08/25	2010/08/25	AB SOP-00006	SSMA 16.3

Encryption Key

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

JENNIFER RISPLER,
Email: Jennifer.Rispler@MaxxamAnalytics.com
Phone# (403) 735-2201 Ext:2201

==========

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 #: B075376
Report Date: 2010/08/26

MAXXAM ANALYTICS INC.
Client Project #: MB0B3907
Site Reference: 123600017 SURFACE WATER

BASIC CLASS II LANDFILL PACKAGE (LEACHATE)

Maxxam ID		W42965		W42977			W42978		
Sampling Date		2010/08/15		2010/08/15			2010/08/15		
	Units	**WASTE-1 (GW9685)**	**RDL**	**WASTE-2 (GW9686)**	**RDL**	**QC Batch**	**WASTE-3 (GW9687)**	**RDL**	**QC Batch**
Elements									
Leachable Antimony (Sb)	mg/L	<1	1	<1	1	4208036	<1	1	4208036
Leachable Arsenic (As)	mg/L	<0.5	0.5	<0.5	0.5	4208036	<0.5	0.5	4208036
Leachable Barium (Ba)	mg/L	<1	1	<1	1	4208036	<1	1	4208036
Leachable Beryllium (Be)	mg/L	<0.5	0.5	<0.5	0.5	4208036	<0.5	0.5	4208036
Leachable Boron (B)	mg/L	<1	1	<1	1	4208036	<1	1	4208036
Leachable Cadmium (Cd)	mg/L	<0.1	0.1	<0.1	0.1	4208036	<0.1	0.1	4208036
Leachable Chromium (Cr)	mg/L	<0.5	0.5	<0.5	0.5	4208036	<0.5	0.5	4208036
Leachable Cobalt (Co)	mg/L	<1	1	<1	1	4208036	<1	1	4208036
Leachable Copper (Cu)	mg/L	<1	1	15 (1)	5	4208036	<1	1	4208036
Leachable Iron (Fe)	mg/L	<1	1	1	1	4208036	<1	1	4208036
Leachable Lead (Pb)	mg/L	<0.5	0.5	230 (1)	20	4208036	<0.5	0.5	4208036
Leachable Mercury (Hg)	mg/L	<0.02	0.02	<0.02	0.02	4208036	<0.02	0.02	4208036
Leachable Nickel (Ni)	mg/L	<0.5	0.5	<0.5	0.5	4208036	<0.5	0.5	4208036
Leachable Selenium (Se)	mg/L	<0.1	0.1	<0.1	0.1	4208036	<0.1	0.1	4208036
Leachable Silver (Ag)	mg/L	<0.5	0.5	<0.5	0.5	4208036	<0.5	0.5	4208036
Leachable Thallium (Tl)	mg/L	<0.5	0.5	<0.5	0.5	4208036	<0.5	0.5	4208036
Leachable Uranium (U)	mg/L	<0.2	0.2	<0.2	0.2	4208036	<0.2	0.2	4208036
Leachable Vanadium (V)	mg/L	<1	1	<1	1	4208036	<1	1	4208036
Leachable Zinc (Zn)	mg/L	<1	1	36 (1)	5	4208036	<1	1	4208036
Leachable Zirconium (Zr)	mg/L	<1	1	<1	1	4208036	<1	1	4208036
Volatiles									
Leachable (ZH) Benzene	ug/L	<10	10	<10	10	4205295	<10	10	4209025
Leachable (ZH) Toluene	ug/L	<10	10	<10	10	4205295	<10	10	4209025
Leachable (ZH) Ethylbenzene	ug/L	<10	10	<10	10	4205295	<10	10	4209025
Leachable (ZH) o-Xylene	ug/L	<10	10	<10	10	4205295	<10	10	4209025
Leachable (ZH) m & p-Xylene	ug/L	<20	20	<20	20	4205295	<20	20	4209025
Leachable (ZH) Xylenes (Total)	ug/L	<20	20	<20	20	4205295	<20	20	4209025
Surrogate Recovery (%)									
Leachable (ZH) 4-BROMOFLUOROBENZENE (sur.)	%	100	N/A	97	N/A	4205295	103	N/A	4209025
Leachable (ZH) D4-1,2-DICHLOROETHANE (sur.)	%	99	N/A	101	N/A	4205295	94	N/A	4209025
Leachable (ZH) D8-TOLUENE (sur.)	%	100	N/A	98	N/A	4205295	95	N/A	4209025

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam Job #: B075376
Report Date: 2010/08/26

MAXXAM ANALYTICS INC.
Client Project #: MB0B3907
Site Reference: 123600017 SURFACE WATER

BASIC CLASS II LANDFILL PACKAGE (SOIL)

Maxxam ID		W42965	W42977	W42978	
Sampling Date		2010/08/15	2010/08/15	2010/08/15	
	Units	**WASTE-1 (GW9685)**	**WASTE-2 (GW9686)**	**WASTE-3 (GW9687)**	**QC Batch**
Soluble Parameters					
Soluble (1:1) pH	N/A	9.37	7.14	8.15	4207858
Physical Properties					
Closed Cup Flash point	deg. C	>75 (1)	>75 (1)	>75 (1)	4209119
Free Liquid	N/A	PASS	PASS	PASS	4209141

(1) Sample was past hold time when received.

Maxxam Job #: B075376
Report Date: 2010/08/26

MAXXAM ANALYTICS INC.
Client Project #: MB0B3907
Site Reference: 123600017 SURFACE WATER

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W42931	W42949	W42979	W42980	W42981	W42981		
Sampling Date		2010/08/15	2010/08/15	2010/08/15	2010/08/15	2010/08/15	2010/08/15		
	Units	**TP 3.5-G-H-1 (GW9676)**	**SS 10-1 (GW9683)**	**SE BEACH DUMP-1 (GW9688)**	**SE BEACH DUMP-2 (GW9689)**	**SE BEACH DUMP-3 (GW9690)**	**SE BEACH DUMP-3 (GW9690) Lab-Dup**	**RDL**	**QC Batch**
Physical Properties									
Moisture	%	4.9	16	19	29	13	13	0.3	4208904

RDL = Reportable Detection Limit

Maxxam Job #: B075376
Report Date: 2010/08/26

MAXXAM ANALYTICS INC.
Client Project #: MB0B3907
Site Reference: 123600017 SURFACE WATER

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W42931	W42931	W42949	W42979	W42980		
Sampling Date		2010/08/15	2010/08/15	2010/08/15	2010/08/15	2010/08/15		
	Units	**TP 3.5-G-H-1 (GW9676)**	**TP 3.5-G-H-1 (GW9676) Lab-Dup**	**SS 10-1 (GW9683)**	**SE BEACH DUMP-1 (GW9688)**	**SE BEACH DUMP-2 (GW9689)**	**RDL**	**QC Batch**
Polycyclic Aromatics								
Acenaphthene	mg/kg	<0.0050	<0.0050	1.8	<0.0050	<0.0050	0.0050	4205258
Benzo[a]pyrene equivalency	mg/kg	<0.1	N/A	0.2	<0.1	<0.1	0.1	4203965
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4205258
Acridine	mg/kg	<0.010	<0.010	1.2	<0.010	<0.010	0.010	4205258
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	4205258
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	0.43	<0.0050	<0.0050	0.0050	4205258
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	0.23	<0.0050	<0.0050	0.0050	4205258
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	0.071	<0.0050	<0.0050	0.0050	4205258
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	0.024	<0.0050	<0.0050	0.0050	4205258
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	0.099	<0.0050	<0.0050	0.0050	4205258
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	0.064	<0.0050	<0.0050	0.0050	4205258
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	0.092	<0.0050	<0.0050	0.0050	4205258
Chrysene	mg/kg	<0.0050	<0.0050	0.39	0.0074	<0.0050	0.0050	4205258
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	0.010	<0.0050	<0.0050	0.0050	4205258
Fluoranthene	mg/kg	<0.0050	<0.0050	3.8	0.024	<0.0050	0.0050	4205258
Fluorene	mg/kg	<0.0050	<0.0050	0.74	<0.0050	<0.0050	0.0050	4205258
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	0.026	<0.0050	<0.0050	0.0050	4205258
2-Methylnaphthalene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4205258
Naphthalene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	4205258
Phenanthrene	mg/kg	<0.0050	<0.0050	2.8	0.026	<0.0050	0.0050	4205258
Perylene	mg/kg	<0.0050	<0.0050	0.017	<0.0050	<0.0050	0.0050	4205258
Pyrene	mg/kg	<0.0050	<0.0050	3.2	0.014	<0.0050	0.0050	4205258
Quinoline	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	4205258
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	78	86	70	78	82	N/A	4205258
D12-BENZO(A)PYRENE (sur.)	%	80	88	69	83	87	N/A	4205258
D8-ACENAPHTHYLENE (sur.)	%	72	81	61	73	80	N/A	4205258
TERPHENYL-D14 (sur.)	%	79	86	66	97	83	N/A	4205258

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: B075376
Report Date: 2010/08/26

MAXXAM ANALYTICS INC.
Client Project #: MB0B3907
Site Reference: 123600017 SURFACE WATER

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W42981		
Sampling Date		2010/08/15		
	Units	**SE BEACH DUMP-3 (GW9690)**	**RDL**	**QC Batch**
Polycyclic Aromatics				
Acenaphthene	mg/kg	<0.0050	0.0050	4205258
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	4203965
Acenaphthylene	mg/kg	<0.0050	0.0050	4205258
Acridine	mg/kg	<0.010	0.010	4205258
Anthracene	mg/kg	<0.0040	0.0040	4205258
Benzo(a)anthracene	mg/kg	0.0061	0.0050	4205258
Benzo(b&j)fluoranthene	mg/kg	0.014	0.0050	4205258
Benzo(k)fluoranthene	mg/kg	0.0063	0.0050	4205258
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	4205258
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	4205258
Benzo(a)pyrene	mg/kg	0.0083	0.0050	4205258
Benzo[e]pyrene	mg/kg	0.0069	0.0050	4205258
Chrysene	mg/kg	0.020	0.0050	4205258
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	4205258
Fluoranthene	mg/kg	0.032	0.0050	4205258
Fluorene	mg/kg	<0.0050	0.0050	4205258
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	4205258
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	4205258
Naphthalene	mg/kg	<0.0050	0.0050	4205258
Phenanthrene	mg/kg	0.015	0.0050	4205258
Perylene	mg/kg	<0.0050	0.0050	4205258
Pyrene	mg/kg	0.025	0.0050	4205258
Quinoline	mg/kg	<0.010	0.010	4205258
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	79	N/A	4205258
D12-BENZO(A)PYRENE (sur.)	%	83	N/A	4205258
D8-ACENAPHTHYLENE (sur.)	%	74	N/A	4205258
TERPHENYL-D14 (sur.)	%	80	N/A	4205258

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: B075376
Report Date: 2010/08/26

MAXXAM ANALYTICS INC.
Client Project #: MB0B3907
Site Reference: 123600017 SURFACE WATER

Package 1	3.0°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B3907
P.O. #:
Site Reference: 123600017 SURFACE WATER

Quality Assurance Report

Maxxam Job Number: CB075376

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4205258	VM	Matrix Spike						
		[W42931-01]	D10-ANTHRACENE (sur.)	2010/08/25		71	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/25		74	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/25		66	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/25		71	%	30 - 130
			Acenaphthene	2010/08/25		74	%	30 - 130
			Acenaphthylene	2010/08/25		74	%	30 - 130
			Acridine	2010/08/25		49	%	30 - 130
			Anthracene	2010/08/25		65	%	30 - 130
			Benzo(a)anthracene	2010/08/25		79	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/25		72	%	30 - 130
			Benzo(k)fluoranthene	2010/08/25		96	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/25		69	%	30 - 130
			Benzo(c)phenanthrene	2010/08/25		65	%	30 - 130
			Benzo(a)pyrene	2010/08/25		82	%	30 - 130
			Benzo[e]pyrene	2010/08/25		74	%	30 - 130
			Chrysene	2010/08/25		127	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/25		80	%	30 - 130
			Fluoranthene	2010/08/25		77	%	30 - 130
			Fluorene	2010/08/25		78	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/25		69	%	30 - 130
			2-Methylnaphthalene	2010/08/25		77	%	30 - 130
			Naphthalene	2010/08/25		82	%	30 - 130
			Phenanthrene	2010/08/25		79	%	30 - 130
			Perylene	2010/08/25		61	%	30 - 130
			Pyrene	2010/08/25		81	%	30 - 130
			Quinoline	2010/08/25		103	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/25		75	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/25		77	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/25		68	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/25		75	%	30 - 130
			Acenaphthene	2010/08/25		78	%	30 - 130
			Acenaphthylene	2010/08/25		75	%	30 - 130
			Acridine	2010/08/25		51	%	30 - 130
			Anthracene	2010/08/25		65	%	30 - 130
			Benzo(a)anthracene	2010/08/25		78	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/25		78	%	30 - 130
			Benzo(k)fluoranthene	2010/08/25		79	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/25		68	%	30 - 130
			Benzo(c)phenanthrene	2010/08/25		64	%	30 - 130
			Benzo(a)pyrene	2010/08/25		80	%	30 - 130
			Benzo[e]pyrene	2010/08/25		72	%	30 - 130
			Chrysene	2010/08/25		124	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/25		79	%	30 - 130
			Fluoranthene	2010/08/25		75	%	30 - 130
			Fluorene	2010/08/25		76	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/25		67	%	30 - 130
			2-Methylnaphthalene	2010/08/25		79	%	30 - 130
			Naphthalene	2010/08/25		80	%	30 - 130
			Phenanthrene	2010/08/25		78	%	30 - 130
			Perylene	2010/08/25		61	%	30 - 130
			Pyrene	2010/08/25		80	%	30 - 130
			Quinoline	2010/08/25		98	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/25		80	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/25		81	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B3907
P.O. #:
Site Reference: 123600017 SURFACE WATER

Quality Assurance Report (Continued)

Maxxam Job Number: CB075376

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4205258	VM	Method Blank	D8-ACENAPHTHYLENE (sur.)	2010/08/25		73	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/25		80	%	30 - 130
			Acenaphthene	2010/08/25	<0.0050		mg/kg	
			Acenaphthylene	2010/08/25	<0.0050		mg/kg	
			Acridine	2010/08/25	<0.010		mg/kg	
			Anthracene	2010/08/25	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/25	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/25	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/25	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/25	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/25	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/25	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/25	<0.0050		mg/kg	
			Chrysene	2010/08/25	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/25	<0.0050		mg/kg	
			Fluoranthene	2010/08/25	<0.0050		mg/kg	
			Fluorene	2010/08/25	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/25	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/25	<0.0050		mg/kg	
			Naphthalene	2010/08/25	<0.0050		mg/kg	
			Phenanthrene	2010/08/25	<0.0050		mg/kg	
			Perylene	2010/08/25	<0.0050		mg/kg	
			Pyrene	2010/08/25	<0.0050		mg/kg	
			Quinoline	2010/08/25	<0.010		mg/kg	
		RPD [W42931-01]	Acenaphthene	2010/08/25	NC		%	50
			Acenaphthylene	2010/08/25	NC		%	50
			Acridine	2010/08/25	NC		%	50
			Anthracene	2010/08/25	NC		%	50
			Benzo(a)anthracene	2010/08/25	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/25	NC		%	50
			Benzo(k)fluoranthene	2010/08/25	NC		%	50
			Benzo(g,h,i)perylene	2010/08/25	NC		%	50
			Benzo(c)phenanthrene	2010/08/25	NC		%	50
			Benzo(a)pyrene	2010/08/25	NC		%	50
			Benzo[e]pyrene	2010/08/25	NC		%	50
			Chrysene	2010/08/25	NC		%	50
			Dibenz(a,h)anthracene	2010/08/25	NC		%	50
			Fluoranthene	2010/08/25	NC		%	50
			Fluorene	2010/08/25	NC		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/25	NC		%	50
			2-Methylnaphthalene	2010/08/25	NC		%	50
			Naphthalene	2010/08/25	NC		%	50
			Phenanthrene	2010/08/25	NC		%	50
			Perylene	2010/08/25	NC		%	50
			Pyrene	2010/08/25	NC		%	50
			Quinoline	2010/08/25	NC		%	50
4205295	IK	Spiked Blank	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/25		96	%	60 - 140
			Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/25		95	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/25		92	%	60 - 140
			Leachable (ZH) Benzene	2010/08/25		89	%	70 - 130
			Leachable (ZH) Toluene	2010/08/25		85	%	70 - 130
			Leachable (ZH) Ethylbenzene	2010/08/25		84	%	70 - 130
			Leachable (ZH) o-Xylene	2010/08/25		94	%	70 - 130
			Leachable (ZH) m & p-Xylene	2010/08/25		85	%	70 - 130
		Method Blank	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/25		98	%	60 - 140

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B3907
P.O. #:
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Quality Assurance Report (Continued)

Maxxam Job Number: CB075376

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4205295	IK	Method Blank	Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/25		97	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/25		98	%	60 - 140
			Leachable (ZH) Benzene	2010/08/25	<10		ug/L	
			Leachable (ZH) Toluene	2010/08/25	<10		ug/L	
			Leachable (ZH) Ethylbenzene	2010/08/25	<10		ug/L	
			Leachable (ZH) o-Xylene	2010/08/25	<10		ug/L	
			Leachable (ZH) m & p-Xylene	2010/08/25	<20		ug/L	
			Leachable (ZH) Xylenes (Total)	2010/08/25	<20		ug/L	
		RPD	Leachable (ZH) Benzene	2010/08/25	NC		%	50
			Leachable (ZH) Toluene	2010/08/25	NC		%	50
			Leachable (ZH) Ethylbenzene	2010/08/25	NC		%	50
			Leachable (ZH) o-Xylene	2010/08/25	NC		%	50
			Leachable (ZH) m & p-Xylene	2010/08/25	NC		%	50
			Leachable (ZH) Xylenes (Total)	2010/08/25	NC		%	50
4207858	YW2	QC Standard	Soluble (1:1) pH	2010/08/25		100	%	91 - 109
		Spiked Blank	Soluble (1:1) pH	2010/08/25		100	%	97 - 102
		RPD	Soluble (1:1) pH	2010/08/25	1.5		%	5
4208036	NR	Matrix Spike	Leachable Antimony (Sb)	2010/08/25		103	%	75 - 125
			Leachable Arsenic (As)	2010/08/25		105	%	75 - 125
			Leachable Barium (Ba)	2010/08/25		NC	%	75 - 125
			Leachable Beryllium (Be)	2010/08/25		104	%	75 - 125
			Leachable Boron (B)	2010/08/25		115	%	75 - 125
			Leachable Cadmium (Cd)	2010/08/25		100	%	75 - 125
			Leachable Chromium (Cr)	2010/08/25		98	%	75 - 125
			Leachable Cobalt (Co)	2010/08/25		105	%	75 - 125
			Leachable Copper (Cu)	2010/08/25		96	%	75 - 125
			Leachable Iron (Fe)	2010/08/25		NC	%	75 - 125
			Leachable Lead (Pb)	2010/08/25		92	%	75 - 125
			Leachable Mercury (Hg)	2010/08/25		93	%	75 - 125
			Leachable Nickel (Ni)	2010/08/25		94	%	75 - 125
			Leachable Selenium (Se)	2010/08/25		113	%	75 - 125
			Leachable Silver (Ag)	2010/08/25		76	%	75 - 125
			Leachable Thallium (Tl)	2010/08/25		96	%	75 - 125
			Leachable Uranium (U)	2010/08/25		102	%	75 - 125
			Leachable Vanadium (V)	2010/08/25		104	%	75 - 125
			Leachable Zinc (Zn)	2010/08/25		96	%	75 - 125
			Leachable Zirconium (Zr)	2010/08/25		100	%	75 - 125
		Spiked Blank	Leachable Antimony (Sb)	2010/08/25		96	%	80 - 120
			Leachable Arsenic (As)	2010/08/25		90	%	82 - 104
			Leachable Barium (Ba)	2010/08/25		93	%	80 - 118
			Leachable Beryllium (Be)	2010/08/25		100	%	80 - 120
			Leachable Boron (B)	2010/08/25		109	%	75 - 125
			Leachable Cadmium (Cd)	2010/08/25		96	%	80 - 119
			Leachable Chromium (Cr)	2010/08/25		96	%	80 - 116
			Leachable Cobalt (Co)	2010/08/25		102	%	80 - 115
			Leachable Copper (Cu)	2010/08/25		97	%	80 - 119
			Leachable Iron (Fe)	2010/08/25		102	%	80 - 120
			Leachable Lead (Pb)	2010/08/25		92	%	84 - 113
			Leachable Mercury (Hg)	2010/08/25		86	%	80 - 120
			Leachable Nickel (Ni)	2010/08/25		96	%	80 - 118
			Leachable Selenium (Se)	2010/08/25		93	%	80 - 118
			Leachable Silver (Ag)	2010/08/25		84	%	80 - 120
			Leachable Thallium (Tl)	2010/08/25		92	%	80 - 120
			Leachable Uranium (U)	2010/08/25		96	%	80 - 120
			Leachable Vanadium (V)	2010/08/25		99	%	80 - 120

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B3907
P.O. #:
Site Reference: 123600017 SURFACE WATER

Quality Assurance Report (Continued)

Maxxam Job Number: CB075376

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4208036	NR	Spiked Blank	Leachable Zinc (Zn)	2010/08/25		94	%	80 - 120
			Leachable Zirconium (Zr)	2010/08/25		94	%	75 - 125
		Method Blank	Leachable Antimony (Sb)	2010/08/25	<1		mg/L	
			Leachable Arsenic (As)	2010/08/25	<0.5		mg/L	
			Leachable Barium (Ba)	2010/08/25	<1		mg/L	
			Leachable Beryllium (Be)	2010/08/25	<0.5		mg/L	
			Leachable Boron (B)	2010/08/25	<1		mg/L	
			Leachable Cadmium (Cd)	2010/08/25	<0.1		mg/L	
			Leachable Chromium (Cr)	2010/08/25	<0.5		mg/L	
			Leachable Cobalt (Co)	2010/08/25	<1		mg/L	
			Leachable Copper (Cu)	2010/08/25	<1		mg/L	
			Leachable Iron (Fe)	2010/08/25	<1		mg/L	
			Leachable Lead (Pb)	2010/08/25	<0.5		mg/L	
			Leachable Mercury (Hg)	2010/08/25	<0.02		mg/L	
			Leachable Nickel (Ni)	2010/08/25	<0.5		mg/L	
			Leachable Selenium (Se)	2010/08/25	<0.1		mg/L	
			Leachable Silver (Ag)	2010/08/25	<0.5		mg/L	
			Leachable Thallium (Tl)	2010/08/25	<0.5		mg/L	
			Leachable Uranium (U)	2010/08/25	<0.2		mg/L	
			Leachable Vanadium (V)	2010/08/25	<1		mg/L	
			Leachable Zinc (Zn)	2010/08/25	<1		mg/L	
			Leachable Zirconium (Zr)	2010/08/25	<1		mg/L	
		RPD	Leachable Antimony (Sb)	2010/08/25	NC		%	35
			Leachable Arsenic (As)	2010/08/25	NC		%	35
			Leachable Barium (Ba)	2010/08/25	NC		%	35
			Leachable Beryllium (Be)	2010/08/25	NC		%	35
			Leachable Boron (B)	2010/08/25	NC		%	35
			Leachable Cadmium (Cd)	2010/08/25	NC		%	35
			Leachable Chromium (Cr)	2010/08/25	NC		%	35
			Leachable Cobalt (Co)	2010/08/25	NC		%	35
			Leachable Copper (Cu)	2010/08/25	NC		%	35
			Leachable Iron (Fe)	2010/08/25	0.9		%	35
			Leachable Lead (Pb)	2010/08/25	NC		%	35
			Leachable Mercury (Hg)	2010/08/25	NC		%	35
			Leachable Nickel (Ni)	2010/08/25	NC		%	35
			Leachable Selenium (Se)	2010/08/25	NC		%	35
			Leachable Silver (Ag)	2010/08/25	NC		%	35
			Leachable Thallium (Tl)	2010/08/25	NC		%	35
			Leachable Uranium (U)	2010/08/25	NC		%	35
			Leachable Vanadium (V)	2010/08/25	NC		%	35
			Leachable Zinc (Zn)	2010/08/25	NC		%	35
			Leachable Zirconium (Zr)	2010/08/25	NC		%	35
4208904	GB0	RPD [W42981-01]	Moisture	2010/08/25	1.6		%	20
4209025	IK	Spiked Blank	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/26		99	%	60 - 140
			Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/26		97	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/26		92	%	60 - 140
			Leachable (ZH) Benzene	2010/08/26		101	%	70 - 130
			Leachable (ZH) Toluene	2010/08/26		97	%	70 - 130
			Leachable (ZH) Ethylbenzene	2010/08/26		98	%	70 - 130
			Leachable (ZH) o-Xylene	2010/08/26		103	%	70 - 130
			Leachable (ZH) m & p-Xylene	2010/08/26		99	%	70 - 130
		Method Blank	Leachable (ZH) 4-BROMOFLUOROBENZEN	2010/08/26		99	%	60 - 140
			Leachable (ZH) D4-1,2-DICHLOROETHANE	2010/08/26		98	%	60 - 140
			Leachable (ZH) D8-TOLUENE (sur.)	2010/08/26		96	%	60 - 140
			Leachable (ZH) Benzene	2010/08/26	<10		ug/L	

MAXXAM ANALYTICS INC.
Attention: SUB CONTRACTOR
Client Project #: MB0B3907
P.O. #:
Site Reference: 123600017 SURFACE WATER

Quality Assurance Report (Continued)

Maxxam Job Number: CB075376

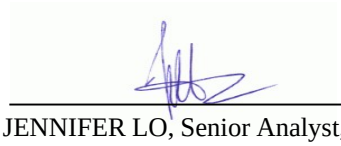
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4209025	IK	Method Blank	Leachable (ZH) Toluene	2010/08/26	<10		ug/L	
			Leachable (ZH) Ethylbenzene	2010/08/26	<10		ug/L	
			Leachable (ZH) o-Xylene	2010/08/26	<10		ug/L	
			Leachable (ZH) m & p-Xylene	2010/08/26	<20		ug/L	
			Leachable (ZH) Xylenes (Total)	2010/08/26	<20		ug/L	
		RPD	Leachable (ZH) Benzene	2010/08/26	NC		%	50
			Leachable (ZH) Toluene	2010/08/26	NC		%	50
			Leachable (ZH) Ethylbenzene	2010/08/26	NC		%	50
			Leachable (ZH) o-Xylene	2010/08/26	8.3		%	50
			Leachable (ZH) m & p-Xylene	2010/08/26	NC		%	50
			Leachable (ZH) Xylenes (Total)	2010/08/26	10.1		%	50
4209119	RK3	QC Standard	Closed Cup Flash point	2010/08/25		100	%	85 - 115
		RPD	Closed Cup Flash point	2010/08/25	NC		%	35

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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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.

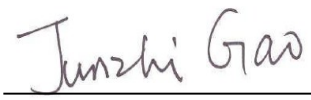
Validation Signature Page

Maxxam Job #: B075376

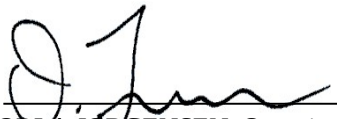
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



JENNIFER LO, Senior Analyst, Organics Department



JANET GAO, Senior Analyst, Organics Department



ORLA JORGENSEN, Organics Supervisor

RON VENZI, Scientific Specialist

==========

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

Your Project #: B0B4037

Attention: Renata Spena
MAXXAM ANALYTICS INC.
CAMPOBELLO
6740 CAMPOBELLO ROAD
MISSISSAUGA, ON
CANADA L5N 2L8

Report Date: 2010/08/26

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B075384
Received: 2010/08/24, 8:30

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Moisture	3	N/A	2010/08/26	EENVSOP-00139	Carter SSMA 51.2
Benzo[a]pyrene Equivalency	3	N/A	2010/08/26	AB SOP-00003	EPA 8270D
Polycyclic Aromatic Hydrocarbons in soil	3	2010/08/25	2010/08/26	AB SOP-00003 AB WI-00016	EPA 3540C/8270D

Encryption Key

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

TANYA EUGINE, M.Sc., Project Manager
Email: tanya.eugine@maxxamanalytics.com
Phone# (780) 577-7100

==========

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 ANALYTICS INC.

Maxxam Job #: B075384
Report Date: 2010/08/26

Client Project #: B0B4037

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		W42982	W42984	W42985		
Sampling Date		2010/08/14	2010/08/14	2010/08/13		
	Units	**GX0192-02R\TP 3.5-KL-3**	**GX0204-03R\TP9-CD-2**	**GX0234-03R\TP5.5-MN-5**	**RDL**	**QC Batch**
Physical Properties						
Moisture	%	6.1	20	14	0.3	4210893

RDL = Reportable Detection Limit

MAXXAM ANALYTICS INC.

Maxxam Job #: B075384
Report Date: 2010/08/26

Client Project #: B0B4037

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		W42982		W42984		W42985		
Sampling Date		2010/08/14		2010/08/14		2010/08/13		
	Units	**GX0192-02R\TP 3.5-KL-3**	**RDL**	**GX0204-03R\TP9-CD-2**	**RDL**	**GX0234-03R\TP5.5-MN-5**	**RDL**	**QC Batch**
Polycyclic Aromatics								
Acenaphthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.40 (1)	0.40	4206711
Benzo[a]pyrene equivalency	mg/kg	<0.1	0.1	<0.1	0.1	<0.1	0.1	4204428
Acenaphthylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	0.050	0.0050	4206711
Acridine	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	4206711
Anthracene	mg/kg	<0.0040	0.0040	<0.0040	0.0040	0.0095	0.0040	4206711
Benzo(a)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Benzo(b&j)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Benzo(k)fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Benzo(g,h,i)perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Benzo(c)phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Benzo(a)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Benzo[e]pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Chrysene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Dibenz(a,h)anthracene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Fluoranthene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Fluorene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	0.59	0.0050	4206711
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
2-Methylnaphthalene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	17 (2)	0.050	4206711
Naphthalene	mg/kg	0.040 (1)	0.040	<0.0050	0.0050	6.8	0.0050	4206711
Phenanthrene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	0.24	0.0050	4206711
Perylene	mg/kg	<0.0050	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Pyrene	mg/kg	0.048	0.0050	<0.0050	0.0050	<0.0050	0.0050	4206711
Quinoline	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	4206711
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	59	N/A	59	N/A	61	N/A	4206711
D12-BENZO(A)PYRENE (sur.)	%	42	N/A	47	N/A	49	N/A	4206711
D8-ACENAPHTHYLENE (sur.)	%	51	N/A	50	N/A	58	N/A	4206711
TERPHENYL-D14 (sur.)	%	51	N/A	52	N/A	54	N/A	4206711

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limits raised due to matrix interference
(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

MAXXAM ANALYTICS INC.
Client Project #: B0B4037

Maxxam Job #: B075384
Report Date: 2010/08/26

Package 1	5.7°C

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

General Comments

Results relate only to the items tested.

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0B4037
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EB075384

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4206711	JA3	Matrix Spike	D10-ANTHRACENE (sur.)	2010/08/26		58	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/26		42	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/26		53	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/26		49	%	30 - 130
			Acenaphthene	2010/08/26		NC	%	30 - 130
			Acenaphthylene	2010/08/26		93	%	30 - 130
			Acridine	2010/08/26		63	%	30 - 130
			Anthracene	2010/08/26		84	%	30 - 130
			Benzo(a)anthracene	2010/08/26		92	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/26		88	%	30 - 130
			Benzo(k)fluoranthene	2010/08/26		89	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/26		91	%	30 - 130
			Benzo(c)phenanthrene	2010/08/26		90	%	30 - 130
			Benzo(a)pyrene	2010/08/26		87	%	30 - 130
			Benzo[e]pyrene	2010/08/26		88	%	30 - 130
			Chrysene	2010/08/26		115	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/26		95	%	30 - 130
			Fluoranthene	2010/08/26		97	%	30 - 130
			Fluorene	2010/08/26		NC	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/26		89	%	30 - 130
			2-Methylnaphthalene	2010/08/26		NC	%	30 - 130
			Naphthalene	2010/08/26		NC	%	30 - 130
			Phenanthrene	2010/08/26		NC	%	30 - 130
			Perylene	2010/08/26		86	%	30 - 130
			Pyrene	2010/08/26		96	%	30 - 130
			Quinoline	2010/08/26		247 (1)	%	30 - 130
		Spiked Blank	D10-ANTHRACENE (sur.)	2010/08/26		61	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/26		46	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/26		50	%	30 - 130
			TERPHENYL-D14 (sur.)	2010/08/26		51	%	30 - 130
			Acenaphthene	2010/08/26		98	%	30 - 130
			Acenaphthylene	2010/08/26		97	%	30 - 130
			Acridine	2010/08/26		58	%	30 - 130
			Anthracene	2010/08/26		89	%	30 - 130
			Benzo(a)anthracene	2010/08/26		96	%	30 - 130
			Benzo(b&j)fluoranthene	2010/08/26		104	%	30 - 130
			Benzo(k)fluoranthene	2010/08/26		92	%	30 - 130
			Benzo(g,h,i)perylene	2010/08/26		88	%	30 - 130
			Benzo(c)phenanthrene	2010/08/26		94	%	30 - 130
			Benzo(a)pyrene	2010/08/26		91	%	30 - 130
			Benzo[e]pyrene	2010/08/26		92	%	30 - 130
			Chrysene	2010/08/26		125	%	30 - 130
			Dibenz(a,h)anthracene	2010/08/26		91	%	30 - 130
			Fluoranthene	2010/08/26		103	%	30 - 130
			Fluorene	2010/08/26		98	%	30 - 130
			Indeno(1,2,3-cd)pyrene	2010/08/26		89	%	30 - 130
			2-Methylnaphthalene	2010/08/26		91	%	30 - 130
			Naphthalene	2010/08/26		96	%	30 - 130
			Phenanthrene	2010/08/26		99	%	30 - 130
			Perylene	2010/08/26		98	%	30 - 130
			Pyrene	2010/08/26		102	%	30 - 130
			Quinoline	2010/08/26		245 (2)	%	30 - 130
		Method Blank	D10-ANTHRACENE (sur.)	2010/08/25		63	%	30 - 130
			D12-BENZO(A)PYRENE (sur.)	2010/08/25		49	%	30 - 130
			D8-ACENAPHTHYLENE (sur.)	2010/08/25		53	%	30 - 130

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0B4037
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EB075384

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
4206711	JA3	Method Blank	TERPHENYL-D14 (sur.)	2010/08/25		53	%	30 - 130
			Acenaphthene	2010/08/25	<0.0050		mg/kg	
			Acenaphthylene	2010/08/25	<0.0050		mg/kg	
			Acridine	2010/08/25	<0.010		mg/kg	
			Anthracene	2010/08/25	<0.0040		mg/kg	
			Benzo(a)anthracene	2010/08/25	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2010/08/25	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2010/08/25	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2010/08/25	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2010/08/25	<0.0050		mg/kg	
			Benzo(a)pyrene	2010/08/25	<0.0050		mg/kg	
			Benzo[e]pyrene	2010/08/25	<0.0050		mg/kg	
			Chrysene	2010/08/25	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2010/08/25	<0.0050		mg/kg	
			Fluoranthene	2010/08/25	<0.0050		mg/kg	
			Fluorene	2010/08/25	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2010/08/25	<0.0050		mg/kg	
			2-Methylnaphthalene	2010/08/25	<0.0050		mg/kg	
			Naphthalene	2010/08/25	<0.0050		mg/kg	
			Phenanthrene	2010/08/25	<0.0050		mg/kg	
			Perylene	2010/08/25	<0.0050		mg/kg	
			Pyrene	2010/08/25	<0.0050		mg/kg	
			Quinoline	2010/08/25	<0.010		mg/kg	
		RPD	Acenaphthene	2010/08/26	NC		%	50
			Acenaphthylene	2010/08/26	NC		%	50
			Acridine	2010/08/26	NC		%	50
			Anthracene	2010/08/26	NC		%	50
			Benzo(a)anthracene	2010/08/26	NC		%	50
			Benzo(b&j)fluoranthene	2010/08/26	NC		%	50
			Benzo(k)fluoranthene	2010/08/26	NC		%	50
			Benzo(g,h,i)perylene	2010/08/26	NC		%	50
			Benzo(c)phenanthrene	2010/08/26	NC		%	50
			Benzo(a)pyrene	2010/08/26	NC		%	50
			Benzo[e]pyrene	2010/08/26	NC		%	50
			Chrysene	2010/08/26	NC		%	50
			Dibenz(a,h)anthracene	2010/08/26	NC		%	50
			Fluoranthene	2010/08/26	NC		%	50
			Fluorene	2010/08/26	NC		%	50
			Indeno(1,2,3-cd)pyrene	2010/08/26	NC		%	50
			2-Methylnaphthalene	2010/08/26	43.9		%	50
			Naphthalene	2010/08/26	23.0		%	50
			Phenanthrene	2010/08/26	NC (3)		%	50
			Perylene	2010/08/26	24.9		%	50
			Pyrene	2010/08/26	NC		%	50
			Quinoline	2010/08/26	NC		%	50
4210893	JL8	Method Blank	Moisture	2010/08/26	<0.3		%	
		RPD	Moisture	2010/08/26	0.6		%	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.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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

MAXXAM ANALYTICS INC.
Attention: Renata Spena
Client Project #: B0B4037
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

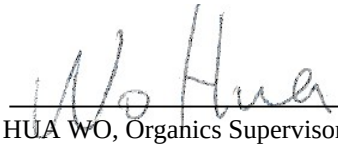
Maxxam Job Number: EB075384

reliable calculation.
(1) Less than 10% of reported compounds fails in matrix spike. Matrix spike meets acceptance criteria.
(2) Less than 10% of reported compounds fails in blank spike. Blank spike meets acceptance criteria.
(3) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.

Validation Signature Page

Maxxam Job #: B075384

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



HUA WO, Organics Supervisor

==========

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

Your P.O. #: 16300NR
Your Project #: 1236000017
Site: CLYDE RIVER PHASE III ESA
Your C.O.C. #: 20063801, 200638-0

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/15
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0B4037
Received: 2010/08/20, 14:19

Sample Matrix: Soil
Samples Received: 44

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Hot Water Extractable Boron	23	2010/08/26	2010/08/27	CAM SOP-00408	R153 Ana. Prot. 2004
Hot Water Extractable Boron	4	2010/08/30	2010/08/30	CAM SOP-00408	R153 Ana. Prot. 2004
Hexavalent Chromium in Soil by IC (1)	6	N/A	2010/08/26	CAM SOP-00436	EPA SW846-3060/7199
Hexavalent Chromium in Soil by IC (1)	21	N/A	2010/08/27	CAM SOP-00436	EPA SW846-3060/7199
Petroleum Hydro. CCME F1 & BTEX in Soil	20	2010/08/21	2010/08/24	CAM SOP-00315	CCME CWS
Petroleum Hydro. CCME F1 & BTEX in Soil	8	2010/08/21	2010/08/25	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	28	2010/08/23	2010/08/25	CAM SOP-00316	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	2	2010/09/09	2010/09/10	CAM SOP-00316	CCME CWS
Acid Extr. Metals (aqua regia) by ICPMS	27	2010/08/26	2010/08/26	CAM SOP-00447	EPA 6020
Moisture	43	N/A	2010/08/25	CAM SOP-00445	McKeague 2nd ed 1978
Moisture	1	N/A	2010/09/14	CAM SOP-00445	McKeague 2nd ed 1978
pH CaCl2 EXTRACT	2	2010/08/26	2010/08/26	CAM SOP-00413	SM 4500 H

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

(1) Soils are reported on a dry weight basis unless otherwise specified.

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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Total cover pages: 1

Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GX0189		GX0190		GX0191		
Sampling Date		2010/08/14 08:30		2010/08/14 08:35		2010/08/14 10:50		
COC Number		200638-0		200638-0		200638-0		
	Units	**TP 4.5-LM-2**	**QC Batch**	**TP 4.5-LM-3**	**QC Batch**	**TP 3.5-KL-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2	2245261		2245261	<0.2	0.2	2245261
Moisture	%	12	2245420	14	2246187	11	1	2245420

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0192	GX0192	GX0193	GX0194	GX0195		
Sampling Date		2010/08/14 10:55	2010/08/14 10:55	2010/08/14 10:20	2010/08/14 09:30	2010/08/14 14:20		
COC Number		200638-0	200638-0	200638-0	200638-0	200638-0		
	Units	**TP 3.5-KL-3**	**TP 3.5-KL-3 Lab-Dup**	**TP 4.5-KL-3**	**TP7.5-KL3**	**TP9-C-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g					<0.2	0.2	2245261
Moisture	%	6	6	9	25	9	1	2246187

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0196	GX0197	GX0198	GX0199	GX0200		
Sampling Date		2010/08/14 08:50	2010/08/14 09:45	2010/08/14 13:35	2010/08/14 13:05	2010/08/14 08:50		
COC Number		200638-0	200638-0	200638-0	200638-0	200638-0		
	Units	**TP5.5-LM-2**	**TP6.5-KL-3**	**TP9.5-I-2**	**TP10.5-H-2**	**TP6.5-LM-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2		<0.2	<0.2	<0.2	0.2	2245261
Moisture	%	14	15	20	22	11	1	2246187

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GX0201	GX0202	GX0203	GX0204	GX0205		
Sampling Date		2010/08/14 11:25	2010/08/14 10:00	2010/08/14 11:10	2010/08/14 14:00	2010/08/14 14:50		
COC Number		200638-0	200638-0	200638-0	200638-0	200638-0		
	Units	**TP5.5-JK-3**	**TP5.5-KL-3**	**TP4.5-JK-3**	**TP9-CD-2**	**TPDUMP4-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g				<0.2	<0.2	0.2	2245261
Moisture	%	12	11	16	22	20	1	2246187

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0206		GX0207	GX0208		GX0209		
Sampling Date		2010/08/14 15:35		2010/08/14 16:10	2010/08/14 10:50		2010/08/14 14:50		
COC Number		200638-0		200638-0	200638-0		200638-0		
	Units	**TPDUMP2-3**	**QC Batch**	**TPDUMP1-1**	**DUP H**	**QC Batch**	**DUP I**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	2245552	<0.2	<0.2	2245552	<0.2	0.2	2245261
Moisture	%	8	2246231	4	3	2245420	27	1	2245420

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0210		GX0211	GX0211	GX0212		
Sampling Date		2010/08/14 08:30		2010/08/13 15:50	2010/08/13 15:50	2010/08/13 16:10		
COC Number		200638-0		200638-0	200638-0	200638-0		
	Units	**DUP J**	**QC Batch**	**TP2.5-NO-2**	**TP2.5-NO-2 Lab-Dup**	**TP3.5-NO-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2	2245261	<0.2	<0.2		0.2	2245261
Moisture	%	17	2245420	22		20	1	2246187

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GX0213		GX0214	GX0215	GX0216		
Sampling Date		2010/08/13 10:35		2010/08/13 10:40	2010/08/13 10:10	2010/08/13 15:30		
COC Number		200638-0		200638-0	200638-0	200638-0		
	Units	**TP6.5-NO-2**	**QC Batch**	**TP6.5-NO-3**	**TP7.5-NO-2**	**TP2.5-MN-3**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2	2245261		<0.2		0.2	2245261
Moisture	%	25	2245420	11	20	12	1	2246187

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0217		GX0218		GX0219	GX0221		
Sampling Date		2010/08/13 14:56		2010/08/13 14:28		2010/08/13 14:30	2010/08/13 13:00		
COC Number		200638-0		200638-0		200638-0	200638-0		
	Units	**TP3.5-MN-2**	**QC Batch**	**TP4.5-MN-2**	**QC Batch**	**TP 4.5-MN-3**	**TP6.5-MN-7**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g		2245261	<0.2	2245552			0.2	2245552
Moisture	%	9	2246231	17	2245420	26	9	1	2246231

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0222		GX0223	GX0224		GX0225		
Sampling Date		2010/08/13 11:00		2010/08/13 11:05	2010/08/13 11:10		2010/08/13 11:15		
COC Number		200638-0		200638-0	200638-0		200638-0		
	Units	**TP7-MN-1**	**QC Batch**	**TP7-MN-2**	**TP7-MN-3**	**QC Batch**	**TP7-MN-4**	**RDL**	**QC Batch**
Inorganics									
Chromium (VI)	ug/g	<0.2	2245261	<0.2	<0.2	2245552	<0.2	0.2	2245261
Moisture	%	34	2245420	32	18	2245420	20	1	2245420
Available (CaCl2) pH	pH	7.89	2246631						

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

RESULTS OF ANALYSES OF SOIL

Maxxam ID		GX0225		GX0226		GX0229		
Sampling Date		2010/08/13 11:15		2010/08/13 11:20		2010/08/13 07:55		
COC Number		200638-0		200638-0		200638-0		
	Units	**TP7-MN-4 Lab-Dup**	**QC Batch**	**TP7-MN-5**	**QC Batch**	**TP7.5-MN-2**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g		2245261	<0.2	2245257	<0.2	0.2	2245261
Moisture	%	17	2245420	24	2246231	14	1	2245420

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0230	GX0234		GX0236	GX0236		
Sampling Date		2010/08/13 09:15	2010/08/13 14:12		2010/08/13 13:06	2010/08/13 13:06		
COC Number		200638-0	200638-0		200638-0	200638-0		
	Units	**TP7.5-LM-1**	**TP5.5-MN-5**	**QC Batch**	**TP6.5-MN-2**	**TP6.5-MN-2 Lab-Dup**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2		2245261			0.2	2245261
Moisture	%	53	16	2246231	20	19	1	2265296
Available (CaCl2) pH	pH		7.72	2246375				

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam ID		GX0240		GX0241		GX0242		
Sampling Date		2010/08/13 13:28		2010/08/13 16:50		2010/08/13 10:35		
COC Number		200638-0		200638-0		200638-0		
	Units	**TP6.5-MN-6**	**QC Batch**	**TP3.5-LM-4**	**QC Batch**	**DUP K**	**RDL**	**QC Batch**
Inorganics								
Chromium (VI)	ug/g	<0.2	2245261		2245261	<0.2	0.2	2245261
Moisture	%	10	2245420	9	2246231	19	1	2245420

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0189	GX0191		GX0195		
Sampling Date		2010/08/14 08:30	2010/08/14 10:50		2010/08/14 14:20		
COC Number		200638-0	200638-0		200638-0		
	Units	**TP 4.5-LM-2**	**TP 3.5-KL-2**	**QC Batch**	**TP9-C-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.10	0.20	2246677	0.06	0.05	2246677
Acid Extractable Aluminum (Al)	ug/g	11000	2100	2246668	13000	50	2246667
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	2246668	<0.2	0.2	2246667
Acid Extractable Arsenic (As)	ug/g	2	1	2246668	2	1	2246667
Acid Extractable Barium (Ba)	ug/g	47	11	2246668	65	0.5	2246667
Acid Extractable Beryllium (Be)	ug/g	0.3	<0.2	2246668	0.2	0.2	2246667
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	2246668	<1	1	2246667
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	2246668	<0.1	0.1	2246667
Acid Extractable Chromium (Cr)	ug/g	18	6	2246668	21	1	2246667
Acid Extractable Cobalt (Co)	ug/g	6.7	1.3	2246668	8.8	0.1	2246667
Acid Extractable Copper (Cu)	ug/g	9.0	1.8	2246668	14	0.5	2246667
Acid Extractable Iron (Fe)	ug/g	21000	7800	2246668	26000	50	2246667
Acid Extractable Lead (Pb)	ug/g	6	2	2246668	8	1	2246667
Acid Extractable Manganese (Mn)	ug/g	260	50	2246668	350	1	2246667
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2.0	2246668	<0.5	0.5	2246667
Acid Extractable Nickel (Ni)	ug/g	10	2.5	2246668	13	0.5	2246667
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	2246668	<0.5	0.5	2246667
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	2246668	<0.2	0.2	2246667
Acid Extractable Strontium (Sr)	ug/g	9	2	2246668	10	1	2246667
Acid Extractable Thallium (Tl)	ug/g	0.31	0.06	2246668	0.39	0.05	2246667
Acid Extractable Tin (Sn)	ug/g	<5	<5	2246668	<5	5	2246667
Acid Extractable Uranium (U)	ug/g	0.97	0.42	2246668	1.1	0.05	2246667
Acid Extractable Vanadium (V)	ug/g	39	15	2246668	46	5	2246667
Acid Extractable Zinc (Zn)	ug/g	40	10	2246668	55	5	2246667
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	2246668	<0.05	0.05	2246667

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0196		GX0198		GX0199		
Sampling Date		2010/08/14 08:50		2010/08/14 13:35		2010/08/14 13:05		
COC Number		200638-0		200638-0		200638-0		
	Units	**TP5.5-LM-2**	**QC Batch**	**TP9.5-I-2**	**QC Batch**	**TP10.5-H-2**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.23	2246677	0.17	2246677	0.22	0.05	2246677
Acid Extractable Aluminum (Al)	ug/g	13000	2246668	15000	2246667	18000	50	2246668
Acid Extractable Antimony (Sb)	ug/g	<0.2	2246668	<0.2	2246667	0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	2	2246668	1	2246667	2	1	2246668
Acid Extractable Barium (Ba)	ug/g	59	2246668	61	2246667	74	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	0.3	2246668	0.3	2246667	0.5	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	<1	2246668	<1	2246667	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	<0.1	2246668	<0.1	2246667	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	21	2246668	21	2246667	25	1	2246668
Acid Extractable Cobalt (Co)	ug/g	8.0	2246668	8.7	2246667	12	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	10	2246668	13	2246667	14	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	24000	2246668	23000	2246667	31000	50	2246668
Acid Extractable Lead (Pb)	ug/g	7	2246668	7	2246667	8	1	2246668
Acid Extractable Manganese (Mn)	ug/g	280	2246668	350	2246667	480	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2246668	0.5	2246667	0.7	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	12	2246668	12	2246667	15	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	2246668	<0.5	2246667	<0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	2246668	<0.2	2246667	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	8	2246668	6	2246667	9	1	2246668
Acid Extractable Thallium (Tl)	ug/g	0.38	2246668	0.42	2246667	0.47	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	2246668	<5	2246667	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	1.1	2246668	1.3	2246667	1.4	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	47	2246668	45	2246667	52	5	2246668
Acid Extractable Zinc (Zn)	ug/g	47	2246668	47	2246667	56	5	2246668
Acid Extractable Mercury (Hg)	ug/g	<0.05	2246668	0.06	2246667	<0.05	0.05	2246668

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0200	GX0204	GX0204	GX0205		
Sampling Date		2010/08/14 08:50	2010/08/14 14:00	2010/08/14 14:00	2010/08/14 14:50		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP6.5-LM-2**	**TP9-CD-2**	**TP9-CD-2 Lab-Dup**	**TPDUMP4-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.20	0.12		0.29	0.05	2246677
Acid Extractable Aluminum (Al)	ug/g	5900	4800	4800	2100	50	2246668
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	1	<1	<1	<1	1	2246668
Acid Extractable Barium (Ba)	ug/g	28	18	18	12	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	12	7	7	6	1	2246668
Acid Extractable Cobalt (Co)	ug/g	4.1	2.4	2.4	1.8	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	6.0	5.8	5.9	1.8	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	17000	8700	8900	8500	50	2246668
Acid Extractable Lead (Pb)	ug/g	5	4	3	2	1	2246668
Acid Extractable Manganese (Mn)	ug/g	160	72	71	62	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	6.3	4.1	4.1	2.5	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	8	4	4	3	1	2246668
Acid Extractable Thallium (Tl)	ug/g	0.18	0.10	0.10	0.07	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	0.76	0.52	0.56	0.39	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	30	17	18	16	5	2246668
Acid Extractable Zinc (Zn)	ug/g	23	34	33	10	5	2246668
Acid Extractable Mercury (Hg)	ug/g	<0.05	0.07	<0.05	0.05	0.05	2246668

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0206		GX0207		GX0208		
Sampling Date		2010/08/14 15:35		2010/08/14 16:10		2010/08/14 10:50		
COC Number		200638-0		200638-0		200638-0		
	Units	**TPDUMP2-3**	**QC Batch**	**TPDUMP1-1**	**QC Batch**	**DUP H**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.07	2246677	0.06	2246677	0.07	0.05	2246677
Acid Extractable Aluminum (Al)	ug/g	3600	2246668	7300	2246667	1500	50	2246668
Acid Extractable Antimony (Sb)	ug/g	<0.2	2246668	<0.2	2246667	<0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	<1	2246668	1	2246667	<1	1	2246668
Acid Extractable Barium (Ba)	ug/g	20	2246668	42	2246667	8.1	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	<0.2	2246668	<0.2	2246667	<0.2	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	<1	2246668	<1	2246667	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	<0.1	2246668	0.1	2246667	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	9	2246668	13	2246667	5	1	2246668
Acid Extractable Cobalt (Co)	ug/g	3.0	2246668	6.1	2246667	0.9	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	3.8	2246668	10	2246667	1.8	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	12000	2246668	19000	2246667	7500	50	2246668
Acid Extractable Lead (Pb)	ug/g	4	2246668	24	2246667	2	1	2246668
Acid Extractable Manganese (Mn)	ug/g	120	2246668	250	2246667	36	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	2246668	<0.5	2246667	2.3	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	4.4	2246668	8.0	2246667	1.7	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	2246668	<0.5	2246667	<0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	2246668	<0.2	2246667	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	5	2246668	9	2246667	2	1	2246668
Acid Extractable Thallium (Tl)	ug/g	0.13	2246668	0.23	2246667	<0.05	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	2246668	<5	2246667	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	0.62	2246668	0.95	2246667	0.41	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	23	2246668	31	2246667	14	5	2246668
Acid Extractable Zinc (Zn)	ug/g	17	2246668	48	2246667	9	5	2246668
Acid Extractable Mercury (Hg)	ug/g	<0.05	2246668	0.30	2246667	0.08	0.05	2246668

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0209	GX0210	GX0211	GX0213		
Sampling Date		2010/08/14 14:50	2010/08/14 08:30	2010/08/13 15:50	2010/08/13 10:35		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**DUP I**	**DUP J**	**TP2.5-NO-2**	**TP6.5-NO-2**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.24	0.23	0.51	0.21	0.05	2246677
Acid Extractable Aluminum (Al)	ug/g	9900	12000	12000	14000	50	2246668
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	0.3	<0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	<1	1	2	2	1	2246668
Acid Extractable Barium (Ba)	ug/g	40	51	51	64	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	0.2	0.2	0.3	0.2	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	<1	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	<0.1	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	15	18	16	23	1	2246668
Acid Extractable Cobalt (Co)	ug/g	7.0	7.0	6.8	8.3	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	9.2	9.8	39	10	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	17000	23000	23000	27000	50	2246668
Acid Extractable Lead (Pb)	ug/g	5	7	37	8	1	2246668
Acid Extractable Manganese (Mn)	ug/g	240	270	240	310	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.8	<0.5	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	8.1	11	9.8	13	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	<0.5	<0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	<0.2	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	5	10	13	10	1	2246668
Acid Extractable Thallium (Tl)	ug/g	0.24	0.31	0.26	0.39	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	<5	<5	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	1.0	1.1	0.92	1.1	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	34	39	35	48	5	2246668
Acid Extractable Zinc (Zn)	ug/g	29	42	57	49	5	2246668
Acid Extractable Mercury (Hg)	ug/g	0.07	<0.05	0.13	<0.05	0.05	2246668

RDL = Reportable Detection Limit
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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 #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0215	GX0218		GX0222		
Sampling Date		2010/08/13 10:10	2010/08/13 14:28		2010/08/13 11:00		
COC Number		200638-0	200638-0		200638-0		
	Units	**TP7.5-NO-2**	**TP4.5-MN-2**	**RDL**	**TP7-MN-1**	**RDL**	**QC Batch**
Metals							
Hot Water Ext. Boron (B)	ug/g	0.32	0.25	0.05	3.4	0.05	2246677
Acid Extractable Aluminum (Al)	ug/g	16000	14000	50	340000	5000	2246668
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	0.2	<0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	2	2	1	<1	1	2246668
Acid Extractable Barium (Ba)	ug/g	69	59	0.5	1.8	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	0.5	0.3	0.2	<0.2	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	1	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	0.1	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	25	21	1	2	1	2246668
Acid Extractable Cobalt (Co)	ug/g	8.9	8.4	0.1	0.3	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	14	9.4	0.5	10	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	27000	25000	50	1100	50	2246668
Acid Extractable Lead (Pb)	ug/g	8	7	1	5	1	2246668
Acid Extractable Manganese (Mn)	ug/g	370	310	1	17	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.5	<0.5	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	14	12	0.5	6.3	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	0.5	<0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	12	9	1	16	1	2246668
Acid Extractable Thallium (Tl)	ug/g	0.45	0.37	0.05	0.05	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	<5	5	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	1.2	0.83	0.05	0.34	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	52	44	5	9	5	2246668
Acid Extractable Zinc (Zn)	ug/g	59	48	5	58	5	2246668
Acid Extractable Mercury (Hg)	ug/g	0.10	0.06	0.05	<0.05	0.05	2246668

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
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Stantec Consulting Ltd
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ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0223			GX0224		GX0225		
Sampling Date		2010/08/13 11:05			2010/08/13 11:10		2010/08/13 11:15		
COC Number		200638-0			200638-0		200638-0		
	Units	**TP7-MN-2**	**RDL**	**QC Batch**	**TP7-MN-3**	**RDL**	**TP7-MN-4**	**RDL**	**QC Batch**
Metals									
Hot Water Ext. Boron (B)	ug/g	2.1	0.05	2246677	1.3	0.05	0.58	0.05	2249975
Acid Extractable Aluminum (Al)	ug/g	340000	5000	2246667	100000	500	18000	50	2246668
Acid Extractable Antimony (Sb)	ug/g	<0.2	0.2	2246667	<0.2	0.2	<0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	1	1	2246667	1	1	1	1	2246668
Acid Extractable Barium (Ba)	ug/g	4.6	0.5	2246667	41	0.5	62	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2246667	<0.2	0.2	0.3	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	<1	1	2246667	<1	1	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	<0.1	0.1	2246667	<0.1	0.1	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	4	1	2246667	14	1	18	1	2246668
Acid Extractable Cobalt (Co)	ug/g	0.6	0.1	2246667	4.6	0.1	7.5	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	20	0.5	2246667	12	0.5	4.8	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	1600	50	2246667	16000	50	24000	50	2246668
Acid Extractable Lead (Pb)	ug/g	5	1	2246667	12	1	7	1	2246668
Acid Extractable Manganese (Mn)	ug/g	40	1	2246667	520	1	560	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	2246667	<0.5	0.5	<0.5	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	3.8	0.5	2246667	7.6	0.5	9.2	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	2246667	<0.5	0.5	<0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2246667	<0.2	0.2	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	9	1	2246667	9	1	11	1	2246668
Acid Extractable Thallium (Tl)	ug/g	<0.05	0.05	2246667	0.24	0.05	0.36	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	5	2246667	<5	5	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	0.60	0.05	2246667	0.90	0.05	0.65	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	7	5	2246667	24	5	31	5	2246668
Acid Extractable Zinc (Zn)	ug/g	31	5	2246667	65	5	44	5	2246668
Acid Extractable Mercury (Hg)	ug/g	0.13	0.05	2246667	<0.05	0.05	<0.05	0.05	2246668

RDL = Reportable Detection Limit
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Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0226	GX0226			GX0229		
Sampling Date		2010/08/13 11:20	2010/08/13 11:20			2010/08/13 07:55		
COC Number		200638-0	200638-0			200638-0		
	Units	**TP7-MN-5**	**TP7-MN-5 Lab-Dup**	**RDL**	**QC Batch**	**TP7.5-MN-2**	**RDL**	**QC Batch**
Metals								
Hot Water Ext. Boron (B)	ug/g	0.79		0.05	2249975	0.12	0.05	2246853
Acid Extractable Aluminum (Al)	ug/g	22000	23000	500	2246667	11000	50	2246667
Acid Extractable Antimony (Sb)	ug/g	<0.2	<0.2	0.2	2246667	<0.2	0.2	2246667
Acid Extractable Arsenic (As)	ug/g	<1	1	1	2246667	2	1	2246667
Acid Extractable Barium (Ba)	ug/g	70	69	0.5	2246667	43	0.5	2246667
Acid Extractable Beryllium (Be)	ug/g	0.2	0.4	0.2	2246667	0.2	0.2	2246667
Acid Extractable Bismuth (Bi)	ug/g	<1	<1	1	2246667	<1	1	2246667
Acid Extractable Cadmium (Cd)	ug/g	<0.1	<0.1	0.1	2246667	<0.1	0.1	2246667
Acid Extractable Chromium (Cr)	ug/g	19	19	1	2246667	15	1	2246667
Acid Extractable Cobalt (Co)	ug/g	7.9	7.6	0.1	2246667	5.6	0.1	2246667
Acid Extractable Copper (Cu)	ug/g	5.6	5.8	0.5	2246667	7.6	0.5	2246667
Acid Extractable Iron (Fe)	ug/g	29000	30000	50	2246667	18000	50	2246667
Acid Extractable Lead (Pb)	ug/g	7	7	1	2246667	6	1	2246667
Acid Extractable Manganese (Mn)	ug/g	520	490	1	2246667	200	1	2246667
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	<0.5	0.5	2246667	<0.5	0.5	2246667
Acid Extractable Nickel (Ni)	ug/g	9.7	9.6	0.5	2246667	8.4	0.5	2246667
Acid Extractable Selenium (Se)	ug/g	<0.5	<0.5	0.5	2246667	<0.5	0.5	2246667
Acid Extractable Silver (Ag)	ug/g	<0.2	<0.2	0.2	2246667	<0.2	0.2	2246667
Acid Extractable Strontium (Sr)	ug/g	12	12	1	2246667	7	1	2246667
Acid Extractable Thallium (Tl)	ug/g	0.35	0.33	0.05	2246667	0.27	0.05	2246667
Acid Extractable Tin (Sn)	ug/g	<5	<5	5	2246667	<5	5	2246667
Acid Extractable Uranium (U)	ug/g	1.1	1.1	0.05	2246667	0.97	0.05	2246667
Acid Extractable Vanadium (V)	ug/g	32	32	5	2246667	34	5	2246667
Acid Extractable Zinc (Zn)	ug/g	46	44	5	2246667	35	5	2246667
Acid Extractable Mercury (Hg)	ug/g	<0.05	<0.05	0.05	2246667	0.17	0.05	2246667

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		GX0230			GX0240		GX0242		
Sampling Date		2010/08/13 09:15			2010/08/13 13:28		2010/08/13 10:35		
COC Number		200638-0			200638-0		200638-0		
	Units	**TP7.5-LM-1**	**RDL**	**QC Batch**	**TP6.5-MN-6**	**QC Batch**	**DUP K**	**RDL**	**QC Batch**
Metals									
Hot Water Ext. Boron (B)	ug/g	1.7	0.075	2246848	0.68	2249975	0.18	0.05	2246853
Acid Extractable Aluminum (Al)	ug/g	23000	500	2246667	11000	2246668	14000	50	2246668
Acid Extractable Antimony (Sb)	ug/g	0.5	0.2	2246667	<0.2	2246668	0.2	0.2	2246668
Acid Extractable Arsenic (As)	ug/g	2	1	2246667	2	2246668	2	1	2246668
Acid Extractable Barium (Ba)	ug/g	48	0.5	2246667	44	2246668	64	0.5	2246668
Acid Extractable Beryllium (Be)	ug/g	<0.2	0.2	2246667	<0.2	2246668	0.2	0.2	2246668
Acid Extractable Bismuth (Bi)	ug/g	2	1	2246667	<1	2246668	<1	1	2246668
Acid Extractable Cadmium (Cd)	ug/g	0.4	0.1	2246667	<0.1	2246668	<0.1	0.1	2246668
Acid Extractable Chromium (Cr)	ug/g	15	1	2246667	16	2246668	23	1	2246668
Acid Extractable Cobalt (Co)	ug/g	5.7	0.1	2246667	6.2	2246668	8.4	0.1	2246668
Acid Extractable Copper (Cu)	ug/g	55	0.5	2246667	10	2246668	10	0.5	2246668
Acid Extractable Iron (Fe)	ug/g	16000	50	2246667	21000	2246668	25000	50	2246668
Acid Extractable Lead (Pb)	ug/g	140	1	2246667	5	2246668	8	1	2246668
Acid Extractable Manganese (Mn)	ug/g	480	1	2246667	240	2246668	270	1	2246668
Acid Extractable Molybdenum (Mo)	ug/g	<0.5	0.5	2246667	<0.5	2246668	<0.5	0.5	2246668
Acid Extractable Nickel (Ni)	ug/g	9.1	0.5	2246667	10	2246668	13	0.5	2246668
Acid Extractable Selenium (Se)	ug/g	<0.5	0.5	2246667	<0.5	2246668	0.5	0.5	2246668
Acid Extractable Silver (Ag)	ug/g	<0.2	0.2	2246667	<0.2	2246668	<0.2	0.2	2246668
Acid Extractable Strontium (Sr)	ug/g	20	1	2246667	10	2246668	9	1	2246668
Acid Extractable Thallium (Tl)	ug/g	0.21	0.05	2246667	0.28	2246668	0.40	0.05	2246668
Acid Extractable Tin (Sn)	ug/g	<5	5	2246667	<5	2246668	<5	5	2246668
Acid Extractable Uranium (U)	ug/g	0.75	0.05	2246667	1.6	2246668	1.2	0.05	2246668
Acid Extractable Vanadium (V)	ug/g	28	5	2246667	35	2246668	48	5	2246668
Acid Extractable Zinc (Zn)	ug/g	120	5	2246667	40	2246668	50	5	2246668
Acid Extractable Mercury (Hg)	ug/g	0.14	0.05	2246667	0.10	2246668	0.06	0.05	2246668

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0190	GX0190	GX0192	GX0193		
Sampling Date		2010/08/14 08:35	2010/08/14 08:35	2010/08/14 10:55	2010/08/14 10:20		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP 4.5-LM-3**	**TP 4.5-LM-3 Lab-Dup**	**TP 3.5-KL-3**	**TP 4.5-KL-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2242298
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2242298
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2242298
o-Xylene	ug/g	<0.02	<0.02	<0.02	0.03	0.02	2242298
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2242298
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2242298
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	1300	<10	10	2242707
F3 (C16-C34 Hydrocarbons)	ug/g	44	59	210	<10	10	2242707
F4 (C34-C50 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2242707
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2242707
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	103	103	96	102		2242298
4-Bromofluorobenzene	%	102	102	103	102		2242298
D10-Ethylbenzene	%	101	95	91	92		2242298
D4-1,2-Dichloroethane	%	94	95	92	94		2242298
o-Terphenyl	%	103	93	98	91		2242707

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QC Batch = Quality Control Batch

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Stantec Consulting Ltd
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Your P.O. #: 16300NR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0194	GX0195	GX0196	GX0197		
Sampling Date		2010/08/14 09:30	2010/08/14 14:20	2010/08/14 08:50	2010/08/14 09:45		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP7.5-KL3**	**TP9-C-2**	**TP5.5-LM-2**	**TP6.5-KL-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2242298
Toluene	ug/g	0.22	<0.02	<0.02	<0.02	0.02	2242298
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2242298
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2242298
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2242298
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2242298
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	19	<10	<10	<10	10	2242707
F3 (C16-C34 Hydrocarbons)	ug/g	120	<10	39	73	10	2242707
F4 (C34-C50 Hydrocarbons)	ug/g	37	<10	<10	17	10	2242707
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2242707
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102	101	103	103		2242298
4-Bromofluorobenzene	%	102	101	102	102		2242298
D10-Ethylbenzene	%	94	91	97	103		2242298
D4-1,2-Dichloroethane	%	96	95	93	94		2242298
o-Terphenyl	%	103	94	95	92		2242707

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0198	GX0199	GX0200	GX0201		
Sampling Date		2010/08/14 13:35	2010/08/14 13:05	2010/08/14 08:50	2010/08/14 11:25		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP9.5-I-2**	**TP10.5-H-2**	**TP6.5-LM-2**	**TP5.5-JK-3**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2242298
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2242298
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2242298
o-Xylene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2242298
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
Total Xylenes	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
F1 (C6-C10)	ug/g	<10	<10	<10	<10	10	2242298
F1 (C6-C10) - BTEX	ug/g	<10	<10	<10	<10	10	2242298
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	<10	<10	10	2242707
F3 (C16-C34 Hydrocarbons)	ug/g	60	100	<10	<10	10	2242707
F4 (C34-C50 Hydrocarbons)	ug/g	13	35	<10	<10	10	2242707
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2242707
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	102	102	102	102		2242298
4-Bromofluorobenzene	%	102	103	102	103		2242298
D10-Ethylbenzene	%	105	95	93	94		2242298
D4-1,2-Dichloroethane	%	94	95	94	94		2242298
o-Terphenyl	%	95	100	96	97		2242707

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0202	GX0203	GX0204	GX0205		
Sampling Date		2010/08/14 10:00	2010/08/14 11:10	2010/08/14 14:00	2010/08/14 14:50		
COC Number		200638-0	200638-0	200638-0	200638-0		
	Units	**TP5.5-KL-3**	**TP4.5-JK-3**	**TP9-CD-2**	**TPDUMP4-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons							
Benzene	ug/g	<0.005	<0.005	<0.005	<0.005	0.005	2242298
Toluene	ug/g	<0.02	<0.02	<0.02	<0.02	0.02	2242298
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	<0.01	0.01	2242298
o-Xylene	ug/g	0.04	<0.02	<0.02	<0.02	0.02	2242298
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	<0.04	0.04	2242298
Total Xylenes	ug/g	0.04	<0.04	<0.04	<0.04	0.04	2242298
F1 (C6-C10)	ug/g	18	<10	<10	<10	10	2242298
F1 (C6-C10) - BTEX	ug/g	18	<10	<10	<10	10	2242298
F2-F4 Hydrocarbons							
F2 (C10-C16 Hydrocarbons)	ug/g	460	<10	<10	<10	10	2242707
F3 (C16-C34 Hydrocarbons)	ug/g	150	38	71	68	10	2242707
F4 (C34-C50 Hydrocarbons)	ug/g	<10	22	18	17	10	2242707
Reached Baseline at C50	ug/g	Yes	Yes	Yes	Yes		2242707
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	96	101	103	103		2242298
4-Bromofluorobenzene	%	105	101	101	102		2242298
D10-Ethylbenzene	%	94	91	93	103		2242298
D4-1,2-Dichloroethane	%	92	94	95	94		2242298
o-Terphenyl	%	99	91	99	105		2242707

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0206	GX0206		GX0211	GX0212		
Sampling Date		2010/08/14 15:35	2010/08/14 15:35		2010/08/13 15:50	2010/08/13 16:10		
COC Number		200638-0	200638-0		200638-0	200638-0		
	Units	**TPDUMP2-3**	**TPDUMP2-3 Lab-Dup**	**QC Batch**	**TP2.5-NO-2**	**TP3.5-NO-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	<0.005	2243865	<0.005	<0.005	0.005	2242298
Toluene	ug/g	<0.02	<0.02	2243865	<0.02	<0.02	0.02	2242298
Ethylbenzene	ug/g	<0.01	<0.01	2243865	<0.01	<0.01	0.01	2242298
o-Xylene	ug/g	<0.02	<0.02	2243865	<0.02	<0.02	0.02	2242298
p+m-Xylene	ug/g	<0.04	<0.04	2243865	<0.04	<0.04	0.04	2242298
Total Xylenes	ug/g	<0.04	<0.04	2243865	<0.04	<0.04	0.04	2242298
F1 (C6-C10)	ug/g	<10	<10	2243865	<10	<10	10	2242298
F1 (C6-C10) - BTEX	ug/g	<10	<10	2243865	<10	<10	10	2242298
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10		2243395	<10	<10	10	2242707
F3 (C16-C34 Hydrocarbons)	ug/g	<10		2243395	120	84	10	2242707
F4 (C34-C50 Hydrocarbons)	ug/g	<10		2243395	49	37	10	2242707
Reached Baseline at C50	ug/g	Yes		2243395	Yes	Yes		2242707
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	104	104	2243865	102	102		2242298
4-Bromofluorobenzene	%	102	102	2243865	102	102		2242298
D10-Ethylbenzene	%	98	99	2243865	96	105		2242298
D4-1,2-Dichloroethane	%	94	95	2243865	94	95		2242298
o-Terphenyl	%	106		2243395	101	96		2242707

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0214	GX0215	GX0216		GX0217		
Sampling Date		2010/08/13 10:40	2010/08/13 10:10	2010/08/13 15:30		2010/08/13 14:56		
COC Number		200638-0	200638-0	200638-0		200638-0		
	Units	**TP6.5-NO-3**	**TP7.5-NO-2**	**TP2.5-MN-3**	**QC Batch**	**TP3.5-MN-2**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	<0.005	<0.005	2242298	<0.005	0.005	2243865
Toluene	ug/g	<0.02	<0.02	<0.02	2242298	<0.02	0.02	2243865
Ethylbenzene	ug/g	<0.01	<0.01	<0.01	2242298	<0.01	0.01	2243865
o-Xylene	ug/g	<0.02	<0.02	<0.02	2242298	<0.02	0.02	2243865
p+m-Xylene	ug/g	<0.04	<0.04	<0.04	2242298	<0.04	0.04	2243865
Total Xylenes	ug/g	<0.04	<0.04	<0.04	2242298	<0.04	0.04	2243865
F1 (C6-C10)	ug/g	<10	<10	140	2242298	<10	10	2243865
F1 (C6-C10) - BTEX	ug/g	<10	<10	140	2242298	<10	10	2243865
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	<10	1500	2242707	<10	10	2243395
F3 (C16-C34 Hydrocarbons)	ug/g	75	120	130	2242707	<10	10	2243395
F4 (C34-C50 Hydrocarbons)	ug/g	35	43	<10	2242707	<10	10	2243395
Reached Baseline at C50	ug/g	Yes	Yes	Yes	2242707	Yes		2243395
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	103	102	93	2242298	103		2243865
4-Bromofluorobenzene	%	101	102	106	2242298	102		2243865
D10-Ethylbenzene	%	96	99	100	2242298	98		2243865
D4-1,2-Dichloroethane	%	94	94	91	2242298	94		2243865
o-Terphenyl	%	91	99	98	2242707	105		2243395

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0218		GX0219	GX0219	GX0221		
Sampling Date		2010/08/13 14:28		2010/08/13 14:30	2010/08/13 14:30	2010/08/13 13:00		
COC Number		200638-0		200638-0	200638-0	200638-0		
	Units	**TP4.5-MN-2**	**QC Batch**	**TP 4.5-MN-3**	**TP 4.5-MN-3 Lab-Dup**	**TP6.5-MN-7**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g		2243865	<0.005		<0.005	0.005	2243865
Toluene	ug/g		2243865	<0.02		<0.02	0.02	2243865
Ethylbenzene	ug/g		2243865	<0.01		<0.01	0.01	2243865
o-Xylene	ug/g		2243865	<0.02		<0.02	0.02	2243865
p+m-Xylene	ug/g		2243865	<0.04		<0.04	0.04	2243865
Total Xylenes	ug/g		2243865	<0.04		<0.04	0.04	2243865
F1 (C6-C10)	ug/g		2243865	<10		<10	10	2243865
F1 (C6-C10) - BTEX	ug/g		2243865	<10		<10	10	2243865
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	1300	2261080	20	28	74	10	2243395
F3 (C16-C34 Hydrocarbons)	ug/g	260	2261080	67	76	14	10	2243395
F4 (C34-C50 Hydrocarbons)	ug/g	39	2261080	26	25	<10	10	2243395
Reached Baseline at C50	ug/g	Yes	2261080	Yes	Yes	Yes		2243395
Surrogate Recovery (%)								
1,4-Difluorobenzene	%			102		103		2243865
4-Bromofluorobenzene	%			103		102		2243865
D10-Ethylbenzene	%			104		105		2243865
D4-1,2-Dichloroethane	%			94		94		2243865
o-Terphenyl	%	105	2261080	114	111	104		2243395

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PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0226		GX0230		GX0234		
Sampling Date		2010/08/13 11:20		2010/08/13 09:15		2010/08/13 14:12		
COC Number		200638-0		200638-0		200638-0		
	Units	**TP7-MN-5**	**RDL**	**TP7.5-LM-1**	**RDL**	**TP5.5-MN-5**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons								
Benzene	ug/g	<0.005	0.005	<0.01	0.01	<0.005	0.005	2243865
Toluene	ug/g	<0.02	0.02	<0.04	0.04	0.46	0.02	2243865
Ethylbenzene	ug/g	<0.01	0.01	<0.02	0.02	0.71	0.01	2243865
o-Xylene	ug/g	<0.02	0.02	<0.04	0.04	2.7	0.02	2243865
p+m-Xylene	ug/g	<0.04	0.04	<0.08	0.08	4.7	0.04	2243865
Total Xylenes	ug/g	<0.04	0.04	<0.08	0.08	7.4	0.04	2243865
F1 (C6-C10)	ug/g	<10	10	<20	20	210	10	2243865
F1 (C6-C10) - BTEX	ug/g	<10	10	<20	20	200	10	2243865
F2-F4 Hydrocarbons								
F2 (C10-C16 Hydrocarbons)	ug/g	<10	10	<20	20	3800	10	2243395
F3 (C16-C34 Hydrocarbons)	ug/g	120	10	99	20	340	10	2243395
F4 (C34-C50 Hydrocarbons)	ug/g	10	10	<20	20	11	10	2243395
Reached Baseline at C50	ug/g	Yes		Yes		Yes		2243395
Surrogate Recovery (%)								
1,4-Difluorobenzene	%	103		99		97		2243865
4-Bromofluorobenzene	%	102		103		104		2243865
D10-Ethylbenzene	%	106		96		116		2243865
D4-1,2-Dichloroethane	%	93		94		92		2243865
o-Terphenyl	%	104		106		108		2243395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B0B4037
Report Date: 2010/09/15

Stantec Consulting Ltd
Client Project #: 1236000017
Project name: CLYDE RIVER PHASE III ESA
Your P.O. #: 16300NR

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		GX0236		GX0241		
Sampling Date		2010/08/13 13:06		2010/08/13 16:50		
COC Number		200638-0		200638-0		
	Units	**TP6.5-MN-2**	**QC Batch**	**TP3.5-LM-4**	**RDL**	**QC Batch**
BTEX & F1 Hydrocarbons						
Benzene	ug/g		2243865	<0.005	0.005	2243865
Toluene	ug/g		2243865	<0.02	0.02	2243865
Ethylbenzene	ug/g		2243865	<0.01	0.01	2243865
o-Xylene	ug/g		2243865	<0.02	0.02	2243865
p+m-Xylene	ug/g		2243865	<0.04	0.04	2243865
Total Xylenes	ug/g		2243865	<0.04	0.04	2243865
F1 (C6-C10)	ug/g		2243865	<10	10	2243865
F1 (C6-C10) - BTEX	ug/g		2243865	<10	10	2243865
F2-F4 Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	ug/g	11000	2261080	<10	10	2243395
F3 (C16-C34 Hydrocarbons)	ug/g	1200	2261080	<10	10	2243395
F4 (C34-C50 Hydrocarbons)	ug/g	<10	2261080	<10	10	2243395
Reached Baseline at C50	ug/g	Yes	2261080	Yes		2243395
Surrogate Recovery (%)						
1,4-Difluorobenzene	%			105		2243865
4-Bromofluorobenzene	%			101		2243865
D10-Ethylbenzene	%			106		2243865
D4-1,2-Dichloroethane	%			94		2243865
o-Terphenyl	%	103	2261080	107		2243395

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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GENERAL COMMENTS

F2-F4 Analysis.
Analysis was performed past holding time for samples GX0318 and GX0236 . This may increase the variability associated with these results.

Sample GX0230-01: F1/BTEX and F2-F4 analysis:
Detection limits were adjusted for high moisture content.

B-HOT-EXTR: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

Results relate only to the items tested.

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Quality Assurance Report

Maxxam Job Number: MB0B4037

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2242298	LRA	Matrix Spike						
		[GX0190-01]	1,4-Difluorobenzene	2010/08/24		101	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		102	%	60 - 140
			D10-Ethylbenzene	2010/08/24		95	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		94	%	60 - 140
			Benzene	2010/08/24		84	%	60 - 140
			Toluene	2010/08/24		89	%	60 - 140
			Ethylbenzene	2010/08/24		92	%	60 - 140
			o-Xylene	2010/08/24		94	%	60 - 140
			p+m-Xylene	2010/08/24		93	%	60 - 140
			F1 (C6-C10)	2010/08/24		104	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/24		102	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		102	%	60 - 140
			D10-Ethylbenzene	2010/08/24		98	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		94	%	60 - 140
			Benzene	2010/08/24		86	%	60 - 140
			Toluene	2010/08/24		91	%	60 - 140
			Ethylbenzene	2010/08/24		95	%	60 - 140
			o-Xylene	2010/08/24		98	%	60 - 140
			p+m-Xylene	2010/08/24		96	%	60 - 140
			F1 (C6-C10)	2010/08/24		94	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/24		102	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		101	%	60 - 140
			D10-Ethylbenzene	2010/08/24		97	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		95	%	60 - 140
			Benzene	2010/08/24	<0.005		ug/g	
			Toluene	2010/08/24	<0.02		ug/g	
			Ethylbenzene	2010/08/24	<0.01		ug/g	
			o-Xylene	2010/08/24	<0.02		ug/g	
			p+m-Xylene	2010/08/24	<0.04		ug/g	
			Total Xylenes	2010/08/24	<0.04		ug/g	
			F1 (C6-C10)	2010/08/24	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/24	<10		ug/g	
		RPD [GX0190-01]	Benzene	2010/08/24	NC		%	50
			Toluene	2010/08/24	NC		%	50
			Ethylbenzene	2010/08/24	NC		%	50
			o-Xylene	2010/08/24	NC		%	50
			p+m-Xylene	2010/08/24	NC		%	50
			Total Xylenes	2010/08/24	NC		%	50
			F1 (C6-C10)	2010/08/24	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/24	NC		%	50
2242707	DPO	Matrix Spike						
		[GX0190-01]	o-Terphenyl	2010/08/23		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		81	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/23		81	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/23		81	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/23		94	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		81	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/23		81	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/23		81	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/24		103	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/24	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/24	<10		ug/g	
		RPD [GX0190-01]	F2 (C10-C16 Hydrocarbons)	2010/08/25	NC		%	50

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Quality Assurance Report (Continued)

Maxxam Job Number: MB0B4037

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2242707	DPO	RPD [GX0190-01]	F3 (C16-C34 Hydrocarbons)	2010/08/25	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/25	NC		%	50
2243395	DPO	Matrix Spike [GX0219-01]	o-Terphenyl	2010/08/23		124	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		NC	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/23		NC	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/23		NC	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/08/23		115	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/23		95	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/08/23		95	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/08/23		95	%	60 - 130
		Method Blank	o-Terphenyl	2010/08/24		107	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/08/24	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/08/24	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/08/24	<10		ug/g	
		RPD [GX0219-01]	F2 (C10-C16 Hydrocarbons)	2010/08/25	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/08/25	12.1		%	50
			F4 (C34-C50 Hydrocarbons)	2010/08/25	NC		%	50
2243865	LRA	Matrix Spike [GX0206-02]	1,4-Difluorobenzene	2010/08/25		100	%	60 - 140
			4-Bromofluorobenzene	2010/08/25		102	%	60 - 140
			D10-Ethylbenzene	2010/08/25		99	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/25		93	%	60 - 140
			Benzene	2010/08/25		83	%	60 - 140
			Toluene	2010/08/25		92	%	60 - 140
			Ethylbenzene	2010/08/25		94	%	60 - 140
			o-Xylene	2010/08/25		95	%	60 - 140
			p+m-Xylene	2010/08/25		95	%	60 - 140
			F1 (C6-C10)	2010/08/25		89	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2010/08/24		104	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		102	%	60 - 140
			D10-Ethylbenzene	2010/08/24		94	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		94	%	60 - 140
			Benzene	2010/08/24		78	%	60 - 140
			Toluene	2010/08/24		84	%	60 - 140
			Ethylbenzene	2010/08/24		88	%	60 - 140
			o-Xylene	2010/08/24		91	%	60 - 140
			p+m-Xylene	2010/08/24		90	%	60 - 140
			F1 (C6-C10)	2010/08/24		98	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2010/08/24		99	%	60 - 140
			4-Bromofluorobenzene	2010/08/24		102	%	60 - 140
			D10-Ethylbenzene	2010/08/24		96	%	30 - 130
			D4-1,2-Dichloroethane	2010/08/24		93	%	60 - 140
			Benzene	2010/08/24	<0.005		ug/g	
			Toluene	2010/08/24	<0.02		ug/g	
			Ethylbenzene	2010/08/24	<0.01		ug/g	
			o-Xylene	2010/08/24	<0.02		ug/g	
			p+m-Xylene	2010/08/24	<0.04		ug/g	
			Total Xylenes	2010/08/24	<0.04		ug/g	
			F1 (C6-C10)	2010/08/24	<10		ug/g	
			F1 (C6-C10) - BTEX	2010/08/24	<10		ug/g	
		RPD [GX0206-02]	Benzene	2010/08/25	NC		%	50
			Toluene	2010/08/25	NC		%	50
			Ethylbenzene	2010/08/25	NC		%	50
			o-Xylene	2010/08/25	NC		%	50

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Quality Assurance Report (Continued)

Maxxam Job Number: MB0B4037

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2243865	LRA	RPD [GX0206-02]	p+m-Xylene	2010/08/25	NC		%	50
			Total Xylenes	2010/08/25	NC		%	50
			F1 (C6-C10)	2010/08/25	NC		%	50
			F1 (C6-C10) - BTEX	2010/08/25	NC		%	50
2245257	SAC	Matrix Spike	Chromium (VI)	2010/08/27		92	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/27		114	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/08/27		102	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/27	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/27	NC		%	25
2245261	SAC	Matrix Spike [GX0211-01]	Chromium (VI)	2010/08/27		0 (1)	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/27		98	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/08/27		99	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/27	<0.2		ug/g	
		RPD [GX0211-01]	Chromium (VI)	2010/08/27	NC		%	25
2245420	LKA	RPD [GX0225-01]	Moisture	2010/08/25	13.9		%	20
2245552	SAC	Matrix Spike	Chromium (VI)	2010/08/26		81	%	75 - 125
		QC Standard	Chromium (VI)	2010/08/26		95	%	75 - 125
		Spiked Blank	Chromium (VI)	2010/08/26		99	%	80 - 120
		Method Blank	Chromium (VI)	2010/08/26	<0.2		ug/g	
		RPD	Chromium (VI)	2010/08/26	NC		%	25
2246187	DEE	RPD [GX0192-01]	Moisture	2010/08/25	15.1		%	20
2246231	DEE	RPD	Moisture	2010/08/25	2.4		%	20
2246667	KCO	Matrix Spike [GX0226-01]	Acid Extractable Aluminum (Al)	2010/08/26		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/26		97	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/26		97	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/26		NC	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/26		99	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/26		105	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/26		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/26		100	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/26		98	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/26		99	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/26		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/26		100	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/26		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/26		100	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/26		96	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/26		100	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/26		99	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/26		101	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/26		97	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/26		101	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/26		106	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/26		NC	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/26		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/26		107	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/26		108	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/26		102	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/26		95	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/26		98	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/26		97	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/26		102	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/26		99	%	75 - 125

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QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246667 KCO	QC Standard	Acid Extractable Chromium (Cr)	2010/08/26		97	%	75 - 125
		Acid Extractable Cobalt (Co)	2010/08/26		94	%	75 - 125
		Acid Extractable Copper (Cu)	2010/08/26		96	%	75 - 125
		Acid Extractable Iron (Fe)	2010/08/26		107	%	75 - 125
		Acid Extractable Lead (Pb)	2010/08/26		100	%	75 - 125
		Acid Extractable Manganese (Mn)	2010/08/26		99	%	75 - 125
		Acid Extractable Molybdenum (Mo)	2010/08/26		100	%	75 - 125
		Acid Extractable Nickel (Ni)	2010/08/26		94	%	75 - 125
		Acid Extractable Selenium (Se)	2010/08/26		97	%	75 - 125
		Acid Extractable Silver (Ag)	2010/08/26		100	%	75 - 125
		Acid Extractable Strontium (Sr)	2010/08/26		100	%	75 - 125
		Acid Extractable Thallium (Tl)	2010/08/26		98	%	75 - 125
		Acid Extractable Tin (Sn)	2010/08/26		101	%	75 - 125
		Acid Extractable Uranium (U)	2010/08/26		104	%	75 - 125
		Acid Extractable Vanadium (V)	2010/08/26		96	%	75 - 125
		Acid Extractable Zinc (Zn)	2010/08/26		98	%	75 - 125
		Acid Extractable Mercury (Hg)	2010/08/26		101	%	75 - 125
	Method Blank	Acid Extractable Aluminum (Al)	2010/08/26	<50		ug/g	
		Acid Extractable Antimony (Sb)	2010/08/26	<0.2		ug/g	
		Acid Extractable Arsenic (As)	2010/08/26	<1		ug/g	
		Acid Extractable Barium (Ba)	2010/08/26	<0.5		ug/g	
		Acid Extractable Beryllium (Be)	2010/08/26	<0.2		ug/g	
		Acid Extractable Bismuth (Bi)	2010/08/26	<1		ug/g	
		Acid Extractable Cadmium (Cd)	2010/08/26	<0.1		ug/g	
		Acid Extractable Chromium (Cr)	2010/08/26	<1		ug/g	
		Acid Extractable Cobalt (Co)	2010/08/26	<0.1		ug/g	
		Acid Extractable Copper (Cu)	2010/08/26	<0.5		ug/g	
		Acid Extractable Iron (Fe)	2010/08/26	<50		ug/g	
		Acid Extractable Lead (Pb)	2010/08/26	<1		ug/g	
		Acid Extractable Manganese (Mn)	2010/08/26	<1		ug/g	
		Acid Extractable Molybdenum (Mo)	2010/08/26	<0.5		ug/g	
		Acid Extractable Nickel (Ni)	2010/08/26	<0.5		ug/g	
		Acid Extractable Selenium (Se)	2010/08/26	<0.5		ug/g	
		Acid Extractable Silver (Ag)	2010/08/26	<0.2		ug/g	
		Acid Extractable Strontium (Sr)	2010/08/26	<1		ug/g	
		Acid Extractable Thallium (Tl)	2010/08/26	<0.05		ug/g	
		Acid Extractable Tin (Sn)	2010/08/26	<5		ug/g	
		Acid Extractable Uranium (U)	2010/08/26	<0.05		ug/g	
		Acid Extractable Vanadium (V)	2010/08/26	<5		ug/g	
		Acid Extractable Zinc (Zn)	2010/08/26	<5		ug/g	
		Acid Extractable Mercury (Hg)	2010/08/26	<0.05		ug/g	
	RPD [GX0226-01]	Acid Extractable Aluminum (Al)	2010/08/26	3.3		%	35
		Acid Extractable Antimony (Sb)	2010/08/26	NC		%	35
		Acid Extractable Arsenic (As)	2010/08/26	NC		%	35
		Acid Extractable Barium (Ba)	2010/08/26	1.0		%	35
		Acid Extractable Beryllium (Be)	2010/08/26	NC		%	35
		Acid Extractable Bismuth (Bi)	2010/08/26	NC		%	35
		Acid Extractable Cadmium (Cd)	2010/08/26	NC		%	35
		Acid Extractable Chromium (Cr)	2010/08/26	1.5		%	35
		Acid Extractable Cobalt (Co)	2010/08/26	4.2		%	35
		Acid Extractable Copper (Cu)	2010/08/26	3.4		%	35
		Acid Extractable Iron (Fe)	2010/08/26	1.3		%	35
		Acid Extractable Lead (Pb)	2010/08/26	3.9		%	35
		Acid Extractable Manganese (Mn)	2010/08/26	7.1		%	35
		Acid Extractable Molybdenum (Mo)	2010/08/26	NC		%	35

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P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B4037

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246667	KCO	RPD [GX0226-01]	Acid Extractable Nickel (Ni)	2010/08/26	0.8		%	35
			Acid Extractable Selenium (Se)	2010/08/26	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/26	NC		%	35
			Acid Extractable Strontium (Sr)	2010/08/26	1.1		%	35
			Acid Extractable Thallium (Tl)	2010/08/26	4.8		%	35
			Acid Extractable Tin (Sn)	2010/08/26	NC		%	35
			Acid Extractable Uranium (U)	2010/08/26	1.0		%	25
			Acid Extractable Vanadium (V)	2010/08/26	0.4		%	35
			Acid Extractable Zinc (Zn)	2010/08/26	3.2		%	35
			Acid Extractable Mercury (Hg)	2010/08/26	NC		%	35
2246668	KCO	Matrix Spike [GX0204-01]	Acid Extractable Aluminum (Al)	2010/08/26		NC	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/26		97	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/26		92	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/26		96	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/26		96	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/26		99	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/26		96	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/26		92	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/26		92	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/26		94	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/26		NC	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/26		94	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/26		NC	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/26		96	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/26		92	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/26		95	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/26		95	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/26		97	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/26		92	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/26		98	%	75 - 125
			Acid Extractable Uranium (U)	2010/08/26		101	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/26		94	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/26		NC	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/26		94	%	75 - 125
		QC Standard	Acid Extractable Aluminum (Al)	2010/08/26		107	%	75 - 125
			Acid Extractable Antimony (Sb)	2010/08/26		104	%	75 - 125
			Acid Extractable Arsenic (As)	2010/08/26		97	%	75 - 125
			Acid Extractable Barium (Ba)	2010/08/26		100	%	75 - 125
			Acid Extractable Beryllium (Be)	2010/08/26		100	%	75 - 125
			Acid Extractable Bismuth (Bi)	2010/08/26		103	%	75 - 125
			Acid Extractable Cadmium (Cd)	2010/08/26		101	%	75 - 125
			Acid Extractable Chromium (Cr)	2010/08/26		97	%	75 - 125
			Acid Extractable Cobalt (Co)	2010/08/26		96	%	75 - 125
			Acid Extractable Copper (Cu)	2010/08/26		96	%	75 - 125
			Acid Extractable Iron (Fe)	2010/08/26		109	%	75 - 125
			Acid Extractable Lead (Pb)	2010/08/26		102	%	75 - 125
			Acid Extractable Manganese (Mn)	2010/08/26		100	%	75 - 125
			Acid Extractable Molybdenum (Mo)	2010/08/26		101	%	75 - 125
			Acid Extractable Nickel (Ni)	2010/08/26		97	%	75 - 125
			Acid Extractable Selenium (Se)	2010/08/26		99	%	75 - 125
			Acid Extractable Silver (Ag)	2010/08/26		102	%	75 - 125
			Acid Extractable Strontium (Sr)	2010/08/26		101	%	75 - 125
			Acid Extractable Thallium (Tl)	2010/08/26		100	%	75 - 125
			Acid Extractable Tin (Sn)	2010/08/26		101	%	75 - 125

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B4037

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246668	KCO	QC Standard	Acid Extractable Uranium (U)	2010/08/26		107	%	75 - 125
			Acid Extractable Vanadium (V)	2010/08/26		102	%	75 - 125
			Acid Extractable Zinc (Zn)	2010/08/26		99	%	75 - 125
			Acid Extractable Mercury (Hg)	2010/08/26		107	%	75 - 125
		Method Blank	Acid Extractable Aluminum (Al)	2010/08/26	<50		ug/g	
			Acid Extractable Antimony (Sb)	2010/08/26	<0.2		ug/g	
			Acid Extractable Arsenic (As)	2010/08/26	<1		ug/g	
			Acid Extractable Barium (Ba)	2010/08/26	<0.5		ug/g	
			Acid Extractable Beryllium (Be)	2010/08/26	<0.2		ug/g	
			Acid Extractable Bismuth (Bi)	2010/08/26	<1		ug/g	
			Acid Extractable Cadmium (Cd)	2010/08/26	<0.1		ug/g	
			Acid Extractable Chromium (Cr)	2010/08/26	<1		ug/g	
			Acid Extractable Cobalt (Co)	2010/08/26	<0.1		ug/g	
			Acid Extractable Copper (Cu)	2010/08/26	<0.5		ug/g	
			Acid Extractable Iron (Fe)	2010/08/26	<50		ug/g	
			Acid Extractable Lead (Pb)	2010/08/26	<1		ug/g	
			Acid Extractable Manganese (Mn)	2010/08/26	<1		ug/g	
			Acid Extractable Molybdenum (Mo)	2010/08/26	<0.5		ug/g	
			Acid Extractable Nickel (Ni)	2010/08/26	<0.5		ug/g	
			Acid Extractable Selenium (Se)	2010/08/26	<0.5		ug/g	
			Acid Extractable Silver (Ag)	2010/08/26	<0.2		ug/g	
			Acid Extractable Strontium (Sr)	2010/08/26	<1		ug/g	
			Acid Extractable Thallium (Tl)	2010/08/26	<0.05		ug/g	
			Acid Extractable Tin (Sn)	2010/08/26	<5		ug/g	
			Acid Extractable Uranium (U)	2010/08/26	<0.05		ug/g	
			Acid Extractable Vanadium (V)	2010/08/26	<5		ug/g	
			Acid Extractable Zinc (Zn)	2010/08/26	<5		ug/g	
			Acid Extractable Mercury (Hg)	2010/08/26	<0.05		ug/g	
		RPD [GX0204-01]	Acid Extractable Aluminum (Al)	2010/08/26	1.2		%	35
			Acid Extractable Antimony (Sb)	2010/08/26	NC		%	35
			Acid Extractable Arsenic (As)	2010/08/26	NC		%	35
			Acid Extractable Barium (Ba)	2010/08/26	1.3		%	35
			Acid Extractable Beryllium (Be)	2010/08/26	NC		%	35
			Acid Extractable Bismuth (Bi)	2010/08/26	NC		%	35
			Acid Extractable Cadmium (Cd)	2010/08/26	NC		%	35
			Acid Extractable Chromium (Cr)	2010/08/26	1.2		%	35
			Acid Extractable Cobalt (Co)	2010/08/26	1.6		%	35
			Acid Extractable Copper (Cu)	2010/08/26	1.8		%	35
			Acid Extractable Iron (Fe)	2010/08/26	2.0		%	35
			Acid Extractable Lead (Pb)	2010/08/26	NC		%	35
			Acid Extractable Manganese (Mn)	2010/08/26	1.3		%	35
			Acid Extractable Molybdenum (Mo)	2010/08/26	NC		%	35
			Acid Extractable Nickel (Ni)	2010/08/26	0.8		%	35
			Acid Extractable Selenium (Se)	2010/08/26	NC		%	35
			Acid Extractable Silver (Ag)	2010/08/26	NC		%	35
			Acid Extractable Strontium (Sr)	2010/08/26	NC		%	35
			Acid Extractable Thallium (Tl)	2010/08/26	NC		%	35
			Acid Extractable Tin (Sn)	2010/08/26	NC		%	35
			Acid Extractable Uranium (U)	2010/08/26	7.4		%	25
			Acid Extractable Vanadium (V)	2010/08/26	NC		%	35
			Acid Extractable Zinc (Zn)	2010/08/26	2.6		%	35
			Acid Extractable Mercury (Hg)	2010/08/26	NC		%	35
2246677	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/27		100	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/27	<0.05		ug/g	
2246848	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/27		101	%	85 - 115

Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #: 16300NR
Project name: CLYDE RIVER PHASE III ESA

Quality Assurance Report (Continued)

Maxxam Job Number: MB0B4037

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2246848	AFZ	Method Blank	Hot Water Ext. Boron (B)	2010/08/27	<0.05		ug/g	
2246853	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/27		101	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/27	<0.05		ug/g	
2249975	AFZ	QC Standard	Hot Water Ext. Boron (B)	2010/08/30		103	%	85 - 115
		Method Blank	Hot Water Ext. Boron (B)	2010/08/30	<0.05		ug/g	
2261080	JJE	Matrix Spike	o-Terphenyl	2010/09/10		98	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/10		98	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/09/10		98	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/09/10		98	%	60 - 130
		Spiked Blank	o-Terphenyl	2010/09/10		95	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/10		91	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2010/09/10		91	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2010/09/10		91	%	60 - 130
		Method Blank	o-Terphenyl	2010/09/10		99	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2010/09/10	<10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2010/09/10	<10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2010/09/10	<10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2010/09/10	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2010/09/10	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2010/09/10	NC		%	50
2265296	GKL	RPD [GX0236-01]	Moisture	2010/09/14	6.8		%	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 blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 matrix spike recovery was below the lower control limit. This may be due in part to the reducing environment of the sample.

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 Analytics

Maxxam Analytics International Corporation o/a Maxxam Analytics
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IMMEDIATE TEST

CHAIN OF CUSTO

20-Aug-10 14:19
RENATA SPENA
B0B4037
MHO ENV-830

Page 1 of 7

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:	
Company Name:	#24125 Stantec Consulting Ltd	Company Name:		Quotation #:	B05402
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017
Address:	PO Box 1680	Address:	same	Project #:	1236000017 ~~Surface water~~
	Yellowknife NT X1A2P3			Project Name:	Clyde River Phase III ESA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:	
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	MNIMR/PC/JS/RM

BOTTLE ORDER #: 200638

CHAIN OF CUSTODY #: C#200638-01-01

PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify) CCMEGWS — Report Criteria on C of A? ☐

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required:
Rush Confirmation Number: (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 BTEX/F1-F4	Metals-CCME/ABST	PAHs	# of Bottles	Comments
1		TP4.5-LM-2	Aug 14/10	0830	soil				✓		1	
2		TP4.5-LM-3	Aug 14/10	0835	soil			✓			2	
3		TP3.5-KL-2	Aug 14/10	1050	soil				✓		1	
4		TP3.5-KL-3	Aug 14/10	1055	soil			✓		✓	3	
5		TP4.5-KL-3	Aug 14/10	1020	soil			✓			2	
6		TP7.5-KL-3	Aug 14/10	0930	soil			✓			1 ~~2~~ 3	
7		TP9-C-2	Aug 14/10	1420	soil			✓	✓		3	
8		TP5.5-LM-2	Aug 14/10	0850	soil			✓	✓		4	on ice
9		TP6.5-KL-3	Aug 14/10	0945	soil			✓			2	G.S. 18 7.10.13 12.B.13
10		TP9.5-I-2	Aug 14/10	1335	soil			✓	✓		3	Ce 3.10

REC'D IN OTTAWA

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact: Yes / No / N/A
Patricia Coyne Patricia Coyne	2010/08/14	2100	Jessica F. 1130 HHRMS+H1	10/08/19 10/08/20	14:19 09:43		☐	6.6 3.1C 6.5 1.6C	Particulate Present: Yes / No / N/A

* 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 Analytics International Corporation o/a Maxxam Analytics
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5779 www.maxxamanalytics.com

IMMEDIATE TEST

CHAIN OF CUSTODY RECORD

Page 2 of 7

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company:	#24125 Stantec Consulting Ltd	Company Name:	same	Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200638
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	1236000017		
Address:	PO Box 1680 Yellowknife NT X1A2P3	Address:		Project #:	1236000017 Surface water	CHAIN OF CUSTODY #: C#200538-15-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Project Name:	Clyde River Phase III ESA		
Email:	Patricia.Coyne@stantec.com	Email:		Site #:			
				Sampled By:	PC/MN/MR/JS		

REGULATORY CRITERIA:
☐ MISA Reg. 153/04 Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
☐ Reg. 558 Municipality
Other (specify) CCME CWS
Report Criteria on C of A? ☐
Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required: ☐
Rush Confirmation Number: (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 BTEX F1+F2	CCME metals (ABST)	PAH's	# of Bottles	Comments
1		TP105-H-2	Aug 14/10	1305	soil			✓	✓		3	
2		TP6.5-LM-2	Aug 14/10	0850	soil			✓	✓		3	
3		TP5.5-JK-3	Aug 14/10	1125	soil			✓			2	
4		TP5.5-KL-3	Aug 14/10	1000	soil			✓			3	REC'D IN OTTAWA
5		TP4.5-JK-3	Aug 14/10	1110	soil			✓			2	
6		TP9-CD-2	Aug 14/10	1400	soil			✓	✓	✓	4	
7		TPDump4-2	Aug 14/10	1450	soil			✓	✓		3	
8		TPDUMP2-3	Aug 14/10	1535	soil			✓	✓		3	
9		TPDUMP1-1	Aug 14/10	1610	soil				✓		1	
10		DUP H	Aug 14/10	1050	soil				✓			

cancel 6.5.18 7.10.13 10.13.13 6.3.16 6/6/16 9/8/16 6/5/16

*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 Intact on Cooler?
Patricia Coyne Patricia Coyne	10/08/14	2100	Jessica Li 1150	14/08/18 10/08/20	14:19 09:43		☐		☐ 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

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CHAIN OF CUSTODY RECORD

INVOICE INFORMATION:

Company: #24125 Stantec Consulting Ltd
Contact Name: Patricia Coyne
Address: PO Box 1680 Yellowknife NT X1A2P3
Phone: (867)920-2216 Fax: (867)920-2278
Email: Patricia.Coyne@stantec.com

REPORT INFORMATION (if differs from invoice): same

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

PROJECT INFORMATION:

Quotation #: B05402
P.O. #: 12360017
Project #: 1236000017 ~~Surface Water~~
Project Name: Clyde River Phase III ESA
Site #:
Sampled By: PE/MR/MN/JS

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 200638
CHAIN OF CUSTODY #: C#200638-05-01
PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:

☐ MISA Reg. 153/04
Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
☐ Reg. 558
Municipality:
Other (specify):
Report Criteria on C of A? Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required: ☐
Rush Confirmation Number: (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 Metals	# of Bottles	Comments
1		DUP I	Aug 14/10	1450	Soil			✓	1	
2		DUP J	Aug 14/10	0830	Soil			✓	1	
3		[redacted]	[redacted]		[redacted]					
4										
5										
6										
7										
8										
9										
10										

REC'D IN OTTAWA

on ice
6.5.18 6/6/18
7.10.13 6/5/18
12.13.3 9/8/18
6.3.10

*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 Intact on Cooler?
Paul Arge Patricia	2010/08/14	2100	Jessica K. 1130	W 08/19 10/08/20	14:19 09:43		☐		☐ 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.

Maxxam Analytics International Corporation o/a Maxxam Analytics

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CHAIN OF CUSTODY RECORD

Page 47 of

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Company:	#24125 Stantec Consulting Ltd	Company Name:		Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #:
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		200639
Address:	PO Box 1680	Address:	Same	Project #:	1236000017 ~~Ground Water~~	CHAIN OF CUSTODY #:	PROJECT MANAGER:
	Yellowknife NT X1A2P3			Project Name:	Clyde River phase III ESA	C#200639-08-01	RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Site #:			
Email:	Patricia.Coyne@stantec.com	Email:		Sampled By:	PC/MN/MR/JS		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
- ☐ Reg. 558 — Municipality
- Other (specify): CCME CWS — Report Criteria on C of A? ☐

Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: _____ Time Required: _____ ☐
Rush Confirmation Number: _____ *(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 (AT) Metals	CCME BTEX/F1-F4	Hold for CCME Metals Extractand Hold	CCME BTEX/F1-F4 PAHs	# of Bottles	Comments
1		TP2.5-NO-2	Aug 13/10	1550	soil			✓	✓			4	
2		TP3.5-NO-2	Aug 13/10	1610	soil				✓			3	
3		TP6.5-NO-2	Aug 13/10	1035	soil			✓				1	
4		TP6.5-NO-3	Aug 13/10	1040	soil				✓			3	REC'D IN OTTAWA
5		TP7.5-NO-2	Aug 13/10	1010	soil			✓	✓			4	
6		TP2.5-MN-3	Aug 13/10	1530	soil				✓			2	
7		TP3.5-MN-2	Aug 13/10	1456	soil				✓			3	
8		TP4.5-MN-2	Aug 13/10	1428	soil			✓				1	
9		TP4.5-MN-3	Aug 13/10	1430	soil				✓			3	
10		TP5.5-MN-1	Aug 13/10	1350	soil					✓		1	

air

6.5 ℃ 6/6/17 ℃
7.1 ℃ 6/5/17 ℃
6.3 ℃ 9/8/17 ℃

*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 Intact on Cooler:
Patricia Coyne	10/08/14	0800	Jessica K	10/08/19	1429		☐	6.3 ℃	☐ Yes ☐ No
				10/03/20	0843				

* 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

INVOICE INFORMATION:
Company: #24125 Stantec Consulting Ltd
Contact Name: Patricia Coyne
Address: PO Box 1680, Yellowknife NT X1A2P3
Phone: (867)920-2216 Fax: (867)920-2278
Email: Patricia.Coyne@stantec.com

REPORT INFORMATION (if differs from invoice):
Company Name: same
Contact Name:
Address:
Phone: Fax:
Email:

PROJECT INFORMATION:
Quotation #: B05402
P.O. #: 123600017
Project #: 1236000017 ~~Ground Water~~
Project Name: Clyde River Phase III ESA
Site #:
Sampled By: PC/MN/JS/MR/RM

Laboratory Use Only:
MAXXAM JOB #:
BOTTLE ORDER #: 200639
CHAIN OF CUSTODY #: C#200639-07-01
PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:
☐ MISA Reg. 153/04 Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
☐ PWQO ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
☐ Reg. 558 Municipality:
Other (specify): CCME CWS Report Criteria on C of A? ☐
Reg. 153: ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

Note: For 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: Time Required: ☐
Rush Confirmation Number: (call lab for #)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water? (Y/N)	Metals Field Filtered? (Y/N)	HOLD	CCME/ATI Metals	CCME PAH Metals	CCME BTEX/F1-F4	pH	# of Bottles	Comments
1		TP6.5-MN-7	Aug13/10	1300	soil			✓		✓			4	
2		TP7-MN-1	Aug13/10	1100	soil				✓			✓	1	
3		TP7-MN-2	Aug13/10	1105	soil				✓				1	
4		TP7-MN-3	Aug13/10	1110	soil				✓				1	
5		TP7-MN-4	Aug13/10	1115	soil				✓				1	REC'D IN OTTAWA
6		TP7-MN-5	Aug13/10	1120	soil				✓	✓			4	
7		TP7-MN-6	Aug13/10	1125	soil			✓					1	
8		TP7-MN-7	Aug13/10	1130	soil			✓					1	
9		TP7.5-MN-2	Aug13/10	0755	soil				✓				1	
10		TP7.5-~~MN~~ LM-1	Aug13/10	0915	soil				✓	✓			3	

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Time Sensitive	Laboratory Use Only: Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Patricia Coyne	10/08/15	0800	Jessica K.	10/08/19	14:19		☐	2.3,1.8	☐ Yes ☐ No
			TBO HIRANSHI	10/03/20	09:43				

6/6/13C 6/5/13C 9/8/13C 7.10.13 13.13.13 C-3.1.8

* 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

IMMEDIATE TEST

INVOICE INFORMATION:		REPORT INFORMATION (if differs from invoice):		PROJECT INFORMATION:		Laboratory Use Only:	
Name:	#24125 Stantec Consulting Ltd	Company Name:		Quotation #:	B05402	MAXXAM JOB #:	BOTTLE ORDER #: 200639
Contact Name:	Patricia Coyne	Contact Name:		P.O. #:	123600017		
Address:	PO Box 1680 Yellowknife NT X1A2P3	Address:	same	Project #:	1236000017 ~~Ground Water~~	CHAIN OF CUSTODY #: C#200639-06-01	PROJECT MANAGER: RENATA SPENA
Phone:	(867)920-2216 Fax: (867)920-2278	Phone:	Fax:	Project Name:	Clyde River Phase III ESA		
Email:	Patricia.Coyne@stantec.com	Email:		Site #:			
				Sampled By:	PC/MN/MR/JS.		

REGULATORY CRITERIA:
- ☐ MISA — Reg. 153/04 — Sewer Use: ☐ Sanitary ☐ Storm ☐ Combined
- ☐ PWQO — ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 4 — ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse — Municipality
- ☐ Reg. 558
- Other (specify) CCME CWS — Report Criteria on C of A? ☐

SPECIAL INSTRUCTIONS

Reg. 153 ☐ 2004 ☐ 2011

Note: For 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: L
(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: ____ Time Required: ____ ☐
Rush Confirmation Number: ____ *(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/ATI Metals	Hold CCME/ATI Metals	CCME BTEX/F1-F4	PAHs	pH	# of Bottles	Comments
1		TP5.5-MN-2	Aug 13/10	1355	soil				✓				1	
2		TP5.5-MN-3	Aug 13/10	1359	soil				✓				1	
3		TP5.5-MN-4	Aug 13/10	1404	soil				✓				1	
4		TP5.5-MN-5	Aug 13/10	1412	soil				✓	✓	✓	✓	3	
5		TP6.5-MN-1	Aug 13/10	1300	soil				✓				1	REC'D IN OTTAWA
6		TP6.5-MN-2	Aug 13/10	1306	soil				✓				1	
7		TP6.5-MN-3	Aug 13/10	1310	soil				✓				1	
8		TP6.5-MN-4	Aug 13/10	1315	soil				✓				1	
9		TP6.5-MN-5	Aug 13/10	1321	soil				✓				1	
10		TP6.5-MN-6	Aug 13/10	1328	soil			✓					1	

Ca 5.18 7.10.13 12.13.13 — 6/6/17C 6/5/16C 9/8/17C

*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 Intact on Cooler?
Patricia Coyne	10/08/15	0800	Jessica K TSO	10/08/19	14:19		☐	Ca 3.10	☐ Yes ☐ No
			HILROSOFT	10/08/20	09:43				

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CHAIN OF CUSTODY RECORD

Page 77 of 77

INVOICE INFORMATION:

Company Name: #24125 Stantec Consulting Ltd
Contact Name: Patricia Coyne
Address: PO Box 1680, Yellowknife NT X1A2P3
Phone: (867)920-2216 Fax: (867)920-2278
Email: Patricia.Coyne@stantec.com

REPORT INFORMATION (if differs from invoice):

Same

PROJECT INFORMATION:

Quotation #: BOS402
P.O. #: 1236000017
Project #: 1236000017 ~~Ground Water~~
Project Name: Clyde River Phase III ESA
Site #:
Sampled By: PC/MN/MR/JS

Laboratory Use Only:

MAXXAM JOB #:
BOTTLE ORDER #: 200639
CHAIN OF CUSTODY #: C#200639-09-01
PROJECT MANAGER: RENATA SPENA

REGULATORY CRITERIA:

☐ MISA ☐ PWQO ☐ Reg. 558
Reg. 153/04: ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table 6
Sewer Use: ☐ Residential/Parkland ☐ Industrial/Commercial ☐ Medium/Fine ☐ Coarse
☐ Sanitary ☐ Storm ☐ Combined
Municipality:
Other (specify) CCME
Report Criteria on C of A? ☐
Reg. 153 ☐ 2004 ☐ 2011

SPECIAL INSTRUCTIONS

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

ANALYSIS REQUESTED (Please be specific):

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

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Regulated Drinking Water ? (Y/N)	Metals Field Filtered ? (Y/N)	CCME BTEX F1-F4	CCME metals	# of Bottles	Comments
1		TP35-LM-4	Aug 13/10	16:50	Soil			✓		2	
2		DUPK	Aug 15/10	1035	soil				✓	1	
3											
4											
5											
6											
7											
8											
9											
10											

REC'D IN OTTAWA

Q.S.18 cmle
2.10.13 6/6/16
12.BB 6/5/16
2.10 9/8/16

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: Time Required: ☐
Rush Confirmation Number: (call lab for #)

*RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time:	# Jars Used and Not Submitted	Time Sensitive	Laboratory Use Only: Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Patricia Coyne Patricia Coyne	10/08/15	08:00	Jessica Hall 1230 HIB Rush #1	10/08/20	09:43		☐	2.3°C	☐ 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

Your Project #: 1236000017
Your C.O.C. #: n/a

Attention: Patricia Coyne
Stantec Consulting Ltd
PO Box 1680
Yellowknife, NT
CANADA X1A2P3

Report Date: 2010/09/17

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B0C8469
Received: 2010/09/16, 10:47

Sample Matrix: OIL
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Polychlorinated Biphenyl (PCB)	4	2010/09/16	2010/09/17	CAM SOP-00328	EPA 8082 modified

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Polychlorinated Biphenyl in Water	4	2010/09/16	2010/09/17	CAM SOP-00309	SW846 8082

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

Encryption Key

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

RENATA SPENA, Project Manager
Email: Renata.Spena@maxxamanalytics.com
Phone# (905) 817-5700 Ext:5818

==========

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 #: B0C8469
Report Date: 2010/09/17

Stantec Consulting Ltd
Client Project #: 1236000017

POLYCHLORINATED BIPHENYLS BY GC-ECD (OIL)

Maxxam ID		HE2459	HE2460	HE2461	HE2462		
Sampling Date							
COC Number		n/a	n/a	n/a	n/a		
	Units	**DRUM-4**	**DRUM-5**	**DRUM-6**	**DRUM-7**	**RDL**	**QC Batch**
PCBs							
Aroclor 1016	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1221	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1232	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1242	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1248	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1254	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1260	ug/g	<1	<1	<1	<1	1	2267821
Aroclor 1268	ug/g	<1	<1	<1	<1	1	2267821
Total PCB	ug/g	<1	<1	<1	<1	1	2267821
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	92	90	87	92		2267821
Decachlorobiphenyl	%	77	79	73	75		2267821

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

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Maxxam Job #: B0C8469
Report Date: 2010/09/17

Stantec Consulting Ltd
Client Project #: 1236000017

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		HE2456	HE2457	HE2458		HE2460		
Sampling Date								
COC Number		n/a	n/a	n/a		n/a		
	Units	**DRUM-1**	**DRUM-2**	**DRUM-3**	**RDL**	**DRUM-5**	**RDL**	**QC Batch**
PCBs								
Aroclor 1016	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1221	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1232	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1242	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1248	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1254	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1260	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1262	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Aroclor 1268	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Total PCB	ug/L	<0.05	<0.05	<0.05	0.05	<3	3	2267913
Surrogate Recovery (%)								
2,4,5,6-Tetrachloro-m-xylene	%	63	49	47		69		2267913
Decachlorobiphenyl	%	72	53	46		63		2267913

N/A = Not Applicable
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 #: B0C8469
Report Date: 2010/09/17

Stantec Consulting Ltd
Client Project #: 1236000017

GENERAL COMMENTS

Sample HE2460-01: PCB Analysis: Due to the sample matrix, sample required dilution. Detection limits were adjusted accordingly.

POLYCHLORINATED BIPHENYLS BY GC-ECD (OIL)

Polychlorinated Biphenyl (PCB): 92% recovery of a 50 ppm SRM of PCB in oil indicates a potential low bias of 8% in the reported results.

Results relate only to the items tested.

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #:
Project name:

Quality Assurance Report

Maxxam Job Number: MB0C8469

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2267821	ART	Matrix Spike	2,4,5,6-Tetrachloro-m-xylene	2010/09/16		85	%	30 - 130
			Decachlorobiphenyl	2010/09/16		81	%	30 - 130
			Aroclor 1260	2010/09/16		77	%	75 - 125
			Total PCB	2010/09/16		77	%	30 - 130
		QC Standard	2,4,5,6-Tetrachloro-m-xylene	2010/09/16		93	%	30 - 130
			Decachlorobiphenyl	2010/09/16		81	%	30 - 130
			Aroclor 1260	2010/09/16		92	%	N/A
			Total PCB	2010/09/16		92	%	N/A
		Spiked Blank	2,4,5,6-Tetrachloro-m-xylene	2010/09/16		84	%	30 - 130
			Decachlorobiphenyl	2010/09/16		73	%	30 - 130
			Aroclor 1260	2010/09/16		84	%	75 - 125
			Total PCB	2010/09/16		84	%	30 - 130
		Method Blank	2,4,5,6-Tetrachloro-m-xylene	2010/09/16		82	%	30 - 130
			Decachlorobiphenyl	2010/09/16		71	%	30 - 130
			Aroclor 1016	2010/09/16	<1		ug/g	
			Aroclor 1221	2010/09/16	<1		ug/g	
			Aroclor 1232	2010/09/16	<1		ug/g	
			Aroclor 1242	2010/09/16	<1		ug/g	
			Aroclor 1248	2010/09/16	<1		ug/g	
			Aroclor 1254	2010/09/16	<1		ug/g	
			Aroclor 1260	2010/09/16	<1		ug/g	
			Aroclor 1268	2010/09/16	<1		ug/g	
			Total PCB	2010/09/16	<1		ug/g	
		RPD	Aroclor 1016	2010/09/16	NC		%	50
			Aroclor 1221	2010/09/16	NC		%	50
			Aroclor 1232	2010/09/16	NC		%	50
			Aroclor 1242	2010/09/16	NC		%	50
			Aroclor 1248	2010/09/16	NC		%	50
			Aroclor 1254	2010/09/16	NC		%	50
			Aroclor 1260	2010/09/16	NC		%	50
			Aroclor 1268	2010/09/16	NC		%	50
			Total PCB	2010/09/16	NC		%	50
2267913	JZ	Matrix Spike	2,4,5,6-Tetrachloro-m-xylene	2010/09/17		55	%	40 - 130
			Decachlorobiphenyl	2010/09/17		65	%	40 - 130
			Aroclor 1260	2010/09/17		75	%	30 - 130
			Total PCB	2010/09/17		75	%	30 - 130
		Spiked Blank	2,4,5,6-Tetrachloro-m-xylene	2010/09/17		61	%	40 - 130
			Decachlorobiphenyl	2010/09/17		76	%	40 - 130
			Aroclor 1260	2010/09/17		87	%	30 - 130
			Total PCB	2010/09/17		87	%	30 - 130
		Method Blank	2,4,5,6-Tetrachloro-m-xylene	2010/09/17		76	%	40 - 130
			Decachlorobiphenyl	2010/09/17		89	%	40 - 130
			Aroclor 1016	2010/09/17	<0.05		ug/L	
			Aroclor 1221	2010/09/17	<0.05		ug/L	
			Aroclor 1232	2010/09/17	<0.05		ug/L	
			Aroclor 1242	2010/09/17	<0.05		ug/L	
			Aroclor 1248	2010/09/17	<0.05		ug/L	
			Aroclor 1254	2010/09/17	<0.05		ug/L	
			Aroclor 1260	2010/09/17	<0.05		ug/L	
			Aroclor 1262	2010/09/17	<0.05		ug/L	
			Aroclor 1268	2010/09/17	<0.05		ug/L	
			Total PCB	2010/09/17	<0.05		ug/L	
		RPD	Aroclor 1016	2010/09/17	NC		%	40
			Aroclor 1221	2010/09/17	NC		%	40
			Aroclor 1232	2010/09/17	NC		%	40

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Stantec Consulting Ltd
Attention: Patricia Coyne
Client Project #: 1236000017
P.O. #:
Project name:

Quality Assurance Report (Continued)

Maxxam Job Number: MB0C8469

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
2267913	JZ	RPD	Aroclor 1242	2010/09/17	NC		%	40
			Aroclor 1248	2010/09/17	NC		%	40
			Aroclor 1254	2010/09/17	NC		%	40
			Aroclor 1260	2010/09/17	NC		%	40
			Aroclor 1262	2010/09/17	NC		%	40
			Aroclor 1268	2010/09/17	NC		%	40
			Total PCB	2010/09/17	NC		%	40

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
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 (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.

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