DEFENCE CONSTRUCTION CANADA

COLLECTION OF LANDFILL MONITORING DATA YEAR 2007

FOX-4 CAPE HOOPER, NU
FINAL REPORT

DCC PROJECT NO. KN28434 DLCMON FOX4
NUNATTA PROJECT NO. 06715

DECEMBER 2007

Nunatta Environmental Services Inc.

DEFENCE CONSTRUCTION CANADA

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NUNATTA PROJECT No. 06715

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1.0 INTRODUCTION

1.1 Context and Mandate

Defence Construction Canada (DCC) is managing the cleanup and monitoring programs at Distant Early Warning (DEW) Line sites in Canada, on behalf of Department of National Defence (DND), Nunatta Environmental Services Inc. (Nunatta) was mandated by DCC to carry out the collection of monitoring data from landfill sites located on the former DEW Line site of FOX-4, Cape Hooper, Nunavut for the years 2005 to 2008. For this purpose, Nunatta has teamed up with Franz Environmental Inc. (FRANZ), who provided expert technical support for the fieldwork, collection of monitoring data and reporting for the year 2007. The present report documents the findings of the field program for the 2007 monitoring year.

1.2 Location and Site Features

Cape Hooper is located on the east coast of Baffin Island, at 68^{o}26' north latitude and 66^{o}44' west longitude, approximately midway between the communities of Qikiqtarjuaq and Clyde River. The FOX-4 Cape Hooper Site was a former auxiliary site on the DEW Line. A North Warning System Short Range Radar (SRR) has been constructed in the vicinity of the former DEW Line facilities. As part of the contract for the construction of the SRR, some demolition and landfilling of waste materials was carried out due to the limited area available for the new development.

The former DEW Line site was comprised of communications, accommodations and maintenance facilities located at the summit, with an airstrip, fuel storage and maintenance facilities located near the coast. These areas are referred to as the Upper and Lower Sites, respectively. The environmental cleanup and demolition of other facilities not required for the operation of the SRR site was initiated in 1996 and was completed in mid-1999. The cleanup included the excavation of one dump site, closure and remediation of six existing landfills, the construction of two new landfills for the disposal of non-hazardous wastes generated from demolition and collection of site debris, and construction of a DCC Tier II soil disposal facility. These landfills, as shown on the overall site plan, Figure 1 FOX-4 Cape Hooper – Overall Site Plan, include:

- Upper Site Dump (excavated during the cleanup, no monitoring required);
- Station Area Landfill (new landfill);
- Helipad Landfills - East and West;
- Barrel Dump Landfill;
- Lower Site Landfill (new landfill);
- DCC Tier II Soil Disposal Facility (new landfill);
- Airstrip Landfill; and
- Tanner Bay Landfill.

1.3 Objectives and Scope of Work

The objective of the DCC Landfill Monitoring Program is to collect sufficient information to assess the landfills' performance, from a geotechnical and environmental perspective.

DCC has specified the requirements for the Landfill Monitoring Program in the document *Terms of Reference – Consulting Services for the Collection of Landfill Monitoring Data – FOX-4 Cape Hooper*, DEW Line Site Nunavut Settlement Region, Qikiqtaaluk Region, DCC Project # DLCUMONFOX-4, 21 April 2005 (ToR, reference B).

The scope of work for the Landfill Monitoring Program is defined in the ToR (reference B) and in Nunatta's accepted proposal dated 2005 (reference C) that was submitted to DCC. The scope of work generally includes the following activities:

- Landfill Monitoring for each of the FOX-4 Landfills:
    - Visual inspection;
    - Soil sampling;
    - Groundwater sampling (selected landfill areas);
    - Thermal monitoring (DCC tier II Soil Disposal Facility only);
    - Creation of photographic records; and
- Draft and Final reports.

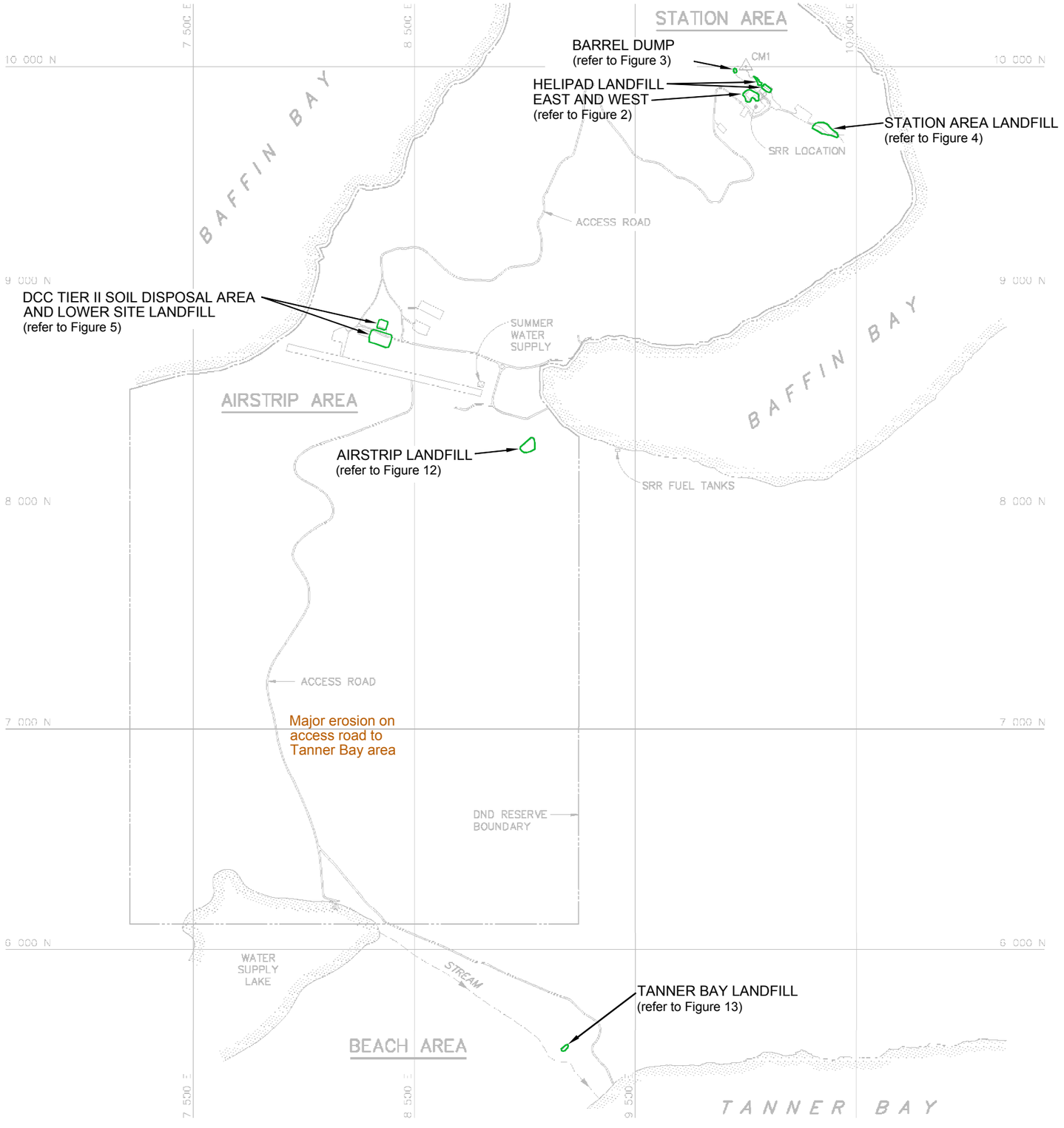
1.4 Report Format

This report describes the work carried out in August 2007 at eight landfill sites at FOX-4 Cape Hooper. Results from soil and groundwater sampling, thermal monitoring, and visual inspection of the sites are also presented in the formats described in the ToR (reference B).

An electronic version of the report and its component tables, figures and data files is included in an Addendum CD-ROM, which is appended to the report.

The report is organized with a separate chapter for each of the landfill areas. Each chapter contains all relevant information for that landfill area, for the 2007 Landfill Monitoring Program. For the photographic record, the printed copy of the report only includes an index of photos for each of the landfill areas. The actual photos are included in electronic format in the Addendum CD-ROM of the report.

Certificates of Analysis, QA/QC analytical results and field notes are attached in appendices.



LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

CM1 SURVEY CONTROL MONUMENT

LANDFILL BOUNDARIES (APPROXIMATE)

SURVEY CONTROL MONUMENTS

NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
CM1	10 000.000	10 000.000	397.575	FOX-4 BASELINE STA. 0+00 (LEAD PLUG IN ROCK)

Title: FOX-4 CAPE HOOPER - OVERALL SITE PLAN

Project: FOX-4 CAPE HOOPER
DEW LINE CLEAN UP
LANDFILL MONITORING PLAN

Date: NOVEMBER 2007

Client: DEFENCE CONSTRUCTION CANADA

SCALE 1:20,000

500 400 300 200 100 0 500
metres

FIGURE 1

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-0-OverallSite.dwg

2.0 OUTLINE AND METHODOLOGY

2.1 Field Program Staff

The 2007 field program at FOX-4 Cape Hooper took place from August 22st to the 25th 2007. The Nunatta field program was executed by Mr. Richard Wells, Ryan Fletcher, and two (2) Inuit.

2.2 Visual Inspection

The sites were inspected as per the ToR (reference B) for evidence of settlement, erosion, or frost action. All sites were visually inspected for potential seepage, water pooling and resurgence, staining, vegetation stress, odour and presence of hydrocarbon sheen. Photos with a measure of scale were taken to show the actual general state of the landfills as well as features of interest. Annotated sketches/diagrams are included in the present report for each landfill (Figures 2, 3, 4, 5, 12, and 13).

For the photographic record, the printed copy of the report only includes an index of photos for each of the landfill areas. The actual photos are included in electronic format in the Addendum CD-ROM to the report.

2.3 Soil Sampling

The soil sampling methodology conformed to guidance provided in the following Canadian Council of Ministers of the Environment (CCME) documents:

- CCME Guidance Document on the Management of Contaminated Sites in Canada, April 1997, CCME PN 1279. (CCME catalogue - http://www.ccme.ca/pdfs/cat_eng.pdf);
- CCME EPC-NCS62E Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites - Volume I: Main Report, Dec 93 (CCME catalogue - http://www.ccme.ca/pdfs/cat_eng.pdf);
- CCME EPC-NCS66E Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites - Volume II: Analytical Method Summaries, Dec 93 (CCME catalogue - http://www.ccme.ca/pdfs/cat_eng.pdf);
- Reference method for the Determination of Petroleum Hydrocarbons in Soil – Tier I Method, 2001; and
- CCME Subsurface Assessment Handbook for Contaminated Sites, March 1994, EPC-NCSRP-48E (CCME catalogue - http://www.ccme.ca/pdfs/cat_eng.pdf).

For the 2007 monitoring event, for each soil-sampling station one surface sample (0-15 cm depth below surface) and one subsurface sample (40-50 cm depth below surface) was

collected. For some sub-surface sampling stations, dense gravel/boulders limited the sampling depth to 30-40 cm.

The soil samples consisted mainly of fine to coarse sand, with traces of gravel and silt coloured brown to beige. The soils were generally well sorted.

As specified in the ToR (reference B, the soil sampling procedures were adhered to:

- Where required, the soil samples were collected from locations between two to four meter radius of the monitoring wells;
- Blind field duplicates (10 %) were collected for Quality Assurance and Quality Control purposes;
- Duplicate samples (10 %) were also taken and sent to a second laboratory for quality control purposes; and
- An additional ten percent of soil samples taken were sent to the owner's representative (ESG OPS CENTRE) in Kingston for archiving as specified by DCC.

The soil samples were analyzed for the requested parameters (TPH, Total metals and PCBs) as specified by DCC. Table 2-1 below summarizes the soil sampling at FOX-4 during the August, 2006 field program.

Table 2-1: Summary of Soil Sampling at FOX-4, August 2007

Landfill Site	Soil Sampling Stations							
Helipad Landfill West	F4-17	F4-18	F4-19	F4-20	MW-1	MW-2	MW-6	
Helipad Landfill East	F4-1	MW-3	MW-4	MW-5				
Barrel Dump Landfill	F4-2	F4-3	F4-4	F4-5	F4-21	F4-22	F4-23	F4-24
Station Area Landfill	MW-7	MW-8	MW-9					
DCC Tier II Landfill	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15		
Lower Site Landfill	MW-16							
Airstrip Landfill	F4-8	F4-9	F4-10	F4-25				
Tanner Bay Landfill	F4-11	F4-12	F4-13					

Notes:
Soil samples annotated as "MW" were collected as per the ToR (reference X) between 2-4 metres from monitoring wells. Samples annotated as "F" were collected in the designated locations.
All soil samples (except F4-25) were collected from two depths (0-15 cm and 40-50 cm generally)
For 2007 sampling, total no. of soil samples = 72 samples (36 samples X 2 depths) + 7 QA/QC + 7 (Inter-laboratory comparison) + 7 for Owner's Representative (ESG OPS Archives) = 93 samples (total)

2.4 Groundwater Sampling

The soil sampling methodology conformed to guidance provided in the following Canadian Council of Ministers of the Environment (CCME) documents:

- CCME EPC-NCS62E Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites - Volume I: Main Report, Dec 93 (CCME catalogue - http://www.ccme.ca/pdfs/cat_eng.pdf); and
- CCME EPC-NCS66E Guidance Manual on Sampling, Analysis, and Data Management for Contaminated Sites - Volume II: Analytical Method Summaries, Dec 93 (CCME catalogue - http://www.ccme.ca/pdfs/cat_eng.pdf).

Wells were purged as specified and measurements of *in situ* temperature, conductivity and pH were taken. Sampling took place when these parameters stabilized. The samples were not acidified and were not filtered (as directed in the ToR).

A summary of the status of the monitoring wells and the attempts made are summarized in Tables 2-2 and 2-3.

It is noted that none of the wells were found to have a slip cap in place. In almost every well, bentonite covered the top of the well pipe to varying degrees. The bentonite well-seals had expanded to partially or completely fill the in-ground cavity surrounding the well top (flush mount of "road box"). Bentonite blockage issues are recorded in Table 2-3. It is suspected that due to temperature fluctuations and soil conditions in this extreme environment, the bentonite has

expanded, risen, and then subsequently fallen into the PVC well pipe. In several cases, sampling bailers were also observed to be obstructing the monitoring wells. Partially successful attempts were made to retrieve the stuck bailers. The results of this attempted recovery action are described in Table 2-3. The attempts made by the field personnel to retrieve the stuck bailers were recorded by video tape and included in the Addendum CD-ROM to the report. Many wells had standing water on top of the stuck bailers, which still allowed for groundwater purging and sampling.

In sampled wells, no signs of free phase hydrocarbon product were detected. Monitoring Well Development and Sampling Record forms are included in appropriate sections in this report.

Table 2-2 – Summary of Groundwater Sampling at FOX-4, August 2007

Landfill Site	**Monitoring Well Stations**				
Helipad Landfill West	**MW-1**	**MW-2**	MW-3	**MW-5**	MW-6
Helipad Landfill East	MW-4				
Barrel Dump Landfill	None				
Station Area Landfill	**MW-7**	**MW-8**	MW-9		
DCC Tier II Landfill	**MW-10**	MW-11	**MW-12**	**MW-13**	**MW-15**
Lower Site Landfill	**MW-14**	**MW-16**			
Airstrip Landfill	None				
Tanner Bay Landfill	None				

Notes:

1 **BOLD**: Monitoring wells sampled during the August 2007 sampling event. Other wells could not be sampled due to blockage and/or dry wells.

2 Total number of groundwater samples = 11 samples + 2 QA/QC (blind field duplicates) = 13.

Table 2-3: Summary of Monitoring Well Conditions at FOX-4, August 2007

Monitoring Well No.	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8
	Status of the Well							
Genivar, 2005	Good	Good	Frozen	Bailer stuck. Top of bailer at 1.37 m from t-o-p. Well filled with bentonite	Obstructed by bailer, Well full of bentonite	Obstructed by bailer, Well full of bentonite	Bailer stuck. Top of bailer at 1.73 m from t-o-p. Bailer could not be removed, Well dry	Good
Hazco, 2005	No bailer, ice at 4-5 ft., no obstruction	Bailer cap floating but no strings to pull out, could not remove bailer and cap	Bailer successfully removed, string still attached, no obstruction	No bailer, ice at 4-5 ft., no obstruction	No string attached to bailer, bailer sank to bottom of well and could not be removed. Suspect top of bailer has been ripped off, nothing to grab on base of bailer to pull it out.	No bailer, ice at 4-5 ft., no obstruction	No obstructions. Seemed to hit ice 4-5 ft below surface.	No obstructions. Seemed to hit ice 4-5 ft below surface.
Franz, 2006	Good	Good (Bailer stuck in the well and it was removed)	Bailer stuck in the well. Could not be removed. However, the well had enough water for monitoring and sampling	Bailer stuck in the well at 1.44 m. Could not remove.	Bailer obstructing well. Could not remove. However, there was enough water to monitor and sample	Bailer stuck at 0.37 m. Succeeded in clearing the bailer to 0.6 m. Clearance to at least 0.75 m is required for sampling.	Well casing filled with bentonite. Cleared bentonite. Condition now good.	Good
Franz, 2007	Good Bentonite swelled to cap - removed	Good Bentonite swelled to cap - removed	Bailer stuck in the well. Could not be removed. Attempts were made to remove obstruction for 45 mins - no water. Ice found in bottom of well	Bailer stuck in the well. Could not be removed. Attempts were made to remove obstruction for 40 mins. 4 cm of water in bottom after forcing obstruction deeper, purged and allowed to re-charge for 3 hours - no water	Bentonite swelled to cap - removed. Bailer obstructing well. Could not remove. However, there was enough water to monitor and sample	Bentonite swelled to cap - removed. Bailer at 0.6 m. Ice found in bottom of well - no water. Could not sample	Good Bentonite swelled to cap - removed.	Good

Monitoring Well No.	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16
				Status of the Well				
Genivar, 2005	Good	Good	Bailer stuck, could not be retrieved, Well filled with bentonite	Filled with bentonite	Filled with bentonite	Filled with bentonite	Frozen bentonite	Bailer stuck, could not be retrieved, Well filled with bentonite
Hazco, 2005	Obstruction at 1 m depth – either top of bailer with bentonite on it or a bentonite plug was encountered. Could not be removed	No bailers or obstructions in wells	No bailers or obstructions in wells	No bailers or obstructions in wells	No bailers or obstructions in wells	No bailers or obstructions in wells	No bailers or obstructions in wells	No bailers or obstructions in wells
Franz, 2006	Bailer stuck at 0.8 m. No water on top of bailer to sample. Could not remove bailer. Not possible to sample. Top of well plugged with bentonite. Cleared bentonite	Good (Top of well plugged with bentonite; it was cleared)	Top of well plugged with bentonite, which was cleared. Bailer stuck at 0.48 m. Could not remove bailer. No water on top of bailer to sample. Not possible to sample.	Top of well plugged with bentonite, which was cleared. Bailer stuck at 0.60 m. Cleared through the top of bailer up to 1.36 m and sampled.	Top of well plugged with bentonite, which was cleared. Some bentonite still in the bottom. Bailer stuck at 1.315 m. Could not remove bailer. However, there was enough water to monitor and sample	Good (Top of well plugged with bentonite; it was cleared)	Top of well plugged with bentonite, which was cleared. Bailer broken and stuck in the well. Cleared through the top of bailer up to 1.83 m and sampled.	Top of well plugged with bentonite, which was cleared. Ice at 0.59 m; which was broken. Bailer stuck in the well at 1.35 m. Managed to pull out the cap and string of the bailer. Could not remove the rest. However, there was enough water to monitor and sample
Franz, 2007	Bailer stuck at 0.8 m. No water on top of bailer to sample. Could not remove bailer. Not possible to sample. Top of well plugged with bentonite. Cleared bentonite	Good (Top of well plugged with bentonite; it was cleared)	Top of well plugged with bentonite, which was cleared. Bailer stuck at 0.48 m. Could not remove bailer. No water on top of bailer to sample. Not possible to sample.	Top of well plugged with bentonite, which was cleared. Bailer stuck at 0.60 m. Cleared through the top of bailer up to 1.36 m and sampled.	Top of well plugged with bentonite, which was cleared. Some bentonite still in the bottom. Bailer stuck at 1.315 m. Could not remove bailer. However, there was enough water to monitor and sample	Good (Top of well plugged with bentonite; it was cleared)	Top of well plugged with bentonite, which was cleared. Bailer broken and stuck in the well. Cleared through the top of bailer up to 1.83 m and sampled.	Top of well plugged with bentonite, which was cleared. Ice at 0.59 m. Bailer stuck in the well at 1.35 m. Managed to pull out the cap and string of the bailer. Could not remove the rest. However, there was enough water to monitor and sample

2.5 Thermal monitoring

The summary of thermistor conditions at the Lower Site landfill and DCC Tier II landfill is presented in Table 2-4.

Table 2-4: Summary of Thermistor Conditions at FOX-4, August 2007

Data Logger	Problem encountered	Attempt Made to solve the problem	Outcome of the attempt
T-1	Strings 2 and 3 not working	Old connector cable was re-attached.	Likely need a new connector cable (2m length) and should conduct electrical continuity testing to confirm that repair was adequate.
T-2	No problem identified	NA	NA
T-3	Warm up time was at 0.035	Changed to 0.210	Now at 0.210
T-4	No problem identified	NA	NA
T-5	Battery not charging (expired)	Installed New Battery	Now charging
T-6	Battery not charging (expired)	Installed New Battery	Now charging

2.6 Project References

The following references are specifically relevant to the 2007 Landfill Monitoring activities:

A. *Request for Abbreviated Proposal- Consultant Services – Collection of Landfill Monitoring Data – FOX-4 Cape Hooper, DEW Line Site Nunavut Settlement Region, Qikiqtaaluk Region, DCC Project # DLCUMONFOX-4*, 21 April 2005.

B. *Terms of Reference – Consulting Services for the Collection of Landfill Monitoring Data – FOX-4 Cape Hooper, DEW Line Site Nunavut Settlement Region, Qikiqtaaluk Region, DCC Project # DLCUMONFOX-4*, 2 May 2005.

C. Nunatta Proposal, 2005.

D. *Collection of landfill Monitoring data – Year 2005, FOX-4 Cape Hooper, DCC Project #KN28434, Nunatta Project # M103208*, Nunatta Environmental Services, January 2006

3.0 HELIPAD LANDFILLS – EAST AND WEST

3.1 Summary

The Helipad Landfills are located at the Upper Site, west of the current Short Range Radar (SRR) facilities. These landfills were built during the construction of the SRR site, prior to the clean up of the DEW Line FOX-4 site. The waste material disposed in those landfills include the building module train, garage, communication dishes and other miscellaneous waste. The east and west landfills have an approximate surface area of 1600 m^2 and 2800 m^2, respectively.

The monitoring of these landfills included visual inspection to monitor evidence of settlement or erosion, and collection of soil and groundwater samples to monitor for the presence of leachate. Groundwater monitoring well locations, as well as soil sample locations, are identified in Figure 2 FOX-4 Cape Hooper – Helipad Landfills – East and West.

Four new sampling locations were established in 2005 order to monitor existing seepage and hydrocarbons impacts noted in 2003. The new stations were identified F4-17 to F4-20.

The soil and groundwater analytical data are presented in Tables 3-6 and 3-7 respectively. Soil at all stations was sampled as specified in the Terms of Reference.

The visual inspection report, including supporting photos and drawing, is presented in the following pages.

3.2 Visual Inspection Report

3.2.1 Helipad- West Landfill

The visual inspection of the Helipad West Landfill was conducted on August 23, 2007. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material containing boulders and cobbles. The boulder and cobble material is generally angular, and the gravel and sand particles are generally well rounded. The Visual Inspection Checklist/Report has been completed as per the Terms of Reference and is included as Table 3-1 of this report.

Settlement

Indications of differential settlement were not noted.

Erosion

Three areas of active erosion were noted, these areas are designated E1-1, E1-2 and E1-3; and, are presented on Figure 2 FOX-4 Cape Hooper – Helipad Landfills – East and West. Area E1-1 and E1-2 are located on the south west slope of the landfill and E1-3 is located in close proximity to the north west slope. It appears that erosion along the southwest slope has

increased slightly since the 2006 landfill inspection. The maximum thickness of eroded material was observed at the area designated E1-1. The observed thickness of eroded material was approximately 0.5 m at the top a slope and decreased to 0.3 m near the bottom of the slope. The erosion at E1-3 is an active erosion process that was observed within close proximity of the landfill and E1-3 was documented as a conservative measure. Photos 1G7 and 1H7 record the erosion at E1-1, photos 1E7 and 1F7 record the erosion at E1-2 and photos 1A7 and 1B7 provide a record of the observed erosion at E1-3.

Frost Action

No frost action was observed at the surface (0-15 cm depth) or subsurface (40-50 cm depth) near the wells MW-1 to MW-6 of this area (see Figure 2 FOX-4 Cape Hooper – Helipad Landfills – East and West). It was noted that the soil present was generally low in silt and clay fractions. It is generally considered that materials less than 7% silt or clay are not frost susceptible. Based on a visual assessment of the soil type the capping material does not appear to have more than 7% silt or clay and therefore should not be susceptible to frost action.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted.

Re-establishment of Vegetation

Based on the regional setting of this landfill reestablishment of vegetation is not likely.

Staining

Some of the stained areas have amalgamated since the 2006 observations. The labeling from 2006 to 2007 was kept consistent. Where discrete stained areas have amalgamated into one a single larger area the label was combined, for example ST1-1B, ST1-3 and ST1-4 are now one continuous area of staining and is now labeled ST1-1B/3/4. The stained areas, designated ST1-1 to ST1-10, are presented in Figure 2 FOX-4 Cape Hooper – Helipad Landfills – East and West. Staining has increased slightly from 2006 to 2007. The staining appears reddish and is sometimes associated with a noticeable iridescent sheen, in addition there may be areas of dark grey and black staining. While difficult to quantify, the discoloration appeared to be less than what was observed in 2006 and the associated seepage flows appeared to be less.

Seepage Points

The actual seepage flows appeared to be less than what was observed in 2006.

Debris

Exposed debris was not noted.

Discussion

Based on the active erosion observed at E1-1 and E1-2, the performance of the landfill with respect to containment was rated as marginal. The visual inspection report, including

supporting photos and drawing, is presented in the following pages. With respect to the Helipad West Landfill the area of staining and erosion has increased slightly since the previous 2006 visual inspection. It was noted that surface runoff or overland drainage is directed overtop of the landfill and either continues flowing over the capping material or infiltrates the landfill. The surface water run off is causing erosion along the south west and northwest slopes. The infiltrated water may be a contributor to the increase in seepage and staining evident on the south west and northwest perimeter of the landfill. No frost action was observed at the surface (0-15 cm depth) or subsurface (40-50 cm depth) near the wells MW-1 to MW-6 of this area (see Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West).

3.2.2 Helipad- East Landfill

The visual inspection of the Helipad East Landfill was conducted on August 23, 2007. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material containing boulders and cobbles. The boulder and cobble material is generally angular, and the gravel and sand particles are generally well rounded. The Visual Inspection Checklist/Report has been completed as per the Terms of Reference and is included as Table 3-2 of this report.

Settlement

Indications of consolidation or differential settlement were not noted.

Erosion

An area of active erosion is occurring on the slope just above the landfill and material is being deposited on top of the landfill.

Frost Action

No frost action was observed at the surface (0-15 cm depth) or subsurface (40-50 cm depth) near the wells MW-1 to MW-6 of this area (see Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West). The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted

Re-establishment of Vegetation

Based on the regional setting of this landfill reestablishment of vegetation is not likely.

Staining

The stained areas, designated ST2-1, ST2-2 and ST1-3 are presented on Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West. Area ST1-3 was not observed in 2006. The photos documenting ST1-1 are 2F7; and 2G7 for ST1-2 the associated photos are 2D7, and 2E7; and for ST1-3 photos 2A7, and 2B7.

Seepage Points

The seepage areas are coincident with the areas of staining ST2-1, ST2-2 and ST1-3 are presented in Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West. These areas of seepage were not noted during the 2005 landfill assessment.

Debris

Exposed debris was not noted.

Discussion

Other than the appearance of the three areas of staining and seepage at the landfill, there appeared to be no active process that is reducing cover or containment of the material present in the landfill. The performance of the landfill containment was rated as acceptable.

Table 3-1: Visual Inspection Checklist – Inspection Report – Helipad West Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **HELIPAD WEST LANDFILL**
LANDFILL DESIGNATION: Landfill, Upper Site, West of SRR
DATE OF INSPECTION: August 23, 2007
DATE OF PREVIOUS INSPECTION: Aug 22, 2007
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	YES	The south west portion of the landfill. For locations, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	40 m	16 m		23 %	Based on anecdotal observations general settlement appears to have occurred along the south west portion of the landfill. This is consistent with consolidation of the landfill material. Indicators of differential settlement were not noted. No discernible difference from the 2006 observation		Consolidation settlement was observed over large portions of the landfill; it is generally not practicable to use hand-held photographs to document consolidation settlement.
Erosion	YES	Erosion appears to be active along the south west and north west slopes. For locations, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West. E1-1 E1-2 E1-3	 15 m 15 m 12 m	 5 m 3 m 8 m	 0.4 to 0.5 m 0.2 m 0.2 m	 3% 2% 3%	Surface run off is directed from behind the landfill across the capping layer to southwest slopes of the landfill.	Photographs: 1A7, 1B7, 1C7, 1D7, 1E7, 1F7, 1G7, 1H7, 1I7. For locations and directions of photographs, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	
Frost Action	NO	Frost action was not noted. The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.							
Sloughing and Cracking	NO								
Animal Burrows	NO								
Vegetation	NO	No vegetation was observed at the upper site. It was noted that the lack of vegetation is consistent with the natural setting.							
Staining	YES	ST1-1A ST1-1B/3/4 ST1-2 ST1-5 ST1-6 ST1-8/9 ST1-10 For locations, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	50 m 84 m 24 m 16 m N/A 60 m 12m	3 m 3.5 m 4m 4 m N/A 10 m 3 m	5% 11% 4% 2% N/A 2% 1%		Staining from seepage was noted. However the staining was color was appeared lighter than observed in 2006. Presumably due to the lower observed seepage rate in comparison to 2006.	Photographs: 1J7, 1K7, 1L7, 1M7, 1N7, 1O7, 1P7, 1Q7, 1R7, 1S7, 1T7, 1U7, 1V7, 1X7. For locations and directions of photographs, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	
Vegetation Stress	NO	No vegetation was observed at the upper site.							
Seepage Points	YES	Seepage points coincide with staining locations.	See staining observations.	See staining observations.			Where there was staining there was an associated seepage point. However the flows appeared to be less than observed in 2006	See staining observations.	
Debris Exposed	NO								
Presence/Condition – Monitoring Instruments	YES	Refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.						Refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West and associated photographic log.	
Features of Note.	YES	South West Slope					The south western slope appears to have been constructed by end dumping and pushing material over the edge the slope therefore the material is at its angle of repose, making the material more susceptible to erosion.		

Table 3-2: Visual Inspection Checklist – Inspection Report – Helipad East Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST

INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **HELIPAD EAST LANDFILL**
LANDFILL DESIGNATION: Landfill, Upper Site, East of SRR
DATE OF INSPECTION: August 23, 2007
DATE OF PREVIOUS INSPECTION: August 22, 2006
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	NO								
Erosion	YES	Erosion appears to be active on the slope located southwest and upgradient of the landfill with deposition of the material occurring on the top of the landfill. E2-1	5 m	5 m	0.3 to 0.4 m	2%		Photographs: 2H7, 2I7. For locations and directions of photographs, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	
Frost Action	NO	Frost action was not noted. The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.							
Sloughing and Cracking	NO								
Animal Burrows	NO								
Vegetation	NO	No vegetation was observed at the upper site. It was noted that the lack of vegetation is consistent with the natural setting.							
Staining	YES	ST2-1 ST2-2 ST2-3 For locations, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	1 m 1 m 3 m	0.5 m 0.5 m 1 m		1% 1% 3%	Staining was noted in 2007/2006 and not noted in 2005. ST2-3 was only observed in 2007.	Photographs: 2A7, 2B7, 2C7, 2D7, 2E7, 2F7, 2G7. For locations and directions of photographs, refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.	
Vegetation Stress	NO	No vegetation was observed at the upper site.							
Seepage Points	YES	Seepage points coincide with staining locations. Seepage appeared to be less than the rate observed in 2006.	See staining observations.	See staining observations.			Where there was staining there was an associated seepage point.	See staining observations	
Debris Exposed	NO								
Presence/Condition – Monitoring Instruments	YES	Refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.						Refer to Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West and associated photographic log.	
Features of Note.	NO								

3.3 Preliminary Stability Assessment

The Preliminary Stability Assessment for Helipad Landfills West and East have been completed as per the Terms of Reference and are included as Tables 3-3 and 3-4 respectively of this report.

Table 3-3: Preliminary Stability Assessment – Helipad West Landfill

Feature	Severity Rating	Extent
Settlement	Acceptable	None (No Differential Settlement)
Erosion	Marginal	Occasional
Frost Action	Not Observed	None
Staining	Acceptable	Numerous
Vegetation Stress	Not Observed	None
Seepage / Ponded Water	Acceptable	Numerous
Debris Exposure	Not Observed	
Overall Landfill Performance	**Marginal**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

Table 3-4: Preliminary Stability Assessment – Helipad East Landfill

Feature	Severity Rating	Extent
Settlement	Not Observed	None
Erosion	Acceptable	Occasional
Frost Action	Not Observed	None
Staining	Acceptable	Occasional
Vegetation Stress	Not Observed	None
Seepage / Ponded Water	Acceptable	Occasional
Debris Exposure	Not Observed	None
Overall Landfill Performance	**Acceptable**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

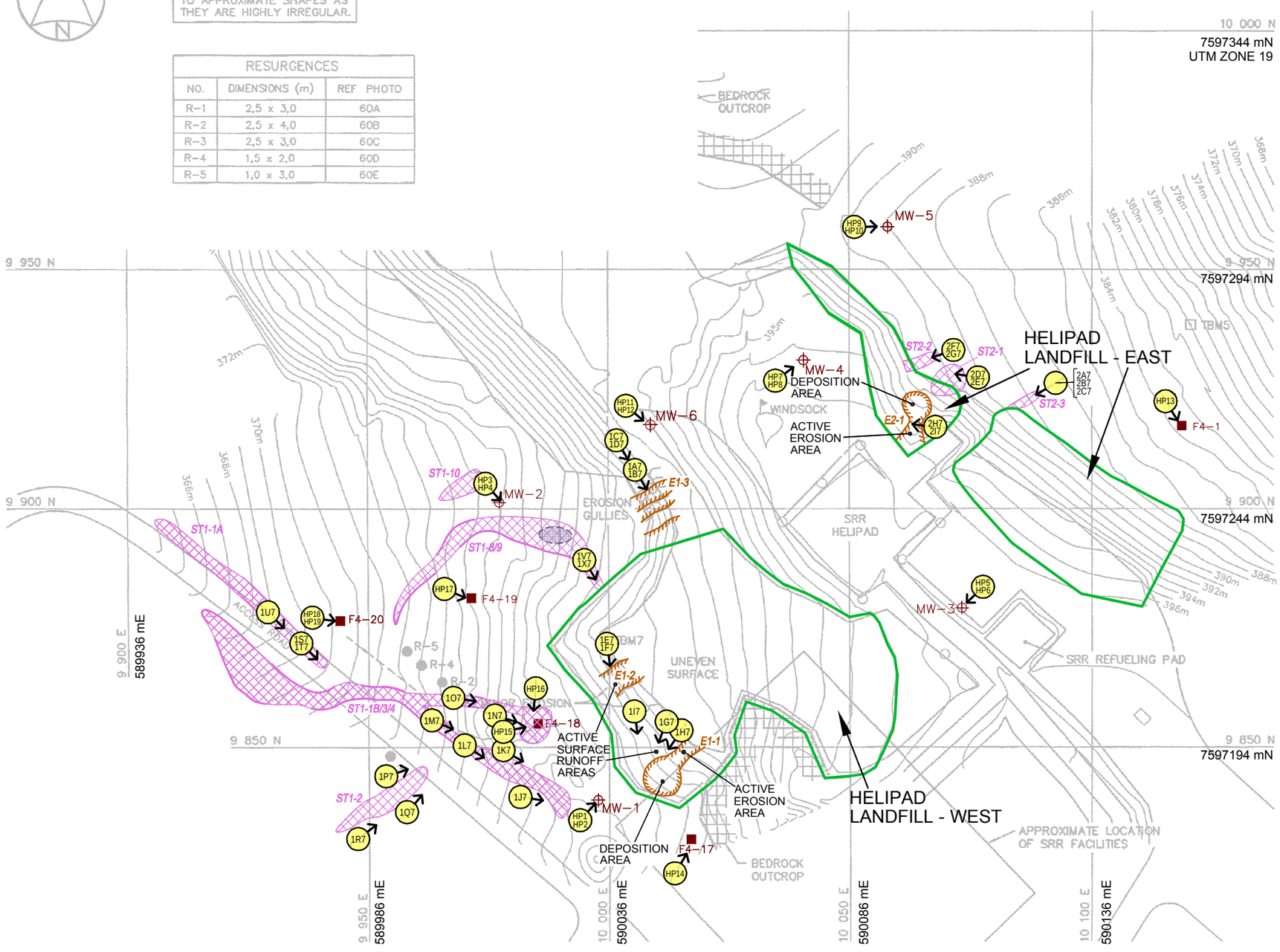
Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

3.4 Location Plan

The Location Plan for Helipad Landfills West and East has been completed as per the Terms of Reference and are included in the following page as Figure 2 FOX-4 Cape Hooper – Helipad landfills – East and West.

NOTE:
THE RESURGENCES ARE DRAWN TO APPROXIMATE SHAPES AS THEY ARE HIGHLY IRREGULAR.

RESURGENCES		
NO.	DIMENSIONS (m)	REF PHOTO
R-1	2,5 x 3,0	60A
R-2	2,5 x 4,0	60B
R-3	2,5 x 3,0	60C
R-4	1,5 x 2,0	60D
R-5	1,0 x 3,0	60E



LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

- SURVEY CONTROL MONUMENT
- TEMPORARY BENCHMARK
- MONITORING WELL LOCATION
- SOIL SAMPLE
- LANDFILL BOUNDARY (APPROXIMATE)

2007 OBSERVATIONS:

- STAINS
- DEBRIS
- EROSION
- POOLING
- SINKHOLE
- PHOTOGRAPH LOCATION (INDICATING PHOTO NUMBER, LOCATION, VIEWING DIRECTION)

TEMPORARY BENCHMARKS				
NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
5	9 938.442	10 120.491	388:170	CROSS CUT IN ROCK
7	9 873.107	9 999.103	388.170	NAIL

SURVEY CONTROL MONUMENTS				
NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
CM1	10 000.000	10 000.000	397.575	FOX-4 BASELINE STA. 0+00

MONITORING WELLS		
NO.	COORDINATES	
	NORTHING	EASTING
MW-1	9 839.1	9 997.6
MW-2	9 901.6	9 977.5
MW-3	9 878..9	10 074.0
MW-4	9 930.8	10 040.0
MW-5	9 958.9	10 058.0
MW-6	9 917.3	10 008.5

Title:
FOX-4 CAPE HOOPER - HELIPAD LANDFILLS - EAST AND WEST

Project:
FOX-4 CAPE HOOPER
DEW LINE CLEAN UP
LANDFILL MONITORING PLAN

Date:
NOVEMBER 2007

Client:
DEFENCE CONSTRUCTION CANADA

SCALE 1:935
25 20 15 9 3 0 25
metres

FIGURE 2

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-1-HelipadLandfills.dwg

3.5 Photographic Records

The Photographic Record for Helipad Landfills West and East has been completed as per the Terms of Reference and are included in the following page as Table 3-5. The Photographic Record only contains an index and “thumbnail” photographs; full sized photographs are contained in the Addendum CD-ROM.

Table 3-5 Photographic Record - Helipad Landfills East and West

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
1A7	1A7.jpg 2007-08-23	Slope erosion observed at 590049E/7597244N. Close up view, camera facing the erosion E1-3.		Figure 2
1B7	1B7.jpg 2007-08-23	Slope erosion observed at 590049E/7597244N. Close up view, camera facing the erosion E1-3.		Figure 2
1C7	1C7.jpg 2007-08-23	Slope erosion (E1-3) observed at 590049E/7597244N. Wide angle view, facing South-East.		Figure 2
1D7	1D7.jpg 2007-08-23	Slope erosion (E1-3) observed at 590049E/7597244N. Wide angle view, facing South-East.		Figure 2
1E7	1E7.jpg 2007-08-23	Slope erosion observed at 590040E/7597213N. Close up view, camera facing the erosion E1-2.		Figure 2
1F7	1F7.jpg 2007-08-23	Slope erosion (E1-2) observed at 590040E/7597213N. Wide angle view, facing South.		Figure 2
1G7	1G7.jpg 2007-08-23	Slope erosion (E1-1) observed at 590049E/7597198N. Wide angle view, facing South-West.		Figure 2
1H7	1H7.jpg 2007-08-23	Slope erosion (E1-1) observed at 590049E/7597198N. Top of slope erosion is inferred based on comparison to potentially undisturbed slope. Camera facing South-West.		Figure 2
1I7	1I7.jpg 2007-08-23	Slope erosion (E1-1) observed at 590049E/7597198N. White Card is 20cm by 28cm. Camera facing South.		Figure 2
1J7	1J7.jpg 2007-08-23	Reddish soil staining and seepage observed at 590026E/7597188N, nearby well MW 1.		Figure 2
1K7	1K7.jpg 2007-08-23	Wide angle view of soil staining and seepage observed starting upgradient at 590026E/7597188N. Camera facing South-East.		Figure 2
1L7	1L7.jpg 2007-08-23	Reddish soil staining from seepage observed at 590001E/7597194N. White card is 20cm by 28cm. Camera facing South-East.		Figure 2
1M7	1M7.jpg 2007-08-23	Wide angle view of soil staining and seepage observed starting upgradient at 590001E/7597194N. Camera facing South-East.		Figure 2
1N7	1N7.jpg 2007-08-23	Close up view of seepage emerging from slope at 589996E/7597202N. Camera facing East.		Figure 2

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
1O7	1O7.jpg 2007-08-23	Reddish soil staining from seepage emerging at 589996E/7597202N. White card is 20cm by 28cm. Camera facing East.		Figure 2
1P7	1P7.jpg 2007-08-23	Close up view of seepage observed at 589995E/7597191N. Camera is facing North-East.		Figure 2
1Q7	1Q7.jpg 2007-08-23	Soil staining and seepage observed at 589995E/7597191N. White card is 20cm by 28cm.		Figure 2
1R7	1R7.jpg 2007-08-23	Wide angle view of soil staining and seepage observed starting upgradient at 589995E/7597191N. Camera facing North-East.		Figure 2
1S7	1S7.jpg 2007-08-23	Close up view of seepage observed at 589976E/7597212N. Camera is facing South-East.		Figure 2
1T7	1T7.jpg 2007-08-23	Reddish soil staining and seepage observed at 589976E/7597212N. White card is 20cm by 28cm. Camera facing South-East.		Figure 2
1U7	1U7.jpg 2007-08-23	Wide angle view of reddish soil staining and seepage observed starting upgradient at 589976E/7597212N. Camera facing South-East.		Figure 2
1V7	1V7.jpg 2007-08-23	Close up view of seepage emerging from slope at 590015E/7597240N. Camera facing South-East.		Figure 2
1X7	1X7.jpg 2007-08-23	Wide angle view of reddish soil staining and seepage observed starting upgradient at 589996E/7597202N. Camera facing South-East.		Figure 2
2A7	2A7.jpg 2007-08-23	Close up view of seepage emerging from slope at 590120E/7597266N.		Figure 2
2B7	2B7.jpg 2007-08-23	Reddish soil staining and seepage observed at 590120E/7597266N. White card is 20cm by 28cm. Camera facing West.		Figure 2
2C7	2C7.jpg 2007-08-23	Wide angle view of reddish soil staining and seepage observed at 590120E/7597266N. Camera facing West.		Figure 2
2D7	2D7.jpg 2007-08-23	Close up view of seepage emerging from slope at 590107E/7597273N. Camera facing West.		Figure 2
2E7	2E7.jpg 2007-08-23	Wide angle view of reddish soil staining and seepage emerging from slope at 590107E/7597273N. Camera facing West.		Figure 2
2F7	2F7.jpg 2007-08-23	Reddish soil staining observed at 590102E/7597276N. White card is 20cm by 28cm. Camera facing South-West.		Figure 2

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
2G7	2G7.jpg 2007-08-23	Wide angle view of reddish soil staining observed at 590102E/7597276N. Camera facing South-West.		Figure 2
2H7	2H7.jpg 2007-08-23	Slope erosion observed at 590099E/7597262N. Close up view, camera facing the erosion E2-1.		Figure 2
2I7	2I7.jpg 2007-08-23	Slope erosion (E2-1) observed at 590099E/7597262N. Wide angle view, facing West.		Figure 2
HP-1	HP-1.jpg 22/08/2007	MW1 showing hole down to 50 cm. (approximately 2.5 m from well)		Figure 2
HP-2	HP-2.jpg 22/08/2007	Soil sampling at MW1 – facing northeast.		Figure 2
HP-3	HP-3.jpg 22/08/2007	MW2 showing hole down to 50 cm. (approximately 2.5 m from well)		Figure 2
HP-4	HP-4.jpg 22/08/2007	Soil sampling at MW2 – facing east.		Figure 2
HP-5	HP-5.jpg 22/08/2007	MW3 showing hole down to 50 cm. (approximately 2.5 m from well)		Figure 2
HP-6	HP-6.jpg 22/08/2007	Soil sampling at MW3 – facing southwest		Figure 2
HP-7	HP-7.jpg 22/08/2007	MW4 showing hole down to 50 cm. (approximately 2.5 m from well)		Figure 2
HP-8	HP-8.jpg 22/08/2007	Soil sampling at MW4 – facing northeast.		Figure 2
HP-9	HP-9.jpg 22/08/2007	MW5 showing hole down to 50 cm. (approximately 2.5 m from well)		Figure 2
HP-10	HP-10.jpg 22/08/2007	Soil sampling at MW5 – facing east.		Figure 2

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
HP-11	HP-11.jpg 22/08/2007	MW6 showing hole down to 50 cm. (approximately 2.5 m from well)		Figure 2
HP-12	HP-12.jpg 22/08/2007	Soil sampling at MW6 – facing southeast.		Figure 2
HP-13	HP-13.jpg 22/08/2007	Soil sampling at F4-1 showing hole down to 45 cm – facing southeast.		Figure 2
HP-14	HP-14.jpg 22/08/2007	Soil sampling at F4-17 showing hole down to 50 cm – facing north.		Figure 2
HP-15	HP-15.jpg 22/08/2007	Soil sampling at F4-18 showing hole down to 50 cm.		Figure 2
HP-16	HP-16.jpg 22/08/2007	Showing F4-18 – facing south.		Figure 2
HP-17	HP-17.jpg 22/08/2007	Showing soil sampling station F4-19 – facing east.		Figure 2
HP-18	HP-18.jpg 22/08/2007	Soil sampling F4-20 showing hole down to 50 cm.		Figure 2
HP-19	HP-19.jpg 22/08/2007	Showing soil sampling station F4-20 – facing east.		Figure 2
HP-20	HP-20.jpg 23/08/2007	Attempting to remove obstruction from MW3 – facing southeast.		Figure 2
HP-21	HP-21.jpg 23/08/2007	Ice retrieved from the bottom of MW-3.		Figure 2

3.6 Thermal Monitoring Data

Not applicable to this landfill area.

3.7 Soil Sample Analytical Data

The surface (0-15cm) soil sample collected near MW-01 (downgradient) contains concentrations of Zn (62 mg/kg) that are higher in comparison to the other soil samples. These samples ranged from 17 to 40 mg/kg. Concentrations of Cr are generally low (from 15 to 29 mg/kg) for most of the soil samples, with the exception of subsurface soil sample MW-05 (51 mg/kg). The surface soil samples collected near MW-1 show a significant concentration of arsenic (50.7 mg/kg) in comparison to the other soil samples. The concentrations of Hg are below detection limit in all soil samples. The concentrations of the other metals are either low or below the detection limit in soil samples collected from the Helipad East and West landfills.

The chemical analyses for the soil samples from downgradient locations at Helipad Landfill East and West (F4-1, F4-18, F4-19, F4-20, MW-2) show fairly high TPH concentrations, more specifically for the F2 fraction (>1000 to 5720 mg/kg). The TPH concentrations in the subsurface soil samples are observed to be higher than the surface soil, with the exceptions of stations F4-1 and F4-19. Concentrations of TPH in soil samples collected from MW-1, MW-3, MW-5, MW-6 and F4-17 are either relatively low or below detection limit.

PCB concentrations are below detection limit in most of the soil samples with the exception of the MW-4 (0.7mg/kg – both depths), MW-5 (40-50cm) and F4-1 (40-50cm).

The soil sample analytical data is included in the following page as Table 3-6.

Table 3-6: Summary of 2006/2007 Soil Analytical Data - Helipad Landfills East and West

Sample #	Location	Depth (cm)	Cu [mg/kg]		Ni [mg/kg]		Co [mg/kg]		Cd [mg/kg]		Pb [mg/kg]		Zn [mg/kg]		Cr [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
HELIPAD LANDFILL - EAST UPGRADIENT																
MW-3(Soil)0-15cm	MW-3	0-15	18	13	7	10	2	3	<1	< 0.9	<10	<10	16	22	16	21
MW-3(Soil)40-50cm	MW-3	40-50	11	11	8	9	3	3	<1	<0.9	<10	<10	14	17	14	15
MW-4(Soil)0-15cm	MW-4	0-15	23	13	15	9	4	3	<1	< 0.9	15	<10	51	35	33	20
MW-4(Soil)40-50cm	MW-4	40-50	26	21	15	13	4	4	<1	< 0.9	11	11	51	49	35	31
HELIPAD LANDFILL - EAST DOWNGRADIENT																
MW-5 (Soil) 0-15cm	MW-5	0-15	16	14	15	10	5	3	<1	< 0.9	<10	<10	23	25	23	25
MW-5 (soil) 40-50cm	MW-5	40-50	12	31	11	11	4	3	<1	< 0.9	<10	11	17	40	17	51
F4-1 (Soil) 0-15cm	F4-1	0-15	20	19	18	19	5	5	<1	<0.9	12	<10	36	28	32	27
F4-1 (Soil) 40-50cm	F4-1	40-50	16	15	15	16	4	4	<1	< 0.9	<10	<10	28	24	25	26
HELIPAD LANDFILL - WEST DOWNGRADIENT																
MW-1(Soil)0-15cm	MW-1	0-15	15	13	13	13	4	4	<1	< 0.9	<10	<10	33	62	26	29
MW-1(Soil) 40-50cm	MW-1	40-50	20	10	18	9	5	3	<1	< 0.9	<10	<10	30	32	31	23
MW-2(Soil)0-15cm	MW-2	0-15	12	11	13	10	4	3	<1	< 0.9	<10	<10	24	24	26	25
MW-2(Soil)40-50cm	MW-2	40-50	21	13	21	12	6	3	<1	< 0.9	<10	<10	32	24	33	24
F4-17(Soil) 0-15cm	F4-17	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-17(Soil) 40-45cm	F4-17	40-45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-18(Soil) 0-15cm	F4-18	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-18(Soil) 40-50cm	F4-18	40-50	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-19(Soil)0-15cm	F4-19	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4- 19(Soil)40-45cm	F4-19	40-45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-20(Soil) 0-15cm	F4-20	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-20(Soil) 40-50cm	F4-20	30-40	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
HELIPAD LANDFILL - WEST UPGRADIENT																
MW-6(Soil)0-15 cm	MW-6	0-15	21	12	17	11	5	3	<1	< 0.9	<10	<10	30	25	34	27
MW-6(Soil)40-50cm	MW-6	40-50	13	5	12	9	3	2	<1	<0.9	<10	10	23	10	21	5

Notes

NV = No Value

ND = Non Detectable

Table 3-6: Summary of 2006/2007 Soil Analytical Data - Helipad Landfills East and West

Sample #	Location	Depth (cm)	As [mg/kg]		Hg [mg/kg]		PCBs [mg/kg]		F1 C_6-C_{10} [mg/kg]		F2 C_{10}-C_{16} [mg/kg]		F3 C_{16}-C_{34} [mg/kg]		TPH C_6-C_{34} [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
HELIPAD LANDFILL - EAST UPGRADIENT																
MW-3(Soil)0-15cm	MW-3	0-15	8.4	9.9	<0.04	< 0.04	<0.1	<0.1	<12	<11	20	<20	40	<20	60	ND
MW-3(Soil)40-50cm	MW-3	40-50	10.9	10.9	<0.04	< 0.04	<0.1	<0.1	<12	<10	<10	<20	30	<20	30	ND
MW-4(Soil)0-15cm	MW-4	0-15	37.2	14	0.05	< 0.04	1.0	0.7	<12	<11	100	24	210	78	310	102
MW-4(Soil)40-50cm	MW-4	40-50	18	13.5	0.14	< 0.04	0.9	0.7	<12	<11	220	137	210	141	430	278
HELIPAD LANDFILL - EAST DOWNGRADIENT																
MW-5 (Soil) 0-15cm	MW-5	0-15	9	12.6	<0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	<10	96	ND	96
MW-5 (soil) 40-50cm	MW-5	40-50	6	29.8	<0.04	< 0.04	<0.1	0.2	<12	<11	<10	37	<10	273	ND	310
F4-1 (Soil) 0-15cm	F4-1	0-15	16.8	11	<0.04	< 0.04	<0.1	<0.1	<12	82	20	5720	30	132	50	5934
F4-1 (Soil) 40-50cm	F4-1	40-50	14.2	8.5	<0.04	< 0.04	<0.1	0.1	<12	96	130	3660	40	128	170	3884
HELIPAD LANDFILL - WEST DOWNGRADIENT																
MW-1(Soil)0-15cm	MW-1	0-15	81.4	50.7	<0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	20	32	20	32
MW-1(Soil) 40-50cm	MW-1	40-50	9.3	7.8	<0.04	< 0.04	<0.1	<0.1	<12	<11	20	<20	50	51	70	51
MW-2(Soil)0-15cm	MW-2	0-15	12.8	21.2	<0.04	< 0.04	<0.1	<0.1	<12	12	90	320	70	20	160	352
MW-2(Soil)40-50cm	MW-2	40-50	11.5	8.2	<0.04	< 0.04	<0.1	<0.1	60	99	920	3300	60	87	1040	3486
F4-17(Soil) 0-15cm	F4-17	0-15	NV	NV	NV	NV	NV	NV	<12	<11	10	21	10	<20	20	21
F4-17(Soil) 40-45cm	F4-17	40-45	NV	NV	NV	NV	NV	NV	<12	<11	10	<20	<10	<20	10	ND
F4-18(Soil) 0-15cm	F4-18	0-15	NV	NV	NV	NV	NV	NV	<12	29	140	3010	420	86	560	3125
F4-18(Soil) 40-50cm	F4-18	40-50	NV	NV	NV	NV	NV	NV	97	40	420	3210	50	76	567	3326
F4-19(Soil)0-15cm	F4-19	0-15	NV	NV	NV	NV	NV	NV	<12	<11	1670	4640	430	253	2100	4893
F4- 19(Soil)40-45cm	F4-19	40-45	NV	NV	NV	NV	NV	NV	66	34	2560	<20	650	<20	3276	34
F4-20(Soil) 0-15cm	F4-20	0-15	NV	NV	NV	NV	NV	NV	<12	42	360	612	390	67	750	721
F4-20(Soil) 40-50cm	F4-20	30-40	NV	NV	NV	NV	NV	NV	96	133	6940	1500	420	23	7456	1656
HELIPAD LANDFILL - WEST UPGRADIENT																
MW-6(Soil)0-15 cm	MW-6	0-15	13	9.5	<0.04	< 0.04	ND	<0.1	<12	<11	310	<20	200	53	510	53
MW-6(Soil)40-50cm	MW-6	40-50	9.6	2.4	<0.04	< 0.04	ND	<0.1	<12	<11	60	<20	70	50	130	50

Notes

NV = No Value

ND = Non Detectable

3.8 Groundwater Sample Analytical Data

The 2007 groundwater results from MW-05 indicate concentrations of Zn (0.18 mg/L) and Cr (0.005mg/kg) lower than are lower than the previous year reuslts. The Cu concentration in the groundwater sample from MW-2 is considerably lower (0.009 mg/L) than the 2006 result (0.098 mg/L). The concentrations of the other metals are either low or non-detect in the groundwater samples.

The concentrations of PCBs are below detection limit in all the groundwater samples analyzed.

The TPH concentrations are non-detectable in the groundwater samples with the exception of MW-2 (0.6 mg/L).

The groundwater sample analytical data is included on the following page as Table 3-7.

Table 3-7: Summary of 2006/2007 Groundwater Analytical - Helipad Lanfills East and West

Sample #	Location	Groundwater Elevation (masl)	Cu [mg/L]		Ni [mg/L]		Co [mg/L]		Cd [mg/L]		Pb [mg/L]		Zn [mg/L]		Cr [mg/L]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
HELIPAD LANDFILL - EAST UPGRADIENT																
MW-3	MW-3	-	0.013	NV	0.04	NV	0.002	NV	<0.001	NV	0.02	NV	0.99	NV	0.028	NV
MW-4	MW-4	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
HELIPAD LANDFILL - EAST DOWNGRADIENT																
MW-5	MW-5	-	0.012	0.005	0.05	0.013	0.003	0.004	<0.001	<0.001	0.03	0.002	1.39	0.18	0.043	0.005
HELIPAD LANDFILL - WEST DOWNGRADIENT																
MW-1	MW-1	-	0.009	0.002	0.03	0.036	0.007	0.01	<0.001	<0.001	0.01	0.003	0.47	0.39	0.009	0.005
MW-2	MW-2	-	0.098	0.009	0.01	0.009	0.01	0.017	<0.001	<0.001	0.01	0.001	0.58	0.08	0.009	0.005
HELIPAD LANDFILL - WEST UPGRADIENT																
MW-6	MW-6	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV

Notes

NV = No Value

ND = Non - Detectable

Table 3-7: Summary of 2006/2007 Groundwater Analytical - Helipad Lanfills East and West

Sample #	Location	Groundwater Elevation (masl)	As [mg/L]		Hg [mg/L]		PCBs [ug/L]		F1		F2		F3		TPH	
									C_6-C_{10} [ug/L]		C_{10}-C_{16} [mg/L]		C_{16}-C_{34} [mg/L]		C_6-C_{34} [mg/L]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
HELIPAD LANDFILL - EAST UPGRADIENT																
MW-3	MW-3	-	0.001	NV	<0.0002	NV	<0.1	NV	<25	NV	<0.1	NV	<0.1	NV	<0.1	NV
MW-4	MW-4	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
HELIPAD LANDFILL - EAST DOWNGRADIENT																
MW-5	MW-5	-	0.002	0.001	<0.0002	<0.0001	<0.1	ND	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
HELIPAD LANDFILL - WEST DOWNGRADIENT																
MW-1	MW-1	-	0.002	0.002	<0.0002	<0.0001	<0.1	ND	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
MW-2	MW-2	-	0.014	0.018	<0.0002	<0.0001	<0.1	ND	159	132	0.8	0.6	<0.1	<0.1	0.959	0.732
HELIPAD LANDFILL - WEST UPGRADIENT																
MW-6	MW-6	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV

Notes

NV = No Value

ND = Non - Detectable

3.9 Monitoring Well Sampling Logs

The groundwater monitoring well sampling logs are included in the following pages as Table 3-8 to 3-13.

Table 3-8: Monitoring Well Sampling Log MW 1 - Helipad Landfills East and West

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/8/2007	Time:	15:18
Names of Samplers:	R.F		
Landfill Name:	Helipad Landfill West		
Monitoring Well ID:	MW-1		
Well Sampling Event:	2007	Sample Number:	MW-1
Condition of Well:	Bentonite swelled to lid	Procedure/Equipment:	Bailer
Volume Purged Water (L):	1.5	Purging (Y/N):	Y
Sampling Equipment:	Bailer	Ofalctory/Visual observations	Mild HC odour
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	8		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	47	from ground surface	39
Depth to bottom (cm):	153	Evidence of sludge etc:	no
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	5.46/ 5.84/ 5.9/ 5.9/ 5.89		
Conductivity (µS/cm) :	143/ 141/ 144/ 143/ 144		
Temperature (^{O}C):	2.3/ 2.6/ 2.0/ 2.0/ 2.0		
Depth of water (cm):	106		
Well volume of water (mL):	Approximatly 4 cm of water in well		
Length screen collecting water:			
Shape factor:			

Table 3-9: Monitoring Well Sampling Log MW 2 - Helipad Landfills East and West

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/08/2007	Time:	12:00
Names of Samplers:	R.F.		
Landfill Name:	Helipad Landfill West		
Monitoring Well ID:	MW-2		
Well Sampling Event:	2007	Sample Number:	MW-2
Condition of Well:	Bentonite surged to well	Procedure/Equipment:	Bailer
Volume Purged Water (L):	3	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	6		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	Electric Meter
(from top of pipe)			
Static water level (cm):	65	from ground surface	59
Depth to bottom (cm):	172.5	Evidence of sludge etc:	No
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	Paste
pH:	5.23/ 5.88/ 6.38/ 6.44/ 6.30/ 6.52		
Conductivity (µS/cm) :	248/ 255/ 254/ 256/ 256/ 257		
Temperature (^{O}C):	2.8/ 2.6 /2.5 /2.3/ 2.3/ 2.2		
Depth of water (cm):	107.5		
Well volume of water (mL):	Approximatly 4 cm of water in well		
Length screen collecting water:			
Shape factor:			

Table 3-10: Monitoring Well Sampling Log MW 3 - Helipad Landfills East and West

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/08/2007	Time:	12:30
Names of Samplers:	R. F.		
Landfill Name:	Helipad East		
Monitoring Well ID:	MW-3		
Well Sampling Event:	2007	Sample Number:	-
Condition of Well:	Obstruction in the well. Ice found at the bottom of well.	Procedure/Equipment:	
Volume Purged Water (mL):	Well is dry	Purging (Y/N):	-
Sampling Equipment:	-		
Filtration (Y/N):	-	Acidification (Y/N):	-
Decontamination required (Y/N):	-	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	8*		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)	-		
Static water level (cm):	-	from ground surface	
Depth to top of bailer (cm):	-	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	-	Method (electric meter, steel tape, etc):	
pH:	-		
Conductivity (µS/cm) :	-		
Temperature (^{O}C):	-		
Depth of water (cm):	-		
Well volume of water (mL):	-		
Length screen collecting water:	-		
Shape factor:	-		

Note:

* The well height above ground is higher than that provided in the TOR. This is due to the reason that the well casing was possibly lifted up to remove bentonite and make room for the casing by the field personnel during the previous monitoring in 2005.

Table 3-11: Monitoring Well Sampling Log MW 4 - Helipad Landfills East and West

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23-08-2007	Time:	11:30
Names of Samplers:	R.F.		
Landfill Name:	Helipad East		
Monitoring Well ID:	MW-4		
Well Sampling Event:	2007	Sample Number:	-
Condition of Well:	Obstruction in the well	Procedure/Equipment:	-
Volume Purged Water (L):	Dry well	Purging (Y/N):	-
Sampling Equipment:	-		
Filtration (Y/N):	-	Acidification (Y/N):	-
Decontamination required (Y/N):	-	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	10		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)	-		
Static water level (cm):	-	from ground surface	
Depth to bottom (cm):	-	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	-	Method (electric meter, steel tape, etc):	
pH:	-		
Conductivity (µS/cm) :	-		
Temperature (^{O}C):	-		
Depth of water (cm):	-		
Well volume of water (mL):	Approximatly 4 cm of water in well		
Length screen collecting water:	-		
Shape factor:	-		

Table 3-12: Monitoring Well Sampling Log MW 5 - Helipad Landfills East and West

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/08/2007	Time:	10:45
Names of Samplers:	R.F.		
Landfill Name:	Helipad Landfill west		
Monitoring Well ID:	MW-5		
Well Sampling Event:	2007	Sample Number:	MW-5
Condition of Well:	Bentonite heaved to cap. Obsstruction in the well.	Procedure/Equipment:	Bailers
Volume Purged Water (L):	1	Purging (Y/N):	Y
Sampling Equipment:	Bailers		
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	N

Measured Data

Well height above ground (cm):	8		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	90.7	Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	98.7	from ground surface	86.7
Depth to top of bailer (cm):	119	Evidence of sludge etc:	NA
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	4.93/ 5.59/ 5.81/ 5.99/ 6.04		
Conductivity (µS/cm) :	162/ 146/ 145/ 145/ 146		
Temperature (^{O}C):	3.0/ 1.6/ 1.6/ 1.5/ 1.5		
Depth of water (cm):	20.3		
Well volume of water (mL):	1218		
Length screen collecting water:			
Shape factor:			

Table 3-13: Monitoring Well Sampling Log MW 6 - Helipad Landfills East and West

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/08/07	Time:	10:45
Names of Samplers:	R.F.		
Landfill Name:	Helipad Landfill west		
Monitoring Well ID:	MW-6		
Well Sampling Event:	2007	Sample Number:	-
Condition of Well:	Bentonite swelled to cap. Obstruction in the well. Ice found in bottom of well. Bailer frozen.	Procedure/Equipment:	-
Volume Purged Water (mL):	-	Purging (Y/N):	-
Sampling Equipment:	-		
Filtration (Y/N):	-	Acidification (Y/N):	-
Decontamination required (Y/N):	-	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	7		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	
Depth to water surface (cm):	-	Method (electric meter, steel tape, etc):	
(from top of pipe)	-		
Static water level (cm):	-	from ground surface	
Depth to bottom (cm):	-	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	-	Method (electric meter, steel tape, etc):	
pH:	-		
Conductivity (µS/cm) :	-		
Temperature (^{O}C):	-		
Depth of water (cm):	-		
Well volume of water (mL):	-		
Length screen collecting water:	-		
Shape factor:	-		

Note:

* The well height above ground is higher than that provided in the TOR. This is due to the reason that the well casing was possibly lifted up to remove bentonite and make room for the casing by the field personnel during the previous monitoring in 2005.

4.0 BARREL DUMP LANDFILL

4.1 Summary

The Barrel Dump Landfill is a small landfill located at the Upper Site, north-west of SRR facilities and Helipad Landfills East and West. It covers an area of approximately 200 m^2.

The monitoring of the Barrel Dump Landfill included visual inspection to monitor evidence of settlement or erosion, and collection of soil samples to monitor for the presence of leachate. Surface and subsurface samples were analyzed for all parameters (total metals, PCBs and TPH) or TPH only as specified by DCC. Soil sample locations are identified in Figure 3 FOX-4 Cape Hooper – Barrel Dump Landfill. There are no monitoring wells in this area.

The soil analytical data is presented in Tables 4-4. Soil at all stations was sampled as specified in the Terms of Reference.

The visual inspection report, including supporting photos and drawing, is presented in the following pages.

4.2 Visual Inspection Report

The visual inspection of the Barrel Dump landfill was conducted on August 23, 2007. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material containing boulders and cobbles. The boulder and cobble material is generally angular, and the gravel and sand particles are generally well rounded.

Settlement

Indications of consolidation or differential settlement were not noted.

Erosion

Erosion along the slope of the west edge of the landfill appears to be active. The material present at the surface of the west slope is intermixed colluvium and gravel. The slope may be more susceptible to erosion as these materials appear to be at their maximum angle of repose. The erosion has exposed debris along the west slope.

Frost Action

No frost action was observed in the surface or subsurface soil at the Barrel Dump Landfill during the 2007 sampling program.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted.

Re-establishment of Vegetation

Based on the regional setting of this landfill, re-establishment of vegetation is not likely.

Staining

The stained areas, designated ST3-1 and ST3-2 are presented in Figure 3 FOX-4 Cape Hooper – Barrel Dump Landfill. There is staining occurring at the top of the landfill, ST3-1 and on the west slope of the landfill. The staining is associated with seepage and ponding of water.

Seepage Points

Ponding of water is occurring at the top of the landfill and seepage from the landfill is occurring on the west slope of the landfill. The seepage and ponding are coincident with the observed staining.

Debris

Debris is visible on the top of the landfill and on the west slope of the landfill.

Discussion

The west slope of the landfill appears to be at its maximum angle of repose and erosion of these materials appears to be occurring. Debris is visible on the west slope and at the top of the landfill. Re-contouring or retaining the slope is one method that can be used to help reduce erosion and debris exposure. Based on the erosion of the west slope and the fact that the west slope is at its maximum angle of repose, the performance of the landfill with respect to containment was rated as marginal. Visual inspection report, including supporting photos and drawing, is presented on the following pages.

Table 4-1: Visual Inspection Checklist – Inspection Report – Barrel Dump Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **BARREL DUMP LANDFILL**
LANDFILL DESIGNATION: Landfill, Upper Site, North of SRR
DATE OF INSPECTION: August 23, 2007
DATE OF PREVIOUS INSPECTION: August 25, 2006
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	NO								
Erosion	YES	Erosion appears to be active on the slope located west side of the landfill. E3-1 For locations, refer to Figure 3 FOX-4 Cape Hooper-Barrel Dump.	15 m	15 m	0.2 m		The slope is likely at the maximum angle of repose for a colluvium like material present on the slope.	Photograph: 3D7, 3E7 For location and direction of photograph refer to Figure 3 Fox -4 Cape Hooper-Barrel Dump.	Much of erosion is outside the boundaries of the landfill, but the erosion directly impacts the integrity of the landfill as this down-gradient debris acts to counter weight and support the landfill slope.
Frost Action	NO	Frost action was not noted. The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.							
Sloughing and Cracking									
Animal Burrows	NO								
Vegetation	NO	No vegetation was observed at the upper site. It was noted that the lack of vegetation is consistent with the natural setting.							
Staining	YES	ST3-1 ST3-2 For locations, refer to Figure 3 FOX-4 Cape Hooper-Barrel Dump.	5 m 10 m	4 m 0.5 m		20% 30%	Staining was noted to be less visible but to occupy a larger area than in 2006	Photographs:3A7, 3B7, 3F7, 3G7 For locations and directions of photograph refer to Figure 3 Fox -4 Cape Hooper-Barrel Dump.	
Vegetation Stress	NO	No vegetation was observed at the upper site.							
Seepage Points	YES	Seepage points coincide with staining locations.					Where there was staining there was an associated seepage point.	Photographs: 3A7, 3B7 For locations and directions of photograph refer to Figure 3 Fox -4 Cape Hooper-Barrel Dump.	
Debris Exposed	YES	Debris is visible at the top of the landfill and on the west slope of the landfill						Photographs: 3A7, 3C7, 3D7, 3E7, 3F7, 3G7 For locations and directions of photograph refer to Figure 3 Fox -4 Cape Hooper-Barrel Dump Landfill.	
Presence/Condition – Monitoring Instruments	YES	Refer to Figure 3 FOX-4 Cape Hooper-Barrel Dump						For locations and directions of photograph refer to Figure 3 Fox -4 Cape Hooper-Barrel Dump.	
Features of Note.	NO								

4.3 Preliminary Stability Assessment

The Preliminary Stability Assessment for the Barrel Dump Landfill has been completed as per the Terms of Reference and is included as Tables 4-2 of this report.

Table 4-2: Preliminary Stability Assessment – Barrel Dump Landfill

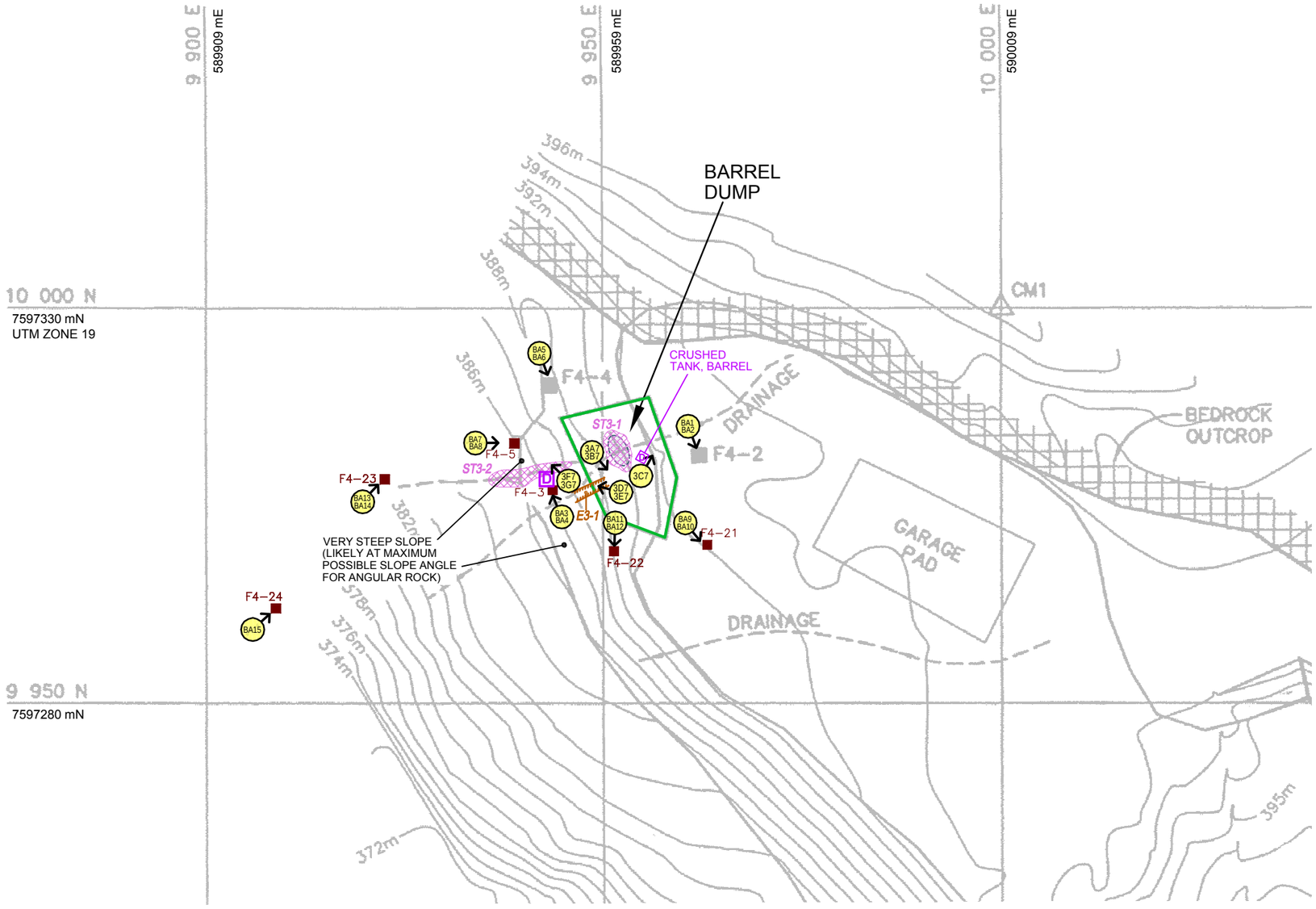
Feature	Severity Rating	Extent
Settlement	Not Observed	None
Erosion	Acceptable	Occasional
Frost Action	Not Observed	None
Staining	Acceptable	Occasional
Vegetation Stress	Acceptable	Occasional
Seepage / Ponded Water	Acceptable	Occasional
Debris Exposure	Marginal	Numerous
Overall Landfill Performance	**Marginal**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

4.4 Location Plan

The Location Plan for the Barrel Dump Landfill has been completed as per the Terms of Reference and is included in the following page as Figure 3 FOX-4 Cape Hooper – Barrel Dump Landfill.



LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

- CM1 SURVEY CONTROL MONUMENT
- TBM5 TEMPORARY BENCHMARK
- MONITORING WELL LOCATION
- SOIL SAMPLE
- LANDFILL BOUNDARY (APPROXIMATE)

2007 OBSERVATIONS:

- ST3-1 STAINS
- D DEBRIS
- E3-1 EROSION
- POOLING
- SINKHOLE
- 3A7 3B7 PHOTOGRAPH LOCATION (INDICATING PHOTO NUMBER, LOCATION, VIEWING DIRECTION)

TEMPORARY BENCHMARKS				
NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
5	9 938.442	10 120.491	388.170	CROSS CUT IN ROCK
7	9 873.107	9 999.103	388.170	NAIL

SURVEY CONTROL MONUMENTS				
NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
CM1	10 000.000	10 000.000	397.575	FOX-4 BASELINE STA. 0+00

MONITORING WELLS		
NO.	COORDINATES	
	NORTHING	EASTING
MW-1	9 839.1	9 997.6
MW-2	9 901.6	9 977.5
MW-3	9 878..9	10 074.0
MW-4	9 930.8	10 040.0
MW-5	9 958.9	10 058.0
MW-6	9 917.3	10 008.5

NOTE:
THE RESURGENCES ARE DRAWN TO APPROXIMATE SHAPES AS THEY ARE HIGHLY IRREGULAR.

RESURGENCES		
NO.	DIMENSIONS (m)	REF PHOTO
R-1	2,5 x 3,0	60A
R-2	2,5 x 4,0	60B
R-3	2,5 x 3,0	60C
R-4	1,5 x 2,0	60D
R-5	1,0 x 3,0	60E

Title:
FOX-4 CAPE HOOPER - BARREL DUMP LANDFILL

Project:
FOX-4 CAPE HOOPER
DEW LINE CLEAN UP
LANDFILL MONITORING PLAN

Date:
NOVEMBER 2007

Client:
DEFENCE CONSTRUCTION CANADA

SCALE 1:600
10 5 0 10 20 30
metres

FIGURE 3

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-2-BarrelDumpLandfill.dwg

4.5 Photographic Records

The Photographic Record for the Barrel Dump Landfill has been completed as per the Terms of Reference and is included in the following page as Table 4-3. The Photographic Record only contains an index and “thumbnail” photographs; full sized photographs are contained in the Addendum CD-ROM.

Table 4-3 Photographic Record - Barrel Dump Landfill

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
3A7	3A7.jpg 2007-08-23	Close up view of reddish soil staining observed at 589958E/7597312N. Camera facing East.		Figure 3
3B7	3B7.jpg 2007-08-23	View of standing water. The water is staining the soil red. The white card located at 589958E/7597312N. Camera facing South-East.		Figure 3
3C7	3C7.jpg 2007-08-23	Close up of crushed barrels. Note the adjacent rock staining. The white card is located at 589965E/7597311N. Camera facing North-East.		Figure 3
3D7	3D7.jpg 2007-08-23	Close up view of barrel and metal debris observed at 589960E/7597309N. Camera facing North-West.		Figure 3
3E7	3E7.jpg 2007-08-23	Wide angle view of barrel and metal debris observed at 589960E/7597309N. Camera facing North-West.		Figure 3
3F7	3F7.jpg 2007-08-23	Close up view of reddish staining observed at 589953E/7597307N. Camera facing North-West		Figure 3
3G7	3G7.jpg 2007-08-23	Wide angle view of reddish staining. White card is 21cm by 28cm and located at 589953E/7597307N. Camera facing North-West		Figure 3
BA-1	BA-1.jpg 22/08/2007	Soil sampling location F4-2 showing hole depth to 50 cm.		Figure 3
BA-2	BA-2.jpg 22/08/2007	Soil sample location F4-2 – facing east.		Figure 3
BA-3	BA-3.jpg 22/08/2007	Soil sampling location F4-3 showing hole depth to 50 cm.		Figure 3
BA-4	BA-4.jpg 22/08/2007	Soil sample location F4-3 – facing northwest.		Figure 3
BA-5	BA-5.jpg 22/08/2007	Soil sampling location F4-4 showing hole depth to 50 cm.		Figure 3

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
BA-6	BA-6.jpg 22/08/2007	Soil sample location F4-4 – facing southeast.		Figure 3
BA-7	BA-7.jpg 22/08/2007	Soil sampling location F4-5 showing hole depth to 43 cm.		Figure 3
BA-8	BA-8.jpg 22/08/2007	Soil sample location F4-5 – facing east.		Figure 3
BA-9	BA-9.jpg 22/08/2007	Soil sampling location F4-21 showing hole depth to 50 cm.		Figure 3
BA-10	BA-10.jpg 22/08/2007	Soil sample location F4-21 – facing southeast.		Figure 3
BA-11	BA-11.jpg 22/08/2007	Soil sampling location F4-22 showing hole depth to 50 cm.		Figure 3
BA-12	BA-12.jpg 22/08/2007	Soil sample location F4-22 – facing south.		Figure 3
BA-13	BA-13.jpg 22/08/2007	Soil sampling location F4-23 showing hole depth to 24 cm.		Figure 3
BA-14	BA-4.jpg 22/08/2007	Soil sample location F4-23 – facing north.		Figure 3
BA-15	BA-15.jpg 22/08/2007	Soil sampling location F4-24 showing hole depth to 50 cm.		Figure 3

4.6 Thermal Monitoring Data

Not applicable to this landfill area.

4.7 Soil Sample Analytical Data

The concentrations of Cd, Pb and Hg are in general non-detect in the soil samples analyzed for total metals. The surface (0-15 cm depth) soil collected near F4-5 (downgradient) show a concentration of Zn at the same range as the other soil samples. The subsurface soil sample collected from F4-3 (downgradient) contain a concentration of As nearly 20 times higher (531 mg/kg) than the other soil samples, which range from 12 to 16.4 mg/kg. The concentrations of the other metals analyzed are considered to be low in the soil samples.

PCB concentrations are generally lower than the detection limit in the soil samples except for the surface (0.1 mg/kg) and subsurface (0.2 mg/kg) samples from F4-3.

TPH concentrations in soil samples from both upgradient and downgradient locations are considerably high, ranging from 1640 mg/kg to 16600 mg/kg (F4-24). Among the three hydrocarbon fractions, F2 shows the highest concentration in the soil samples, followed by F3 and F1. In the downgradient soil samples, the subsurface layer contains consistently higher TPH concentrations than the surface layer.

The soil sample analytical data is included in Table 4-4.

Table 4-4: Summary of 2006/2007 Soil Analytical Data - Barrel Dump Landfill

Sample #	Location	Depth (cm)	Cu [mg/kg]		Ni [mg/kg]		Co [mg/kg]		Cd [mg/kg]		Pb [mg/kg]		Zn [mg/kg]		Cr [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
BARREL DUMP UPGRADIENT																
F4-2 (Soil)0-15cm	F4-2	0-15	20	12	21	10	6	3	<1	< 0.9	<10	<10	30	23	32	23
F4-2 (Soil)40-50cm	F4-2	40-50	20	16	23	14	7	4	<1	< 0.9	<10	30	33	27	37	30
F4-21(Soil)0-15cm	F4-21	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-21(Soil)40-50cm	F4-21	40-45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
BARREL DUMP DOWNGRADIENT																
F4-3 (Soil)0-15cm	F4-3	0-15	29	33	21	27	6	7	<1	<0.9	<10	<10	31	38	34	41
F4-3 (Soil)40-45cm	F4-3	40-45	25	34	20	45	5	11	<1	<0.9	<10	<10	26	37	32	42
F4-4 (Soil)0-15cm	F4-4	0-15	24	28	23	26	7	7	<1	<0.9	<10	<10	32	40	32	37
F4-4 (Soil)40-45cm	F4-4	40-45	24	32	23	24	7	6	<1	<0.9	<10	<10	35	35	34	37
F4-5 (Soil)0-15cm	F4-5	0-15	25	33	23	26	8	6	<1	<0.9	<10	<10	73	36	33	43
F4-5 (Soil)40-45cm	F4-5	40-45	21	34	19	27	5	7	<1	<0.9	<10	<10	48	38	27	47
F4-22(Soil)0-15cm	F4-22	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-22(Soil)40-45cm	F4-22	40-45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-23(Soil)0-15cm	F4-23	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-23(Soil)40-50cm	F4-23	40-50	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-24(Soil)0-15cm	F4-24	0-15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
F4-24(Soil) 40-50cm	F4-24	30-40	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV

Notes

NV = No Value

ND = Non Detectable

Table 4-4: Summary of 2006/2007 Soil Analytical Data - Barrel Dump Landfill

Sample #	Location	Depth (cm)	As [mg/kg]		Hg [mg/kg]		PCBs [mg/kg]		F1 C_6-C_{10} [mg/kg]		F2 C_{10}-C_{16} [mg/kg]		F3 C_{16}-C_{34} [mg/kg]		TPH C_6-C_{34} [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
BARREL DUMP UPGRADIENT																
F4-2 (Soil)0-15cm	F4-2	0-15	23.5	12	<0.04	0.04	<0.1	<0.1	153	<11	8740	245	620	59	9513	304
F4-2 (Soil)40-50cm	F4-2	40-50	24.2	15	<0.04	< 0.04	<0.1	<0.1	436	23	4880	1580	270	59	5586	1662
F4-21(Soil)0-15cm	F4-21	0-15	NV	NV	NV	NV	NV	NV	23	120	4170	9150	860	1150	5053	10420
F4-21(Soil)40-50cm	F4-21	40-45	NV	NV	NV	NV	NV	NV	185	142	2670	6380	220	235	3075	6757
BARREL DUMP DOWNGRADIENT																
F4-3 (Soil)0-15cm	F4-3	0-15	12.6	14.3	<0.04	<0.04	<0.1	0.1	<12	41	1990	5050	670	295	2660	5386
F4-3 (Soil)40-45cm	F4-3	40-45	12.2	531	<0.04	<0.04	<0.1	0.2	139	76	5220	7510	1100	668	6320	8254
F4-4 (Soil)0-15cm	F4-4	0-15	14.8	14.6	<0.04	<0.04	<0.1	<0.1	<12	14	<10	3150	<10	489	<10	3653
F4-4 (Soil)40-45cm	F4-4	40-45	14.4	13.4	<0.04	<0.04	<0.1	<0.1	<12	<11	<10	2390	<10	731	<10	3121
F4-5 (Soil)0-15cm	F4-5	0-15	12.6	15	<0.04	<0.04	<0.1	<0.1	<12	25	50	8100	160	452	210	8577
F4-5 (Soil)40-45cm	F4-5	40-45	10	16.4	<0.04	<0.04	<0.1	<0.1	32	22	3120	9440	450	818	3602	10280
F4-22(Soil)0-15cm	F4-22	0-15	NV	NV	NV	NV	NV	NV	<12	58	830	3450	920	343	1750	3851
F4-22(Soil)40-45cm	F4-22	40-45	NV	NV	NV	NV	NV	NV	22	14	1510	6800	520	509	2052	7323
F4-23(Soil)0-15cm	F4-23	0-15	NV	NV	NV	NV	NV	NV	<12	<12	1500	11900	250	4660	1750	16560
F4-23(Soil)40-50cm	F4-23	40-50	NV	NV	NV	NV	NV	NV	29	NV	2950	NV	270	NV	3249	NV
F4-24(Soil)0-15cm	F4-24	0-15	NV	NV	NV	NV	NV	NV	19	<11	2930	2400	1740	204	4670	2604
F4-24(Soil) 40-50cm	F4-24	30-40	NV	NV	NV	NV	NV	NV	66	24	5160	4640	1430	231	6656	4895

Notes

NV = No Value

ND = Non Detectable

4.8 Groundwater Sample Analytical Data

There are no monitoring wells in the Barrel Dump Landfill area.

4.9 Monitoring Well Sampling Logs

There are no monitoring wells in the Barrel Dump Landfill area.

5.0 STATION AREA LANDFILL

5.1 Summary

The Station Area Landfill is a new landfill constructed for the disposal of demolition and site waste generated during the site clean-up. It is located at the Upper Site, east of the SRR facilities. Its surface area is approximately 1400 m^2.

The monitoring of this landfill includes visual inspection to verify for evidence of settlement or erosion and collection of soil and groundwater samples to monitor for the presence of leachate. Groundwater monitoring well locations, as well as soil sample locations, are identified on Figure 4 FOX-4 Cape Hooper – Station Area Landfill.

The soil and groundwater analytical data are presented in Tables 5-4 and 5-5 respectively.

The visual inspection report, including supporting photos and drawings, is presented in the following pages.

5.2 Visual Inspection Report

The visual inspection of the Station Area landfill was conducted on August 23, 2007. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material with trace cobbles.

Settlement

Sinkholes were observed on the top of the landfill and to the west of the landfill. It is believed that these sinkholes are a combination of settlement and piping. The material at the surface is being washed into voids beneath the surface. The location of these sinkholes is presented in Figure 4 FOX-4 Cape Hooper – Station Area Landfill.

Erosion

Erosion of the capping material was not noted.

Frost Action

The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted.

Re-establishment of Vegetation

Based on the regional setting of this landfill reestablishment of vegetation is not likely.

Staining

The stained areas, are presented on Figure 4, FOX-4 Cape Hooper – Station Area Landfill. Areas of staining appeared to have increased slightly since the 2006 landfill visual inspection. Some areas of staining appear to have amalgamated. UTM coordinates at various reference points were collected and the gridlines UTM coordinates were added to the drawing. Based on the positioning information some of the 2006 stain locations were adjusted. In addition it appears that the area reported as ST4-3 was incorrectly located, the figure has been corrected. The labeling has been adjusted to reflect the amalgamation. The staining appears reddish in color. However the areas with a noticeable iridescent sheen were less than what was observed in 2006.

Seepage Points

The number of seepage points is unchanged from the previous 2006 visual inspection.

Debris

Exposed debris was not noted.

Discussion

The Station Area Landfill performance with respect to containment of the debris within the landfill is rated as acceptable. The visual inspection report, including supporting photos and drawing, is presented on the following pages.

Table 5-1: Visual Inspection Checklist – Inspection Report – Station Area Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **STATION AREA LANDFILL**
LANDFILL DESIGNATION: Landfill, Upper Site, South of SRR
DATE OF INSPECTION: August 23, 2007
DATE OF PREVIOUS INSPECTION: August 22, 2007
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of the their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	YES	Sinkholes and settlement were noted in fill material and material down gradient of the landfill on the west portion of the landfill. For locations refer to Figure 4 Fox -4 Cape Hooper-Station Area.	2m .75m	0.5 m .5m	1% <1%			Photographs: 4N7, 4R7, 4S7. For locations and directions of photograph refer to Figure 4 Fox -4 Cape Hooper-Station Area.	
Erosion	NO								
Frost Action	NO	Frost action was not noted. The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.							
Sloughing and Cracking	NO								
Animal Burrows	NO								
Vegetation	NO	No vegetation was observed at the upper site. It was noted that the lack of vegetation is consistent with the natural setting.							
Staining	YES	ST4-1/2/3/5 ST4-4 ST4-6 For locations refer to Figure 4 Fox -4 Cape Hooper-Station Area.	110 m 25 m 55 m	8 m 8 m 5 m	63% 14% 20%		Staining from seepage was noted and the affected area appears to have increased slightly from the previous year (2006).	Photographs: 4A7, 4B7, 4C7, 4D7, 4E7, 4F7, 4G7, 4H7, 4I7, 4J7, 4K7, 4L7, 4M7, 4O7, 4P7, 4Q7 For locations and directions of photograph refer to Figure 4 Fox -4 Cape Hooper-Station Area.	
Vegetation Stress	NO	No vegetation was observed at the upper site.							
Seepage Points	YES	Seepage points coincide with staining locations.					Where there was staining there was an associated seepage point.	Photographs: 4A7, 4B7, 4C7, 4D7, 4E7, 4F7, 4G7, 4H7, 4I7, 4J7, 4K7, 4L7, 4M7, 4O7, 4P7, 4Q7 For locations and directions of photograph refer to Figure 4 Fox -4 Cape Hooper-Station Area.	
Debris Exposed	NO								
Presence/Condition – Monitoring Instruments	YES	Refer to Figure 4 Fox-4Cape Hooper – Station Area							
Features of Note.	YES	In the pond north of the landfill							Debris is visible in the pond area north of the landfill

5.3 Preliminary Stability Assessment

The Preliminary Stability Assessment for the Station Area Landfill has been completed as per the Terms of Reference and is included as Tables 5-2 of this report.

Table 5-2: Preliminary Stability Assessment – Station Area Landfill

Feature	Severity Rating	Extent
Settlement	Acceptable	Isolated
Erosion	Acceptable	Isolated
Frost Action	Not Observed	None
Staining	Acceptable	Numerous
Vegetation Stress	Not Observed	None
Seepage / Ponded Water	Acceptable	Numerous
Debris Exposure	Acceptable	Isolated
Overall Landfill Performance	**Acceptable**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

5.4 Location Plan

The Location Plan for the Station Area Landfill has been completed as per the Terms of Reference and is included in the following page as Figure 4 FOX-4 Cape Hooper – Station Area Landfill.

MONITORING WELLS		
NO.	COORDINATES	
	NORTHING	EASTING
MW-7	9 692.0	10 422.9
MW-8	9 726.2	10 297.7
MW-9	9 736.8	10 338.0

COORDINATE POINTS			
NO.	NORTHING	EASTING	ELEV.
101	9 721.3	10 358.1	386.3
102	9 704.3	10 390.6	386.0
103	9 691.0	10 385.5	386.8
104	9 696.5	10 347.8	386.3

LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

- TBM3 TEMPORARY BENCHMARK
- MONITORING WELL LOCATION
- 101 COORDINATE POINT
- SOIL SAMPLE
- LANDFILL BOUNDARY (APPROXIMATE)

TEMPORARY BENCHMARKS				
NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
3	9 695.382	10 473.854	398.519	CROSS CUT IN ROCK
4	9 833.172	10 278.429	394.655	CROSS CUT IN ROCK

2007 OBSERVATIONS:

- ST4-1 STAINS
- D DEBRIS
- EROSION
- POOLING
- SINKHOLE
- 4A7 4B7 PHOTOGRAPH LOCATION (INDICATING PHOTO NUMBER, LOCATION, VIEWING DIRECTION)

10 300 E 590344 mE
10 350 E 590394 mE
10 400 E 590444 mE
10 450 E 590494 mE
10 500 E 590544 mE
10 550 E 590594 mE
9 800 N 7597157 mN UTM ZONE 19
9 750 N 7597107 mN
9 700 N 7597057 mN
9 650 N 7597007 mN

TBM4
TBM3
ST4-1/5
ST4-4
ST4-6
POOLING AREA
STATION AREA LANDFILL
MW-9
MW-8
MW-7
FUEL SHEEN AND FUEL ODOUR DETECTED
WAREHOUSE FOUNDATION
UPPER SITE DUMP AREA
101
102
4N7 4M7 4I7 4G7 4H7 4F7 4E7 4K7 4L7 4J7 4P7 4O7 4C7 4D7 4A7 4B7 4R7 4S7 4Q7
ST3 ST4 ST5 ST6 ST7 ST1 ST2

Title: FOX-4 CAPE HOOPER - STATION AREA LANDFILL

Project: FOX-4 CAPE HOOPER DEW LINE CLEAN UP LANDFILL MONITORING PLAN

Date: NOVEMBER 2007

Client: DEFENCE CONSTRUCTION CANADA

SCALE 1:1000

20 15 10 5 0 25 50 metres

FIGURE 4

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-3-StationAreaLandfill.dwg

5.5 Photographic Records

The Photographic Record for the Station Area Landfill has been completed as per the Terms of Reference and is included in the following page as Table 5-3. The Photographic Record only contains an index and “thumbnail” photographs; full sized photographs are contained in the Addendum CD-ROM.

Table 5-3 Photographic Record - Station Area Landfill

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
4A7	4A7.jpg 2007-08-23	Close up view of reddish soil staining, water runoff and overland drainage feature at 590436E/7597074N. Camera facing South-East.		Figure 4
4B7	4B7.jpg 2007-08-23	Wide angle view of soil staining, water runoff and overland drainage. Standing water is located on the downgradient portion of the landfill. Camera facing South-East.		Figure 4
4C7	4C7.jpg 2007-08-23	Close up view of standing water and water runoff observed at 590407E/7597099N. Camera facing South.		Figure 4
4D7	4D7.jpg 2007-08-23	Wide angle view of standing water and water runoff. White card in the center of the picture is 21cm by 28cm and is located at 10590407E/7597099N, facing South.		Figure 4
4E7	4E7.jpg 2007-08-23	Close up view of staining water and reddish soil staining at 590370E/7597109N. Camera facing East.		Figure 4
4F7	4F7.jpg 2007-08-23	Wide angle view of standing water course. White card is located at 590370E/7597109N. The water is staining soil red. Camera facing East.		Figure 4
4G7	4G7.jpg 2007-08-23	View of same standing water but further downstream, white card is located at 590370E/7597109N. The water is staining soil red. Camera facing South-East.		Figure 4
4H7	4H7.jpg 2007-08-23	Standing water observed at 590348E/7597107N. The water is staining soil red. Monitoring Well 9 is visible at the right of photo. Camera facing South-East		Figure 4
4I7	4I7.jpg 2007-08-23	Wide angle view of standing water and reddish soil staining. White card in the center of the picture is located at 590348E/7597107N. Camera facing East		Figure 4
4J7	4J7.jpg 2007-08-23	View of same standing water but further downstream, white card is located at 590348E/7597107N. View of water channel connector. Camera facing East.		Figure 4
4K7	4K7.jpg 2007-08-23	View of standing water and reddish soil staining. White card is located at 590330E/7597102N. Camera facing North-East.		Figure 4
4L7	4L7.jpg 2007-08-23	View of same standing water but further downstream, white card is located at 590330E/7597102N. The water is staining soil red. Camera facing North-East.		Figure 4
4M7	4M7.jpg 2007-08-23	Close up view of standing water and reddish soil staining observed at 590325E/7597115N. White card in the left of the picture is 21cm by 28cm. Camera facing North-East.		Figure 4

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
4N7	4N7.jpg 2007-08-23	Close up view of sinkholes. White card is 21cm by 28cm and is located at 590313E/7597123N. Camera facing South-East.		Figure 4
4O7	4O7.jpg 2007-08-23	Panoramic view of Station Area Landfill. Wide angle view of reddish soil staining and seepage observed starting upgradient. Monitoring Wells 8 (right) and 9 (left) are visible in background. Camera facing South.		Figure 4
4P7	4P7.jpg 2007-08-23	Panoramic view of Station Area Landfill. View of standing water and reddish soil staining. Monitoring Well 8 is visible at the left of photo. Camera facing South-West.		Figure 4
4Q7	4Q7.jpg 2007-08-23	Close up view of reddish soil staining. White card is 21cm by 28cm and located at 590351E/7597087N.Camera facing North-East.		Figure 4
4R7	4R7.jpg 2007-08-23	Close up view of sinkhole observed at 590430E/7597057N.Camera facing South-East.		Figure 4
4S7	4S7.jpg 2007-08-23	Wide angle view of sinkhole. White card is 21cm by 28cm and located at 590430E/7597057N. Monitoring Well 7 is visible in background. Camera facing East.		Figure 4
ST-1	ST-1.jpg 11/06/2007	Soil sampling at MW7 – showing hole to depth of 50 cm.		Figure 4
ST-2	ST-2.jpg 11/06/2007	Showing soils sampling location MW7, approximately 2.5 m from the well – facing northeast.		Figure 4
ST-3	ST-3.jpg 11/06/2007	Soil sampling at MW8 – showing hole to depth of 50 cm.		Figure 4
ST-4	ST-4.jpg 11/06/2007	Showing soils sampling location MW8, approximately 2.5 m from the well – facing southwest.		Figure 4
ST-5	ST-5.jpg 11/06/2007	Soil sampling at MW9 – showing hole to depth of 50 cm.		Figure 4
ST-6	ST-6.jpg 11/06/2007	Showing soils sampling location MW9, approximately 2.5 m from the well – north.		Figure 4
ST-7	ST-7.jpg 11/06/2007	Attempting to remove debris/obstructions from bottom of MW9 – facing east		Figure 4

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
ST-8	ST-8.jpg 11/06/2007	Close-up of ice removed from bottom of MW-9.		Figure 4

5.6 Thermal Monitoring Data

Not applicable for this landfill area.

5.7 Soil Sample Analytical Data

The concentrations of Cd, Pb and Hg in the soil samples collected in the vicinity of the existing monitoring wells are under the detection limit. Concentrations of Cu (66 mg/kg), Zn (60 mg/kg) and Cr (41 mg/kg) from the surface soil sample MW-8 are high in comparison to the other soil samples. The arsenic concentration, in the surface soil collected near MW-7, is twice as high as the concentrations in the other soil samples. The concentrations of the remaining metals are measured to be low in the upgradient and downgradient soil samples.

The concentrations of PCBs are non-detect in most of the soil samples, with the exception of the metal concentrations from MW-8 (surface) and MW-9 (both surface and subsurface) that are slightly higher than the detection limit (0.1 mg/kg).

The TPH concentrations in the soil samples range from non-detect to 863 mg/kg (MW-8 subsurface). The F1 concentrations are below the detection limit, while F3 concentrations are slightly higher than F2 in the samples analyzed. Due to the small number of soil samples, no systematic trend could be observed at this landfill.

The soil sample analytical data is included in the following page as Table 5-4.

Table 5-4: Summary of 2006/2007 Soil Analytical Data - Station Area Landfill

Sample #	Location	Depth (cm)	Cu [mg/kg]		Ni [mg/kg]		Co [mg/kg]		Cd [mg/kg]		Pb [mg/kg]		Zn [mg/kg]		Cr [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
UPGRADIENT																
MW-7 (Soil) 0-15 cm	MW-7	0-15	11	5	10	4	3	2	<1	<0.9	< 10	< 10	20	10	20	3
MW- 7 (Soil) 40-50 cm	MW-7	40-50	18	19	14	15	4	4	<1	<0.9	< 10	< 10	24	26	28	33
DOWNGRADIENT																
MW-8 (Soil) 0-15 cm	MW-8	0-15	13	66	10	10	3	2	<1	<0.9	< 10	< 10	20	60	19	41
MW-8 (Soil) 40-50 cm	MW-8	40-50	15	9	12	8	3	2	<1	<0.9	< 10	< 10	20	6	21	5
MW-9 (Soil) 0-15 cm	MW-9	0-15	11	12	10	10	3	3	<1	<0.9	< 10	< 10	20	23	22	20
MW-9 (Soil) 40-45 cm	MW-9	40-45	10	15	10	11	3	4	<1	<0.9	< 10	< 10	18	29	22	32

Notes

NV = No value

ND = Non - Detectable

Table 5-4: Summary of 2006/2007 Soil Analytical Data - Station Area Landfill

Sample #	Location	Depth (cm)	As [mg/kg]		Hg [mg/kg]		PCBs [mg/kg]		F1 C_6-C_{10} [mg/kg]		F2 C_{10}-C_{16} [mg/kg]		F3 C_{16}-C_{34} [mg/kg]		TPH C_6-C_{34} [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
UPGRADIENT																
MW-7 (Soil) 0-15 cm	MW-7	0-15	11.2	<0.7	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	30	208	30	208
MW- 7 (Soil) 40-50 cm	MW-7	40-50	13.2	40.6	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	230	<20	230	ND
DOWNGRADIENT																
MW-8 (Soil) 0-15 cm	MW-8	0-15	10.4	20.1	< 0.04	< 0.04	<0.1	0.1	<12	<11	10	23	150	73	160	96
MW-8 (Soil) 40-50 cm	MW-8	40-50	11.4	4	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	493	30	369	30	862
MW-9 (Soil) 0-15 cm	MW-9	0-15	61.1	10.5	< 0.04	< 0.04	<0.1	0.4	<12	<11	10	<20	<10	25	10	25
MW-9 (Soil) 40-45 cm	MW-9	40-45	25.2	23.7	< 0.04	< 0.04	<0.1	0.1	<12	<11	<10	<20	<10	<20	<10	ND

Notes

NV = No value

ND = Non - Detectable

5.8 Groundwater Sample Analytical Data

As reported previously, groundwater could not be sampled from monitoring well MW-9. The monitoring wells MW-7 and MW-8 were sampled for total metals, PCBs and TPH. Total Hg and Cd concentrations are below the detection limit in the two groundwater samples. The downgradient sample collected from MW-8 shows a high concentration of Zn compared to the upgradient sample (MW-7). The concentrations of Cu, Ni, Co and Pb are generally higher in the upgradient groundwater sample collected from MW-7 by a factor of 2 or more compared to the downgradient sample.

The concentrations of PCBs and TPH are below detection limits in both groundwater samples analysed.

The groundwater sample analytical data is included in the following page as Table 5-5.

Table 5-5: Summary of 2006/2007 Groundwater Analytical - Station Area Landfill

Sample #	Location	Groundwater Elevation (masl)	Cu [mg/L]		Ni [mg/L]		Co [mg/L]		Cd [mg/L]		Pb [mg/L]		Zn [mg/L]		Cr [mg/L]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
STATION AREA LANDFILL UPGRADIENT																
MW-7	MW-7	-	0.019	0.015	0.100	0.082	0.022	0.022	0.001	<0.001	0.020	0.004	1.12	0.28	0.014	0.011
STATION AREA LANDFILL DOWNGRADIENT																
MW-8	MW-8	-	0.008	0.007	0.030	0.014	0.009	0.013	0.001	<0.001	0.010	<0.001	2.49	1.06	0.015	0.004
MW-9	MW-9	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV

Notes

NV = No Value

ND = Non - Detectable

Table 5-5: Summary of 2006/2007 Groundwater Analytical - Station Area Landfill

Sample #	Location	Groundwater Elevation (masl)	As [mg/L]		Hg [mg/L]		PCBs [mg/L]		F1 C_6-C_{10} [ug/L]		F2 C_{10}-C_{16} [mg/L]		F3 C_{16}-C_{34} [mg/L]		TPH C_6-C_{34} [mg/L]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
STATION AREA LANDFILL UPGRADIENT																
MW-7	MW-7	-	0.002	0.002	<0.0002	<0.0001	<0.1	ND	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
STATION AREA LANDFILL DOWNGRADIENT																
MW-8	MW-8	-	0.003	0.005	<0.0002	<0.0001	<0.1	ND	<25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
MW-9	MW-9	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV

Notes

NV = No Value

ND = Non - Detectable

5.9 Monitoring Well Sampling Logs

The groundwater monitoring well sampling logs are included in the following pages as Table 5-6 to 5-8.

Table 5-6: Monitoring Well Sampling Log MW 7 - Station Area Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23-08-2007	Time:	14:15
Names of Samplers:	R.F.		
Landfill Name:	Station Area Landfill		
Monitoring Well ID:	MW-7		
Well Sampling Event:	2007	Sample Number:	MW-7
Condition of Well:	Bentonite expanded too lid	Procedure/Equipment:	Bailer
Volume Purged Water (L):	2	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	NA
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	1		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	
Depth to water surface (cm):	113	Method (electric meter, steel tape, etc):	electric Meter
(from top of pipe)	-		
Static water level (cm):	114	from ground surface	
Depth to bottom (cm):	172	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	Paste
pH:	5.09/ 5.26/ 5.31/ 5.32/ 5.37		
Conductivity (µS/cm) :	61/ 60/ 60/ 59/ 60		
Temperature (^{O}C):	3.1/ 2.9/ 2.8/ 2.8/ 2.7		
Depth of water (cm):	58		
Well volume of water (mL):	3480		
Length screen collecting water:	-		
Shape factor:	-		

Table 5-7: Monitoring Well Sampling Log MW 8 - Station Area Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/08/2007	Time:	13:30
Names of Samplers:	R.F.		
Landfill Name:	Station Area Landfil		
Monitoring Well ID:	MW-8		
Well Sampling Event:	2007	Sample Number:	MW-8
Condition of Well:	good	Procedure/Equipment:	
Volume Purged Water (L):	2.5	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	3		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	90	Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	93	from ground surface	
Depth to bottom (cm):	120	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	5.16/ 5.86/ 6.13/ 6.21/ 6.29/ 6.31/ 6.31		
Conductivity (µS/cm) :	131/ 127/ 117/ 117/ 115/ 114/ 113		
Temperature (^{O}C):	2.5/ 1.7/ 1.7/ 1.4/ 1.7/ 1.2/ 1.3		
Depth of water (cm):	27		
Well volume of water (mL):	1620		
Length screen collecting water:			
Shape factor:			

Table 5-8: Monitoring Well Sampling Log MW 9 - Station Area Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	23/08/2007	Time:	14:00
Names of Samplers:	R.F.		
Landfill Name:	Station Area Landfil		
Monitoring Well ID:	MW-9		
Well Sampling Event:	2007	Sample Number:	-
Condition of Well:	Bentonite expanded to cap. Obstruction in bottom. Retrived half a bailer, other half is frozen to in ice	Procedure/Equipment:	-
Volume Purged Water (mL):	Dry well	Purging (Y/N):	-
Sampling Equipment:	-		
Filtration (Y/N):	-	Acidification (Y/N):	-
Decontamination required (Y/N):	-	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	3		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	-
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	-
Depth to water surface (cm):	-	Method (electric meter, steel tape, etc):	
(from top of pipe)	-		
Static water level (cm):	-	from ground surface	
Depth to bottom (cm):	-	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	-	Method (electric meter, steel tape, etc):	
pH:	-		
Conductivity (µS/cm) :	-		
Temperature (^{O}C):	-		
Depth of water (cm):	-		
Well volume of water (mL):	-		
Length screen collecting water:	-		
Shape factor:	-		

Note:

* The well height above ground is lower than that provided in the TOR. This is possibly due to the re-adjustment of the well-casing by the field personnel during the previous monitoring in 2005.

6.0 LOWER SITE LANDFILL AND DCC TIER II SOIL DISPOSAL AREA

6.1 Summary

The Lower Site Landfill and DCC Tier II Soil Disposal Area are located near the west end of Cape Hooper and north of the airstrip, in relatively close proximity to one another.

The Lower Site Landfill was constructed for the disposal of non-hazardous demolition and site waste and Tier I soil. It covers an area of approximately 1200 m^2.

The monitoring of this landfill site includes visual inspection to verify for evidence of settlement or erosion and collection of soil and groundwater samples to monitor for the presence of leachate. Groundwater monitoring well and soil sampling locations are identified in Figure 5 FOX-4 Cape Hooper – DCC Tier II Soil Disposal and Lower Site Landfill.

The DCC Tier II Soil Disposal facility was constructed for the disposal of DCC Tier II soil excavated from the FOX-4 site. The disposal facility has a surface area of approximately 3600 m^2.

The monitoring of this disposal area includes visual inspection to verify for evidence of settlement or erosion, collection of soil and groundwater samples to monitor for the presence of leachate. Monitoring of sub-surface ground temperatures in the disposal facility's main body (thermal monitoring) was also included in the 2007 field program. Groundwater monitoring well locations, as well as soil sample locations and thermistor locations are identified on Figure 5 FOX-4 Cape Hooper – DCC Tier II Soil Disposal and Lower Site Landfill.

The visual inspection report, including supporting photos and drawings, is presented in the following pages.

6.2 Visual Inspection Report

6.2.1 Lower Site Landfill

The visual inspection of the Lower Site Landfill was conducted on August 22, 2007. The landfill surface is at the same elevation as the surrounding ground elevation. The groundwater levels in this area were noted to be 0.3 m to 0.4 m below ground surface. It was inferred that the debris contained within the Lower Site Landfill may be saturated during the period of maximum ground thaw. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material with trace cobbles.

Settlement

Sinkholes and surface ground cracks were observed on the north portion of the landfill. It is believed that these sinkholes are a combination of settlement and piping. The material at the surface is being washed into voids beneath the surface. The location of these sinkholes is presented in Figure 5 FOX-4 Cape Hooper – DCC Tier II Soil Disposal and Lower Site Landfill.

Erosion

Erosion of the capping material was not noted.

Frost Action

The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low, however the presence of near surface groundwater may indicate that there is sufficient containment of the water due to a lower confining layer and that free draining materials may be frost susceptible.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted in the landfill however arctic hares and foxes were observed in the area.

Re-establishment of Vegetation

Re-establishment of vegetation was not noted.

Staining

The stained areas, designated ST5-1 and ST5-2/3, are presented on Figure 5 FOX-4 Cape Hooper – DCC Tier II Soil Disposal and Lower Site Landfill. Areas ST5-2 and ST5-3 have amalgamated and the area is designated ST5-2/3. Areas of staining appeared to have increased slightly since the 2006 landfill visual inspection. The staining appears reddish in color and is sometimes associated with a noticeable iridescent sheen.

Seepage Points

The number of seepage points also appears to have increased since the previous landfill visual inspection and are coincident with the areas of staining.

Debris

Exposed debris was not noted.

Discussion

The Lower Site Landfill performance with respect to containment of the debris within the landfill is rated as acceptable.

6.2.2 DCC Tier II Landfill

The visual inspection of the DCC Tier II landfill was conducted on August 21-22, 2007. The landfill surface is elevated above the surrounding ground elevation. The groundwater levels in this area were noted to be 0.3 m to 0.4 m below ground surface. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material with trace cobbles.

Settlement

Consolidation settlement of the landfill is somewhat variable and a record of the magnitude of the settlement is visible based on the elevations of the thermistor monitoring stations. It was assumed that the thermistor bases were originally installed flush with the ground surface. The consolidation settlement does not appear to indicate a lose debris from within the landfill.

Erosion

Erosion of the capping material was not noted.

Frost Action

The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low, however the presence of near surface groundwater may indicate that there is sufficient containment of the water due to a lower confining layer and that free draining materials may be frost susceptible.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted in the landfill however arctic hares and foxes were observed in the area.

Re-establishment of Vegetation

Re-establishment of vegetation was not noted.

Staining

The stained areas, designated ST6-1 to ST6-6, are presented in Figure 5 FOX-4 Cape Hooper – DCC Tier II Soil Disposal and Lower Site Landfill. With the exception of ST6-4, areas of staining appeared to have increased slightly since the 2006 landfill visual inspection. The area of ST6-4 was noticeably reduced from the previous years visual inspection. The staining appears reddish in color and is sometimes associated with a noticeable iridescent sheen.

Seepage Points

The seepage are coincident with the areas of staining. The flow from the seepage points appeared to be less than what was observed in the 2006 visual inspection.

Debris

Exposed debris was not noted.

Discussion

The Tier II Landfill performance with respect to containment of the debris within the landfill is rated as acceptable.

Table 6-1: Visual Inspection Checklist – Inspection Report – Lower Site Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **LOWER SITE LANDFILL**
LANDFILL DESIGNATION: Landfill, Lower Site North of Airstrip
DATE OF INSPECTION: August 22, 2007
DATE OF PREVIOUS INSPECTION: August 24, 2006
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	YES	North Portion of the landfill For location refer to Figure 5 Fox -4 Cape Hooper-Lower Site	1 m	0.5 m	0.2m	<1%		Photographs: 5A7, 5B7, 5C7, 5D7, 5E7 For locations and directions of photographs refer to Figure 5 Fox -4 Cape Hooper-Lower Site	
Erosion	NO								
Frost Action	NO	Frost action was not noted.							
Sloughing and Cracking	YES	North mid portion of the landfill. For location refer to Figure 5 Fox -4 Cape Hooper-Lower Site	8m	0.1m		<1%	Settlement Cracks	Photograph: 5E7 For location and direction of photograph refer to Figure 5 Fox -4 Cape Hooper-Station Area.	
Animal Burrows	NO								
Vegetation	NO								
Staining	YES	ST5-1 ST5-2/3 For location refer to Figure 5 Fox -4 Cape Hooper-Lower Site	65 m 25 m	2 m 5 m		11% 10%	Staining from seepage was noted and the affected area appears to have increased slightly from the previous year.	Photographs: 5A7, 5B7, 5C7, 5F7, 5G7, 5H7, 5I7, 5J7, 5L7, 5M7, 5N, For locations and directions of photographs refer to Figure 5 Fox -4 Cape Hooper-Lower Site	
Vegetation Stress	NO	No vegetation was observed							
Seepage Points	YES	Seepage points coincide with staining locations					Where there was staining there was an associated seepage point.	Photographs: 5A7, 5B7, 5C7, 5F7, 5G7, 5H7, 5I7, 5J7, 5L7, 5M7, 5N, For locations and directions of photographs refer to Figure 5 Fox -4 Cape Hooper-Lower Site	
Debris Exposed	NO								
Presence/Condition – Monitoring Instruments	YES	For location refer to Figure 5 Fox -4 Cape Hooper-Lower Site							
Features of Note.	NO								

Table 6-2: Visual Inspection Checklist – Inspection Report – DCC Tier II Soil Disposal Area

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **DCC TIER II LANDFILL**
LANDFILL DESIGNATION: Landfill, Lower Site, North of Airstrip
DATE OF INSPECTION: August 21-22, 2007
DATE OF PREVIOUS INSPECTION: August 24, 2006
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	YES	Consolidation settlement was noted throughout the landfill. For locations, refer to Figure 5 FOX-4 Cape Hooper – DCC Tier II and Lower Site Landfills.				100 %	This was based on observations of settlement in comparison to the thermistor stations.		
Erosion	NO								
Frost Action	NO	Frost action was not noted.							
Sloughing and Cracking	NO								
Animal Burrows	NO								
Vegetation	NO							No vegetation was observed on the capping cover.	
Staining	YES	ST6-1 ST6-2 ST6-3A ST6-3B ST6-4 ST6-5 ST6-6 For locations, refer to Figure 5 FOX-4 Cape Hooper – Helipad landfills – East and West.	45 m 60 m 50 m 45 m 35 m 70 m 18 m	11 m 4 m 0.5 m 0.5 m 4 m 5 m 12 m		40% 20% 2% 2% 11% 28% 18%	Staining from seepage was noted and the affected area appears to have increased slightly from the previous year (2006).	Photographs: 6A7, 6B7, 6C7, 6D7, 6E7, 6F7, 6G7, 6H7, 6I7, 6J7, 6M7, 6N7, 6O7, 6P7, 6Q7, 6R7, 6S7, 6T7, 6U7, 6V7, 6W7, 6X7, 6Y7, 6Z7 For locations and directions of photographs, refer to Figure 5 FOX-4 Cape Hooper –DCC Tier II and Lower Site landfills.	
Vegetation Stress	NO							No vegetation was observed on the capping cover.	
Seepage Points	YES	Seepage points coincide with staining locations.	See staining observations.	See staining observations.			Staining	See staining observations.	
Debris Exposed	NO								
Presence/Condition – Monitoring Instruments	YES	Refer to Figure 5 FOX-4 Cape Hooper –DCC Tier II and Lower Site landfills.						Refer to Figure 5 FOX-4 Cape Hooper –DCC Tier II and Lower Site landfills.	
Features of Note.	YES	The slopes of the landfill.						Photographs: 6AB7, 6BC7	The slopes of the landfill were covered with round rock for erosion protection. This round rock is sliding down the slope. If long term erosion protection is required the nearby colluvium (angular rock) should be used to minimize erosion and prevent debris exposure or loss of the insulative soil layer.

6.3 Preliminary Stability Assessment

The Preliminary Stability Assessment for the Lower Site Landfill and DCC Tier II Soil Disposal Area have been completed as per the Terms of Reference and are included as Tables 6-3 and 6-4 respectively of this report.

Table 6-3: Preliminary Stability Assessment – Lower Site Landfill

Feature	Severity Rating	Extent
Settlement	Acceptable	Isolated
Erosion	Acceptable	Isolated
Frost Action	Not Observed	None
Staining	Acceptable	Numerous
Vegetation Stress	Not Observed	None
Seepage / Ponded Water	Acceptable	Numerous
Debris Exposure	Acceptable	Isolated
Overall Landfill Performance	**Acceptable**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

Table 6-4: Preliminary Stability Assessment – DCC Tier II Soil Disposal Area

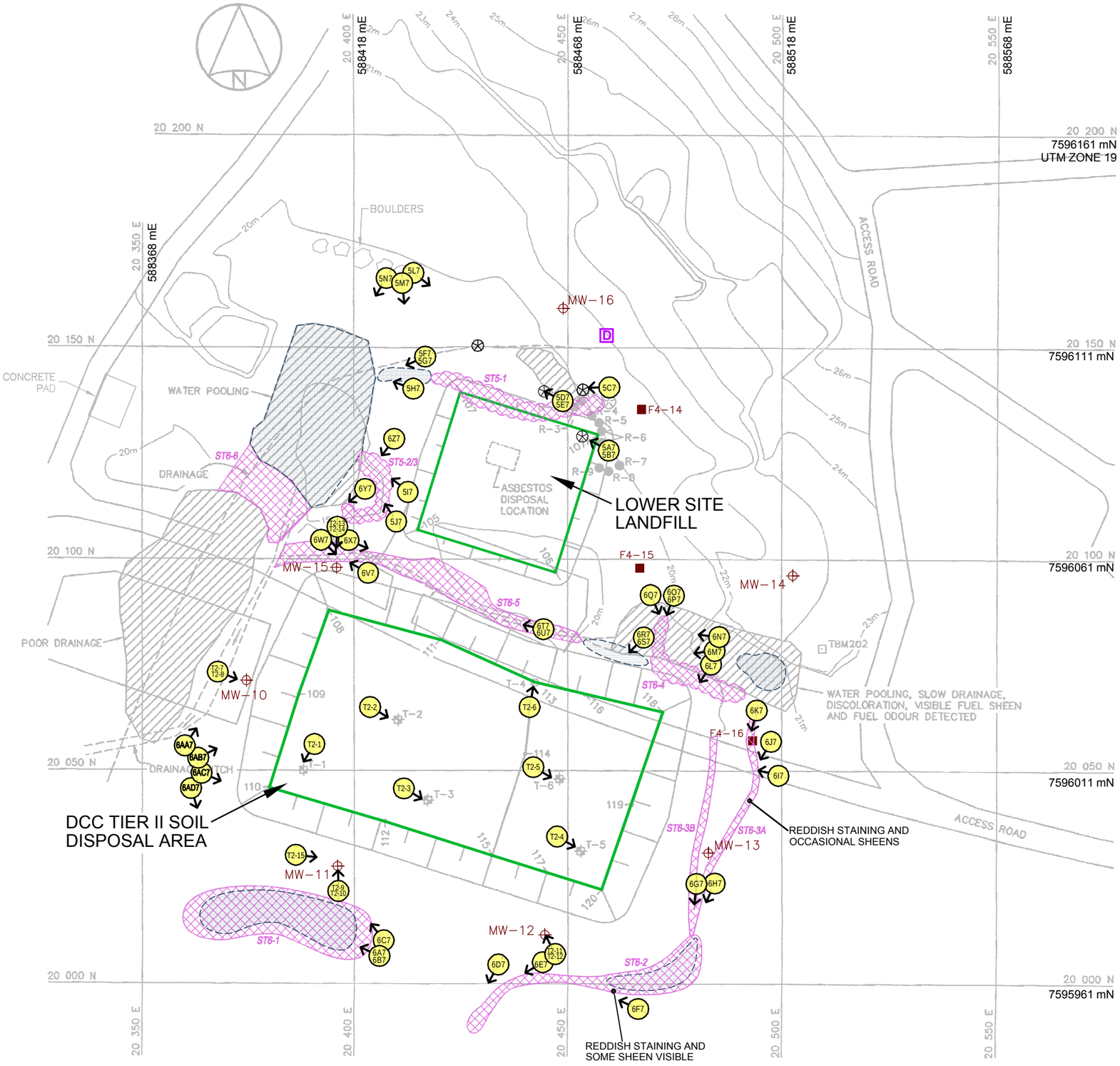
Feature	Severity Rating	Extent
Settlement	Acceptable	None (No Differential Settlement)
Erosion	Acceptable	None
Frost Action	Not Observed	None
Staining	Acceptable	Numerous
Vegetation Stress	Not Observed	None
Seepage / Ponded Water	Acceptable	Numerous
Debris Exposure	Not Observed	
Overall Landfill Performance	**Acceptable**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

6.4 Location Plan

The Location Plan for the Lower Site Landfill and DCC Tier II Soil Disposal Area has been completed as per the Terms of Reference and is included in the following page as Figure 5 FOX-4 Cape Hooper – DCC Tier II Soil Disposal and Lower Site Landfill.



LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

- TBM202 — TEMPORARY BENCHMARK
- MONITORING WELL LOCATION
- 105 — COORDINATE POINT
- VERTICAL THERMISTOR
- SOIL SAMPLE
- LANDFILL BOUNDARY (APPROXIMATE)

2007 OBSERVATIONS:

- ST5-1 — STAINS
- D — DEBRIS
- EROSION
- POOLING
- SINKHOLE
- 6A7 6B7 — PHOTOGRAPH LOCATION (INDICATING PHOTO NUMBER, LOCATION, VIEWING DIRECTION)

TEMPORARY BENCHMARKS				
NO.	COORDINATES		ELEV.	DESCRIPTION
	NORTHING	EASTING		
202	20 079.007	20 509.423	24.110	19mm DIA. PIPE

MONITORING WELLS		
NO.	COORDINATES	
	NORTHING	EASTING
MW-10	20 071.0	20 374.8
MW-11	20 027.3	20 396.2
MW-12	20 011.5	20 444.4
MW-13	20 030.8	20 483.1
MW-14	20 096.0	20 503.0
MW-15	20 098.0	20 396.0
MW-16	20 159.4	20 449.0

VERTICAL THERMISTORS		
NO.	COORDINATES	
	NORTHING	EASTING
T-1	20 050.0	20 388.0
T-2	20 062.0	20 410.0
T-3	20 043.0	20 417.0
T-4	20 071.0	20 442.0
T-5	20 031.0	20 453.0
T-6	20 048.0	20 448.0

COORDINATE POINTS							
NO.	NORTHING	EASTING	ELEV.	NO.	NORTHING	EASTING	ELEV.
108	20 088.0	20 394.0	22.10	115	20 030.0	20 432.0	22.04
109	20 068.0	20 387.0	22.65	116	20 068.0	20 454.0	22.34
110	20 046.0	20 380.0	21.89	117	20 026.0	20 445.0	22.34
111	20 081.0	20 420.0	22.30	118	20 064.0	20 472.0	22.31
112	20 038.0	20 407.0	22.00	119	20 042.0	20 465.0	22.60
113	20 071.0	20 442.0	22.28	120	20 022.0	20 458.0	22.01
114	20 054.0	20 440.0	22.75				

COORDINATE POINTS			
NO.	NORTHING	EASTING	ELEV.
105	20 107	20 415	21.0
106	20 097	20 447	21.3
107	20 139	20 425	21.1
107A	20 129	20 457	21.6

Title: FOX-4 CAPE HOOPER - DCC TIER II SOIL DISPOSAL AND LOWER SITE LANDFILL

Project: FOX-4 CAPE HOOPER DEW LINE CLEAN UP LANDFILL MONITORING PLAN

Date: NOVEMBER 2007

Client: DEFENCE CONSTRUCTION CANADA

SCALE 1:1000

20 15 10 5 0 metres 25 50

FIGURE 5

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-4-DCCsoil.dwg

6.5 Photographic Records

The Photographic Record for the Lower Site Landfill and DCC Tier II Soil Disposal Area has been completed as per the Terms of Reference and are included in the following page as Table 6-5. The Photographic Record only contains an index and “thumbnail” photographs; full sized photographs are contained in the Addendum CD-ROM.

Table 6-5 A Photographic Record - Lower Site Landfill

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
5A7	5A7.jpg 2007-08-23	Close up view of sinkhole observed at 588472E/7596092N. Camera facing North-West.		Figure 5
5B7	5B7.jpg 2007-08-23	Wide angle view of sinkhole observed at 588472E/7596092N. Camera facing North-West.		Figure 5
5C7	5C7.jpg 2007-08-23	Sinkhole observed at 588472E/7596102N. Wide angle view facing West. White card is 20cm by 28cm.		Figure 5
5D7	5D7.jpg 2007-08-23	Close up view of sinkhole observed at 588461E/7596103N. Camera facing West		Figure 5
5E7	5E7.jpg 2007-08-23	Wide angle view of sinkhole observed at 588461E/7596103N. On the background view of pool and reddish soil staining. Camera facing West.		Figure 5
5F7	5F7.jpg 2007-08-23	Wide angle view of pooling observed at 588428E/7596104N. Camera facing South-West.		Figure 5
5G7	5G7.jpg 2007-08-23	Close up view of sinkhole observed at 588428E/7596104N. Camera facing sinkhole		Figure 5
5H7	5H7.jpg 2007-08-23	Wide angle view of polling, channels and reddish soil staining observed at 588428E/7596104N. Camera facing North-West		Figure 5
5I7	5I7.jpg 2007-08-23	Close up view of reddish soil staining (ST5-2) and standing water observed at 588428E/7596078N. Camera facing North-West		Figure 5
5J7	5J7.jpg 2007-08-23	Wide angle view of both soil staining (ST5-2 and ST5-3) and water channels observed at 588426E/7596072N. Camera facing North-West.		Figure 5
5L7	5L7.jpg 2007-08-23	Panoramic view of reddish soil staining. Camera facing South-East.		Figure 5
5M7	5M7.jpg 2007-08-23	Panoramic view of reddish soil staining and pooling. View of the Tier II soil disposal area on the background. Camera facing South.		Figure 5
5N7	5N7.jpg 2007-08-23	Panoramic view of pooling and water channels. Camera facing South-West.		Figure 5

Table 6-5 B Photographic Record - DCC Tier II Soil Disposal and Lower Site Landfill

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
6A7	6A7.jpg 2007-08-23	Close up view of pooling observed at 588423E/7595968N. No noticeable sheen on the water this year. White card is 20cm by 28cm.		Figure 5
6B7	6B7.jpg 2007-08-23	Wide angle view of pooling observed at 588423E/7595968N. Camera facing West.		Figure 5
6C7	6C7.jpg 2007-08-23	View of polling border at 588423E/7595968N and Monitoring Well 11 at the center of the photo. Camera facing North-West		Figure 5
6D7	6D7.jpg 2007-08-23	Close up view of standing water observed at 588449E/7595957N. Water is staining the soil red. Camera facing South-West.		Figure 5
6E7	6E7.jpg 2007-08-23	Wide angle view of standing water and channels observed at 588449E/7595957N. Camera facing South-West.		Figure 5
6F7	6F7.jpg 2007-08-23	Standing water observed at 588490E/7595943N. No noticeable sheen on water this year. Water is staining the soil red. Camera facing North-West.		Figure 5
6G7	6G7.jpg 2007-08-23	Close up view of standing water observed at 588521E/7595963N. Water is staining the soil red. Camera facing South.		Figure 5
6H7	6H7.jpg 2007-08-23	Wide angle view of standing water and channels observed at 588521E/7595963N. Camera facing South-West.		Figure 5
6I7	6I7.jpg 2007-08-23	View of standing water and channels at 5885170E/7596015N. Camera facing North-West.		Figure 5
6J7	6J7.jpg 2007-08-23	Standing water and reddish soil staining observed at 5885170E/7596015N. Water is staining the soil red. Camera facing South-West. Monitoring Wells 12 and 13 visible in the background.		Figure 5
6K7	6K7.jpg 2007-08-23	Wide angle view of standing water, channels, and reddish soil staining observed at 5885170E/7596015N. Camera facing South.		Figure 5
6L7	6L7.jpg 2007-08-23	Standing water observed at 588508E/7596040N. View of Monitoring Wells 11 and 12 in background. Camera facing South-West.		Figure 5
6M7	6M7.jpg 2007-08-23	Wide angle view of standing water and reddish soil staining observed at 588508E/7596040N. Monitoring Well 15 visible on the background. Camera facing West.		Figure 5
6N7	6N7.jpg 2007-08-23	Reddish soil staining observed at 588488E/7596047N. Wide angle view, facing North-West.		Figure 5

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
6O7	6O7.jpg 2007-08-23	Close up view of soil staining and standing water at 588488E/7596053N. Camera facing South-West.		Figure 5
6P7	6P7.jpg 2007-08-23	Wide angle view of standing water and reddish soil staining observed at 588488E/7596053N. White card is 20cm by 28cm. Camera facing South-West.		Figure 5
6Q7	6Q7.jpg 2007-08-23	Southeast facing view at 588488E/7596053N. Reddish soil staining (ST6-4) and standing water visible in photo.		Figure 5
6R7	6R7.jpg 2007-08-23	Pooling observed at 588482E/7596039N. Tier II Soil Disposal Area in background. Camera facing South-West.		Figure 5
6S7	6S7.jpg 2007-08-23	Wide angle view of pooling and soil staining at 588482E/7596039N. Camera facing South-West.		Figure 5
6T7	6T7.jpg 2007-08-23	Close up view of reddish soil staining and standing water at 588463E/7596049N. Camera facing North-West.		Figure 5
6U7	6U7.jpg 2007-08-23	General View of pooling, channels, and soil staining at 588463E/7596047N. Monitoring Well 15 in background. Camera facing North-West.		Figure 5
6V7	6V7.jpg 2007-08-23	View of standing water at 588421E/7596058N. Monitoring Well 15 is visible at the left of photo. Camera facing North-West.		Figure 5
6W7	6W7.jpg 2007-08-23	Reddish soil staining visible at 588421E/7596058N. Monitoring Well 15 is visible at the right of photo. Camera facing South-East.		Figure 5
6X7	6X7.jpg 2007-08-23	Wide angle view of reddish soil staining (ST6-5) and standing water. Camera facing South-East.		Figure 5
6Y7	6Y7.jpg 2007-08-23	Soil staining observed at 588421E/7596058N and polling. White card is 20cm by 28cm. Camera facing South-West.		Figure 5
6Z7	6Z7.jpg 2007-08-23	Wide angle view of reddish soil staining and pooling. Monitoring Wells 10 and 15 visible in the background Camera facing South-West.		Figure 5
6AA7	6AA7.jpg 2007-08-23	Panoramic view. Wide angle view of soil staining and pooling. Camera facing North.		Figure 5
6AB7	6AB7.jpg 2007-08-23	Panoramic view. Wide angle view of western slope of disposal area. Monitoring Wells 10 and 15 visible at the left of photo. Camera facing North-East.		Figure 5

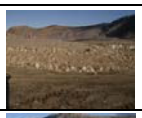
Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
6AC7	6AC7.jpg 2007-08-23	Panoramic view. Wide angle view of disposal area. Monitoring Wells 11 visible at the right of photo. Camera facing South-East.		Figure 5
6AD7	6AD7.jpg 2007-08-23	Panoramic view. Wide angle view of soil staining ST6-1. Camera facing South.		Figure 5
T2-1	T2-1.jpg 11/06/2007	Thermal monitoring station 1, facing southwest.		Figure 5
T2-2	T2-2.jpg 11/06/2007	Thermal monitoring station 2, facing southeast.		Figure 5
T2-3	T2-3.jpg 11/06/2007	Thermal monitoring station 3, facing southeast.		Figure 5
T2-4	T2-4.jpg 11/06/2007	Thermal monitoring station 4, facing southwest.		Figure 5
T2-5	T2-5.jpg 11/06/2007	Thermal monitoring station 5, facing southwest.		Figure 5
T2-6	T2-6.jpg 11/06/2007	Thermal monitoring station 6, facing north.		Figure 5
T2-7	T2-7.jpg 21/06/2007	Soil sampling at MW10 – showing hole to depth of 50 cm.		Figure 5
T2-8	T2-8.jpg 21/06/2007	Showing soils sampling location MW10, approximately 2.5 m from the well – facing east.		Figure 5
T2-9	T2-9.jpg 21/06/2007	Soil sampling at MW11 – showing hole to depth of 50 cm.		Figure 5
T2-10	T2-10.jpg 21/06/2007	Showing soils sampling location MW11, approximately 2.5 m from the well – facing north.		Figure 5
T2-11	T2-11.jpg 21/06/2007	Soil sampling at MW12 – showing hole to depth of 50 cm.		Figure 5

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
T2-12	T2-12.jpg 21/06/2007	Showing soils sampling location MW12, approximately 2.5 m from the well – facing north.		Figure 5
T2-13	T2-13.jpg 21/06/2007	Soil sampling at MW15 – showing hole to depth of 50 cm.		Figure 5
T2-14	T2-14.jpg 21/06/2007	Showing soils sampling location MW15, approximately 2.5 m from the well – facing south.		Figure 5
T2-15	T2-15.jpg 21/06/2007	Attempting to free debris/obstruction from MW11 – facing northeast.		Figure 5

6.6 Thermal Monitoring Data

Specific detailed information regarding temperature data is contained in the report section on the Lower Site landfill and DCC Tier II Soil Disposal Area.

The datalogger batteries were all replaced.

6.6.1 Landfill Temperature Data from Dataloggers

The tables and corresponding figures in the following pages summarize temperature data obtained from the dataloggers. This data is a representative sampling of 2006-2007 data points downloaded from thermistor dataloggers. The dataloggers actually recorded data points (temperatures) every 12 hours, however for these tables and corresponding figures, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

Table 6- 6: 2006-2007 Thermal Data - FOX-4 Cape Hooper - Thermistor Station T1

DATA T1 2006-2007

	DATE	TIME	ANALOG 1	ANALOG 2	ANALOG 3	ANALOG 4	ANALOG 5
	MM/DD/YY	HH:MM:SS					
DEPTH (m)			0	0.5 [2]	1 [2]	1.5	2
	31/08/2006	12:00:00	4.8838	0	0	-0.7251	-1.405
	30/09/2006	12:00:00	1.0141	0	0	-0.5312	-1.1019
	31/10/2006	12:00:00	0.0242	0	0	-0.4778	-0.9476
	30/11/2006	12:00:00	-6.6201	0	0	-0.4584	-0.9041
	31/12/2006	12:00:00	-16.5924	0	0	-7.3125	-5.6993
	31/01/2007	12:00:00	-17.1062	0	0	-10.5776	-9.2844
	28/02/2007	12:00:00	-18.9792	0	0	-12.7038	-11.4478
	31/03/2007	12:00:00	-14.5056	0	0	-13.8462	-13.0335
	30/04/2007	12:00:00	-10.0267	0	0	-10.3682	-10.4091
	31/05/2007	12:00:00	-3.831	0	0	-7.3262	-7.8065
	30/06/2007	12:00:00	2.555	0	0	-3.0416	-4.0181
	31/07/2007	12:00:00	3.1475	0	0	-1.3617	-2.1746
	25/08/2007	18:25:21	4.5773	0	0	-0.8026	-1.5249

1

This data is a representative sampling of 2006-2007 data points downloaded from thermistor datalogger at station T1. The datalogger actually recorded data points (temperatures) every 12 hours. In this table, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

2 Data obtained from these strings during the 2006-2007 sampling program does not refletct real life temuratures in the sub-surface. A value of Zero was entered in the place of the downloaded valued in order to complete the graphs. Please refer to the raw data for actual downloaded values.

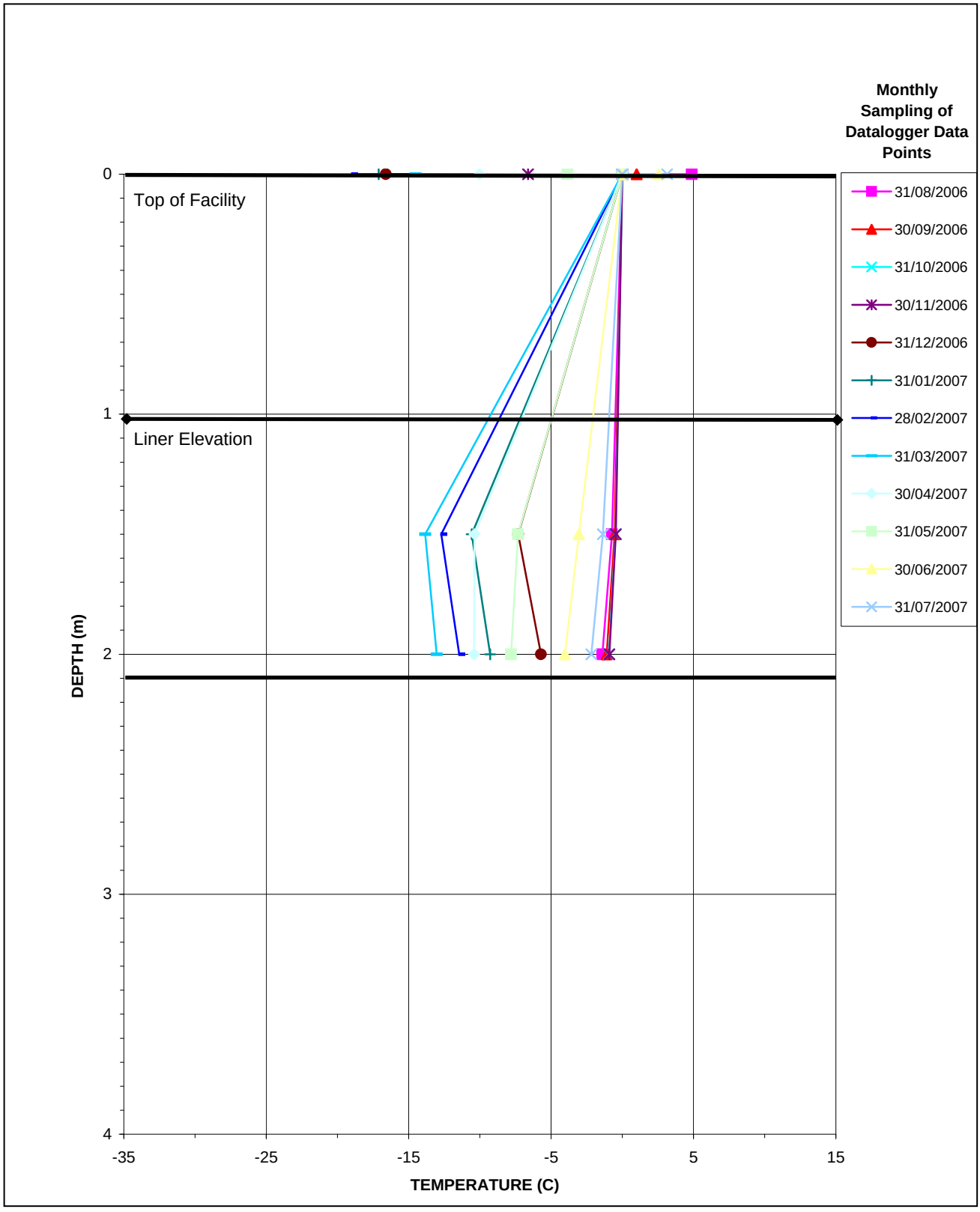


Figure 6 FOX-4 Cape Hooper – Thermal Data Graphs – Thermistor Station T1

Table 6-7: 2006-2007 Thermal Data - FOX-4 Cape Hooper - Thermistor Station T2

DATA T2 2006-2007

	DATE	TIME	ANALOG 1	ANALOG 2	ANALOG 3	ANALOG 4	ANALOG 4
	MM/DD/YY	HH:MM:SS					
DEPTH (m)			0	0.5	1	1.5	2
	25/08/2006	14:10:57	4.6142	2.3369	0.4805	-1.1742	-0.5846
	31/08/2006	12:00:00	5.1814	2.7995	0.6825	-1.1019	-0.4924
	30/09/2006	12:00:00	1.0637	0.6974	0.2593	-0.7639	-0.2881
	31/10/2006	12:00:00	-0.1175	0.0682	0.0682	-0.7397	-0.3417
	30/11/2006	12:00:00	-7.2942	-2.2792	0.0536	-0.7058	-0.3514
	31/12/2006	12:00:00	-19.7131	-12.7541	-9.6032	-5.8469	-7.4223
	31/01/2007	12:00:00	-16.8937	-13.4739	-11.6895	-9.4302	-10.482
	28/02/2007	12:00:00	-19.5228	-15.8289	-14.0304	-11.726	-12.8136
	31/03/2007	12:00:00	-15.1864	-15.0426	-14.9684	-13.7634	-14.5056
	30/04/2007	12:00:00	-10.7233	-10.9739	-11.2792	-11.3384	-11.4114
	31/05/2007	12:00:00	-4.4986	-6.6798	-7.8385	-8.8105	-8.464
	30/06/2007	12:00:00	3.2091	-0.3027	-1.922	-4.2003	-3.1924
	31/07/2007	12:00:00	3.7046	0.9793	-0.57	-2.1079	-2.1555

Notes:

1 This data is a representative sampling of 2006-2007 data points downloaded from thermistor datalogger at station T2. The datalogger actually recorded data points (temperatures) every 12 hours. In this table, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

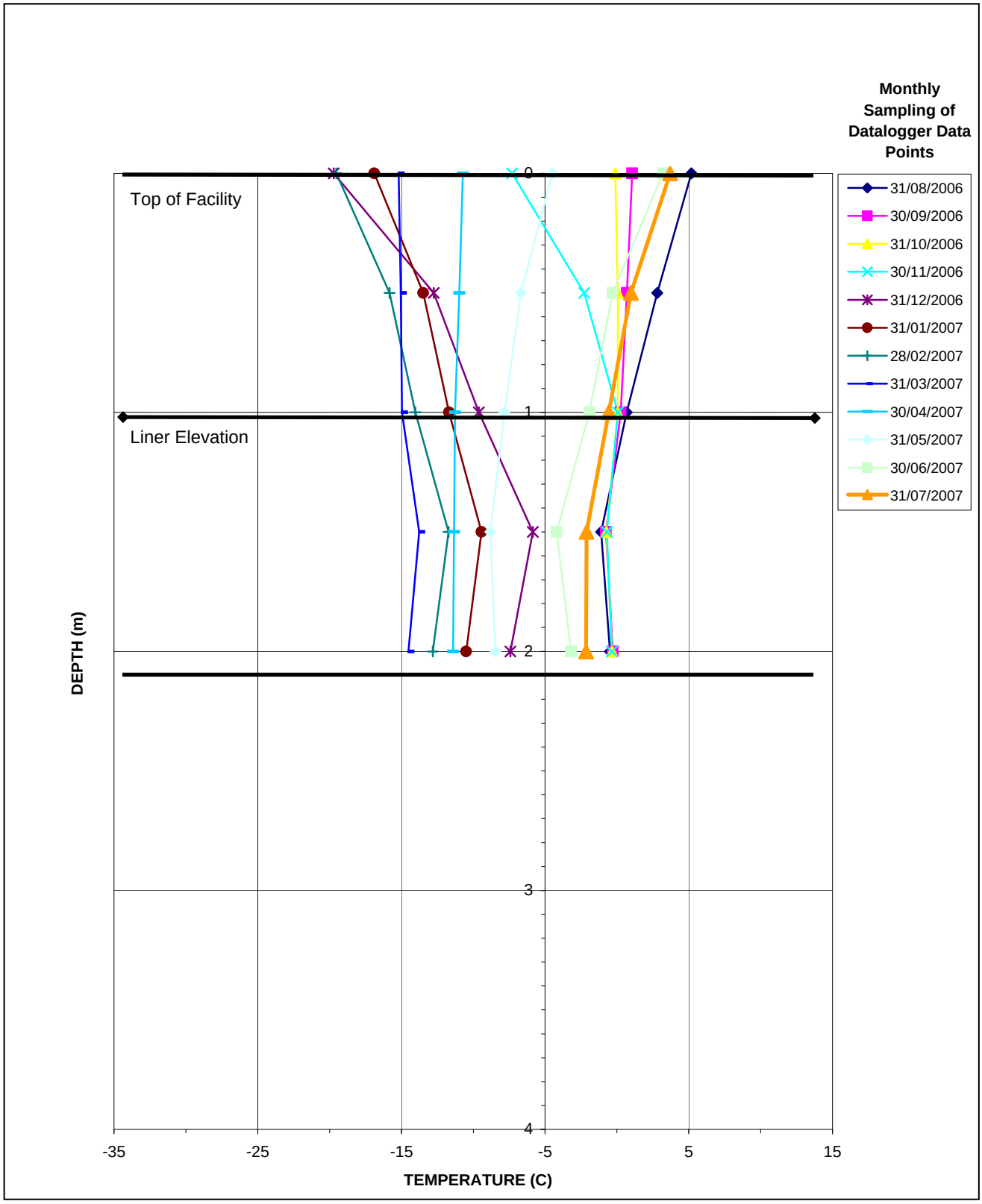


Figure 7 FOX-4 Cape Hooper – Thermal Data Graphs – Thermistor Station T2

Table 6-8: 2006-2007 Thermal Data - FOX-4 Cape Hooper - Thermistor Station T3

DATA T3 2006-2007

	DATE	TIME	ANALOG 1	ANALOG 2	ANALOG 3	ANALOG 4	ANALOG 5
	MM/DD/YY	HH:MM:SS					
DEPTH (m)			0	0.5	1	1.5	2
	31/08/2006	12:00:00	5.9114	3.6425	1.5069	-0.2053	-0.9282
	30/09/2006	12:00:00	1.612	0.8209	0.3477	-0.01	-0.6331
	31/10/2006	12:00:00	-0.5166	0.0536	0.0095	-0.1028	-0.6137
	30/11/2006	12:00:00	-7.7471	-2.4122	-0.01	-0.1663	-0.6331
	31/12/2006	12:00:00	-14.2102	-9.6123	-7.0743	-5.0376	-3.8825
	31/01/2007	12:00:00	-13.8232	-10.9739	-9.5395	-8.2449	-7.4361
	28/02/2007	12:00:00	-17.8131	-13.9153	-12.1232	-10.6824	-9.7717
	31/03/2007	12:00:00	-14.2701	-13.86	-13.4831	-12.7038	-12.0181
	30/04/2007	12:00:00	-11.3931	-11.1333	-11.0695	-10.8509	-10.778
	31/05/2007	12:00:00	-6.8358	-7.8065	-8.2997	-8.4959	-8.7558
	30/06/2007	12:00:00	4.8626	-0.4292	-2.379	-3.6623	-4.7638
	31/07/2007	12:00:00	4.9315	1.5269	-0.4292	-1.2704	-2.1365
	25/08/2007	15:33:36	6.4114	2.9681	1.1133	-0.2784	-1.0537

This data is a representative sampling of 2006-2007 data points downloaded from thermistor datalogger at station T3. The datalogger actually recorded data points (temperatures) every 12 hours. In this table, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

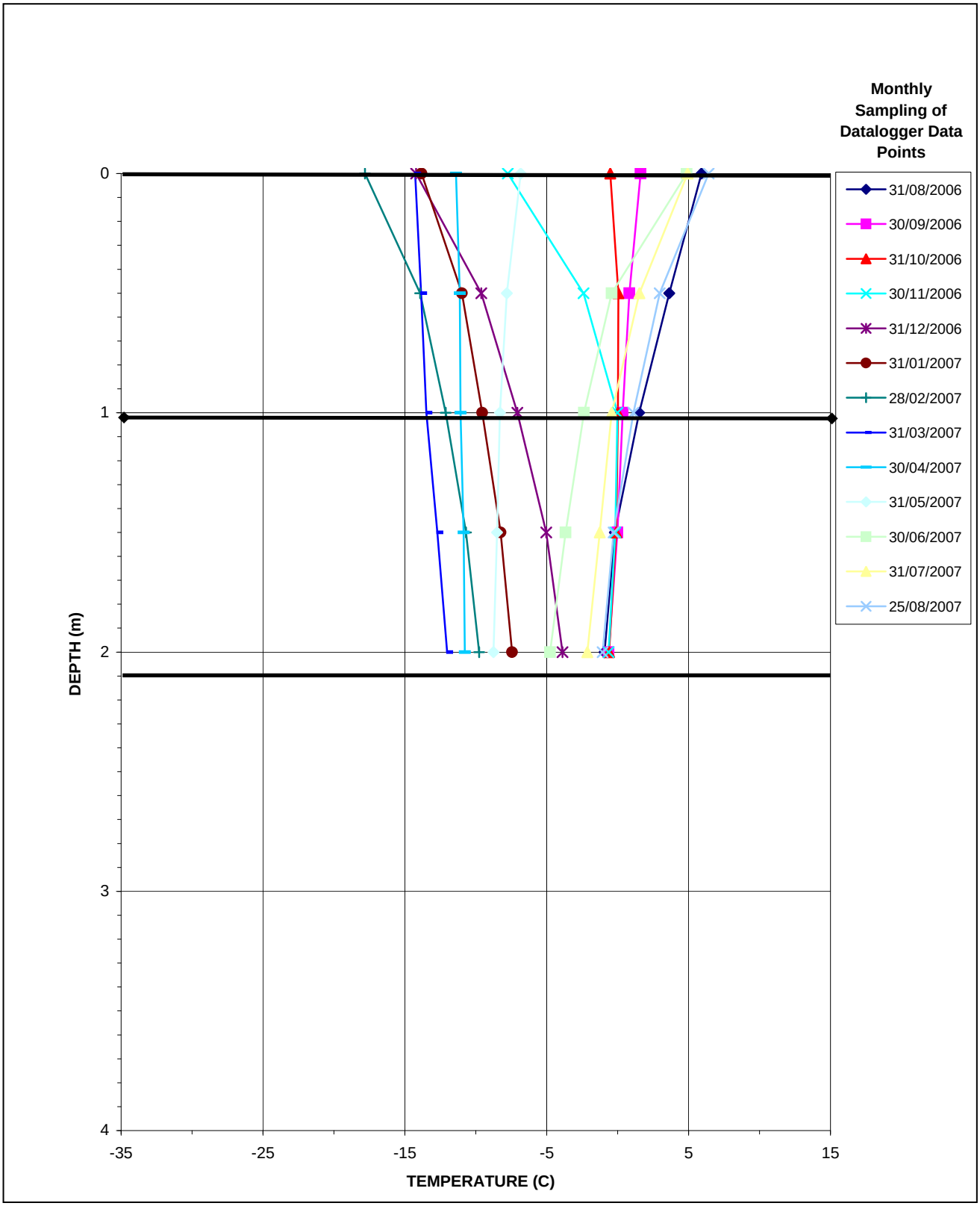


Figure 8 FOX-4 Cape Hooper – Thermal Data Graphs – Thermistor Station T3

Table 6-9: 2006-2007 Thermal Data - FOX-4 Cape Hooper - Thermistor Station T4

DATA T4 2006-2007

	DATE	TIME	ANALOG 1	ANALOG 2	ANALOG 3	ANALOG 4	ANALOG 5
	MM/DD/YY	HH:MM:SS					
DEPTH (m)			0	0.5	1	1.5	2
	31/08/2006	12:00:00	4.5668	2.0137	-0.0491	-3.7373	-1.3713
	30/09/2006	12:00:00	1.0141	-7.6785	0.0536	-3.5309	-0.9862
	31/10/2006	12:00:00	0.0682	0.0682	0.0095	-1.0055	-0.9041
	30/11/2006	12:00:00	-4.261	-0.6476	-0.0882	-0.6137	-0.8606
	31/12/2006	12:00:00	-13.6623	-9.5759	-6.689	-4.8288	-3.3148
	31/01/2007	12:00:00	-11.9086	-10.1223	-8.9473	-8.076	-6.9872
	28/02/2007	12:00:00	-14.9684	-12.1643	-10.5412	-9.5167	-8.4275
	31/03/2007	12:00:00	-13.2765	-12.745	-12.1551	-11.4843	-10.7416
	30/04/2007	12:00:00	-10.1906	-10.3135	-10.0085	-9.9675	-10.1906
	31/05/2007	12:00:00	-6.7624	-7.4544	-7.7151	-8.003	-8.7558
	30/06/2007	12:00:00	0.579	-1.8217	-2.9991	-4.2003	-5.9207
	31/07/2007	12:00:00	2.7179	-0.5506	-0.9669	-1.9411	-3.6998
	25/08/2007	17:59:49	4.0166	1.7322	-0.1467	-0.9041	-1.5153

[1] This data is a representative sampling of 2006-2007 data points downloaded from thermistor datalogger at station T4. The datalogger actually recorded data points (temperatures) every 12 hours. In this table, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

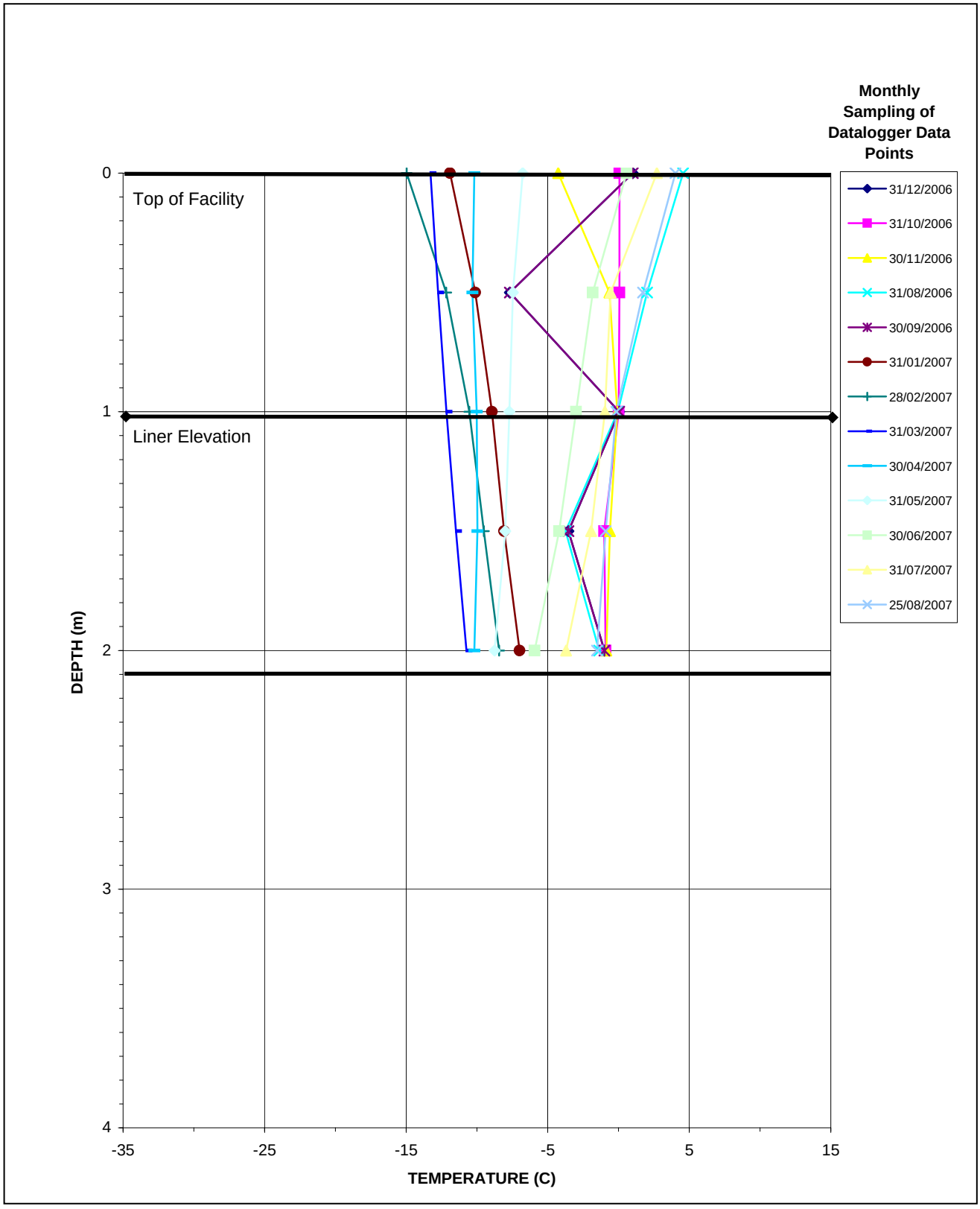


Figure 9 FOX-4 Cape Hooper – Thermal Data Graphs – Thermistor Station T4

Table 6- 10: 2006-2007 Thermal Data - FOX-4 Cape Hooper - Thermistor Station T5

DATA T5 2006-2007

	DATE	TIME	ANALOG 1	ANALOG 2	ANALOG 3	ANALOG 4	ANALOG 5
	MM/DD/YY	HH:MM:SS					
DEPTH (m)			0	0.5	1	1.5	2
	31/08/2006	12:00:00	8.3239	4.8626	2.4383	0.127	-0.6864
	30/09/2006	12:00:00	4.6775	1.0141	0.6381	0.127	-0.4584
	31/10/2006	12:00:00	-1.7308	-0.3222	0.1466	0.0536	-0.4146
	30/11/2006	12:00:00	-14.709	-7.4727	-2.1079	0.0095	-0.4146
	31/12/2006	12:00:00	-24.1791	-15.1493	-10.564	-7.9253	-6.0083
	31/01/2007	12:00:00	-25.9365	-15.6423	-11.977	-10.4091	-9.2662
	28/02/2007	12:00:00	-24.2906	-17.9419	-14.3994	-12.8228	-11.6531
	31/03/2007	12:00:00	-14.5148	-15.1029	-14.5842	-14.1779	-13.552
	30/04/2007	12:00:00	0.579	-11.5208	-11.3612	-11.4114	-11.4342
	31/05/2007	12:00:00	2.6975	-6.2983	-7.7471	-8.4092	-8.847
	30/06/2007	12:00:00	15.8013	2.1347	-1.0392	-2.564	-3.8825
	31/07/2007	12:00:00	10.049	3.4202	0.6825	-0.5846	-1.4961
	24/08/2007	12:00:00	10.6763	4.4668	1.913	-0.2053	-0.9282

This data is a representative sampling of 2006-2007 data points downloaded from thermistor datalogger at station T5. The datalogger actually recorded data points (temperatures) every 12 hours. In this table, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

No data was collected by the datalogger after 3 April, 2007 at 12:00:00. The reason for this is not clear. All cables and connectors were found intact.

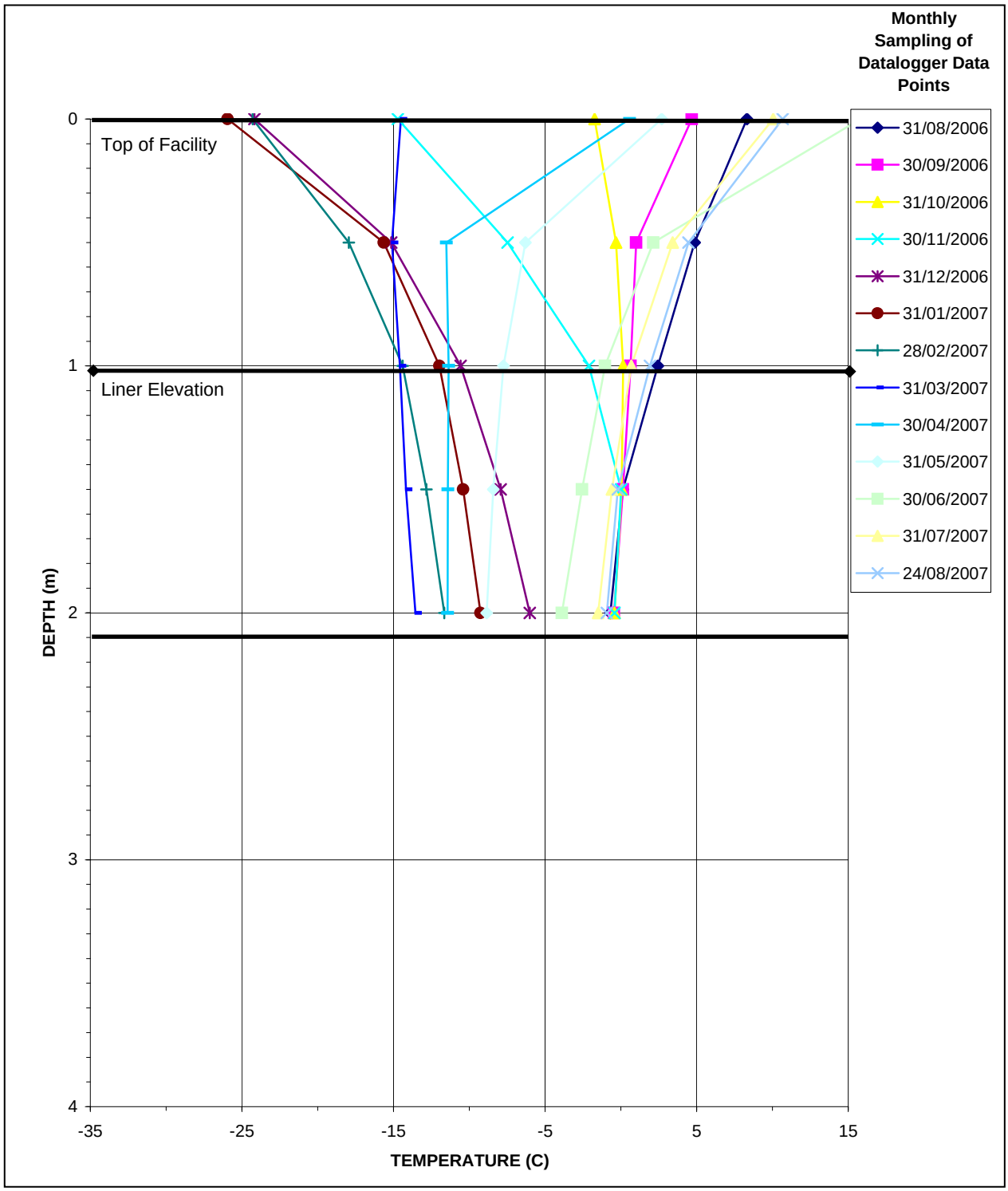


Figure 10 FOX-4 Cape Hooper – Thermal Data Graphs – Thermistor Station T5

Table 6- 11: 2006-2007 Thermal Data - FOX-4 Cape Hooper - Thermistor Station T6

DATA T6 2006-2007

	DATE	TIME	ANALOG 1	ANALOG 2	ANALOG 3	ANALOG 4	ANALOG 5
	MM/DD/YY	HH:MM:SS					
DEPTH (m)			0	0.5	1	1.5	2
	31/08/2006	12:00:00	6.625	4.5773	1.8326	-0.0686	-0.8219
	30/09/2006	12:00:00	2.0994	0.9694	0.4805	0.0095	-0.5846
	31/10/2006	12:00:00	-1.4626	-0.1028	0.0878	-0.01	-0.4924
	30/11/2006	12:00:00	-13.1894	-6.5052	-1.3617	-0.0882	-0.4584
	31/12/2006	12:00:00	-22.7071	-16.5031	-11.6713	-9.1341	-6.8358
	31/01/2007	12:00:00	-24.0098	-16.3201	-12.745	-11.2473	-9.8673
	28/02/2007	12:00:00	-23.8621	-18.478	-14.9869	-13.4969	-12.1551
	31/03/2007	12:00:00	-15.1307	-14.4132	-14.6026	-14.4502	-13.86
	30/04/2007	12:00:00	-9.5395	-11.7443	-11.799	-11.8629	-11.7762
	31/05/2007	12:00:00	-2.0698	-6.1373	-8.0852	-8.8014	-9.2434
	30/06/2007	12:00:00	8.7818	1.6019	-1.1742	-2.5119	-3.948
	31/07/2007	12:00:00	6.2533	2.9323	0.0682	-0.8219	-1.7882
	25/08/2007	16:57:36	7.1381	3.6269	1.4869	-0.1467	-0.9041

This data is a representative sampling of 2006-2007 data points downloaded from thermistor datalogger at station T6. The datalogger actually recorded data points (temperatures) every 12 hours. In this table, one data point per month (end of month) is tabulated and graphically depicted in this report (as per DCC Terms of Reference). A complete datalogger data set for 2006-2007 is available in the Addendum CD-ROM to this report (3 formats as per the DCC Terms of Reference: CSV, MS Excel, RAW data).

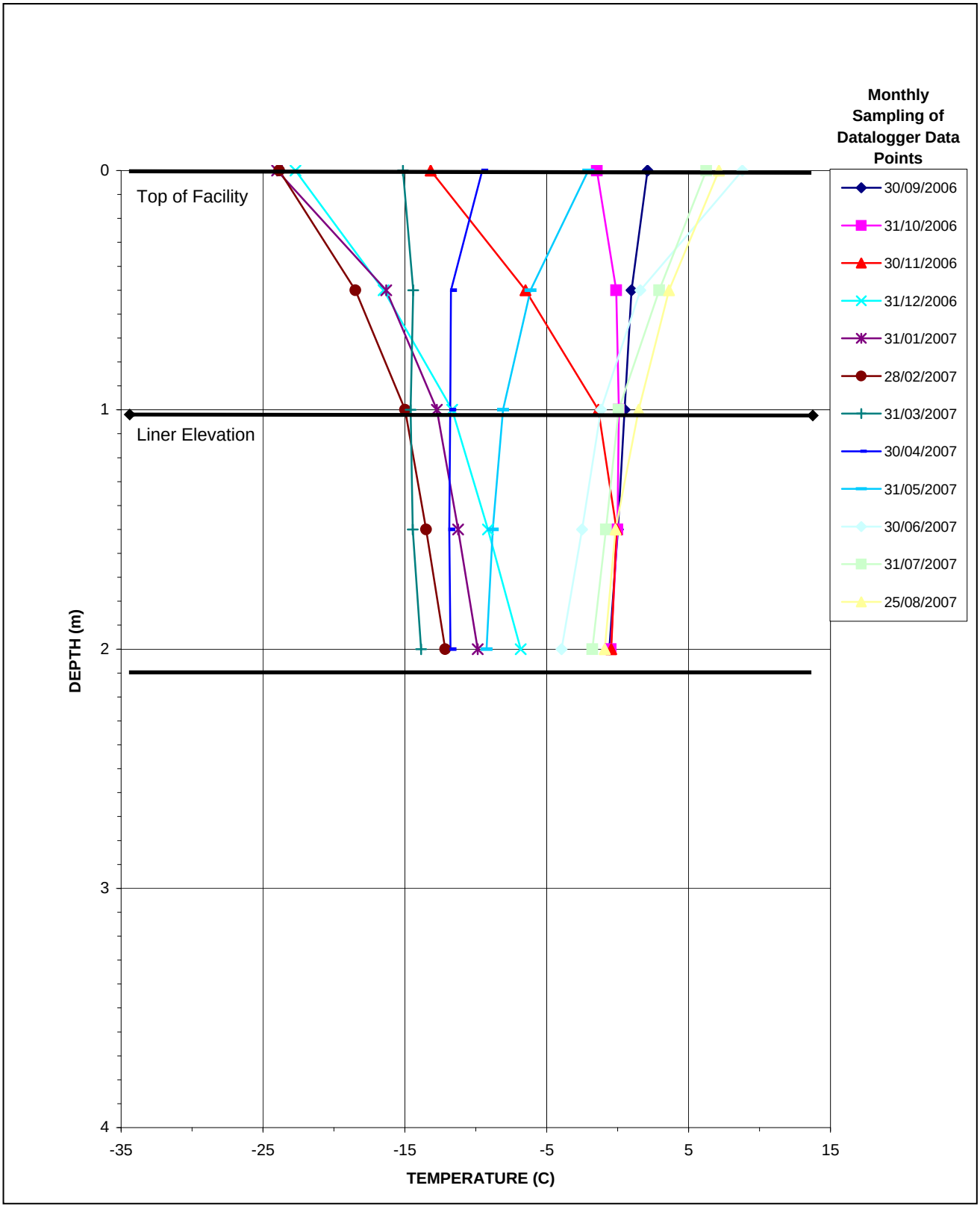


Figure 11 FOX-4 Cape Hooper – Thermal Data Graphs – Thermistor Station T6

6.6.2 Thermistor Maintenance Report Templates

The 2007 Thermistor Maintenance Report Templates are included in the following tables.

Table 6-12: 2007 Thermistor Maintenance Report - Thermistor Station T1

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contractor Name:	**FRANZ - Nunatta**	Inspection Date:	**21-Aug-07**
Prepared By:	**Ryan Fletcher**		

Thermistor Information

Site Name:	**FOX-4**	Thermistor Location:	**Tier II Disposal Facility**		
Thermistor Number:	**T1**	Inclination:	**Vertical**		
Install Date:	**15-Aug-98**	First Date Event	**05-Jul-99**	Last Date Event	**15-Aug-05**
Coordinates and Elevation	**N20050**	**E20388**		Elevation:	**?**
Length of Cable	**4.27**	Cable Lead Above Ground	**1.9**	Nodal Points	**5**
Datalogger Serial #	**705043**	Cable Serial # 1	**String#4**		

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☑	☐	**Secured with gravel at the base**
Cover	☑	☐	
Data Logger	☑	☐	
Cable	☑	☐	
Beads	☑	☐	**Check Connectors**

Battery Installation Date: 21-Aug-07

Battery Levels: Main **11.34V (BEST)** Aux **12.77V (GOOD)**

Observations

Memory used: 21%

Analog 2 and 3 not working

Proposed Maintenance

Analog Strings 2 & 3 are not in working condition. Should be replaced.

Table 6-13: 2007 Thermistor Maintenance Report - Thermistor Station T2

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contractor Name:	**FRANZ - Nunatta**	Inspection Date:	**22-Aug-07**
Prepared By:	**Ryan Fletcher**		

Thermistor Information

Site Name:	**FOX-4**	Thermistor Location:	**Tier II Disposal Facility**		
Thermistor Number:	**T2**	Inclination:	**Vertical**		
Install Date:		First Date Event		Last Date Event	
Coordinates and Elevation				Elevation:	
Length of Cable	**1.59**	Cable Lead Above Ground		Nodal Points	**5**
Datalogger Serial #	**67755**	Cable Serial #			

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☑	☐	
Cover	☑	☐	
Data Logger	☑	☐	
Cable	☑	☐	
Beads	☑	☐	

Battery Installation Date: **Battery installed Aug 22/07**

Battery Levels: Main **11.34V** (100% Best) Aux **13.26V** (90% green/full)

Observations

Memory used is 21%

- Setting/Programming checked and reset. Clock Set to local Time

Proposed Maintenance

Table 6-14: 2007 Thermistor Maintenance Report - Thermistor Station T3

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contractor Name:	**FRANZ - Nunatta**	Inspection Date:	**22-Aug-07**
Prepared By:	**Ryan Fletcher**		

Thermistor Information

Site Name:	**FOX-4**	Thermistor Location:	**Tier II Disposal Facility**		
Thermistor Number:	**T3**	Inclination:	**Vertical**		
Install Date:		First Date Event		Last Date Event	
Coordinates and Elevation				Elevation:	
Length of Cable	**1.56**	Cable Lead Above Ground		Nodal Points	**5**
Datalogger Serial #	**67725**	Cable Serial #			

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☐	☑	**Bent (Repaired onsite)**
Cover	☐	☑	**Missing (Found, had blown away)**
Data Logger	☑	☐	
Cable	☑	☐	
Beads	☑	☐	

Battery Installation Date: **21-Aug-07**

Battery Levels: Main **11.34V** (Best 100%) Aux **13.87V** (Best 100%)

Observations

Memory battery best before December 2006. Analog 1 - 5 is green. Warm up time is 0.035 and charged to 0.210. 0.210. Reset datalogger.

Proposed Maintenance

Table 6-15: 2007 Thermistor Maintenance Report - Thermistor Station T4

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contractor Name:	**FRANZ - Nunatta**	Inspection Date:	**22 August, 2007**
Prepared By:	**Ryan Fletcher**		

Thermistor Information

Site Name:	**FOX-4**	Thermistor Location:	**Tier II Disposal Facility**		
Thermistor Number:	**T4**	Inclination:	**Vertical**		
Install Date:		First Date Event		Last Date Event	
Coordinates and Elevation				Elevation:	
Length of Cable	**1.67**	Cable Lead Above Ground		Nodal Points	**5**
Datalogger Serial #		Cable Serial #			

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☑	☐	
Cover	☑	☐	
Data Logger	☑	☐	
Cable	☑	☐	
Beads	☑	☐	

Battery Installation Date: **Not indicated on datalogger/battery label.**

Battery Levels: Main **11.34V** (100% Best) Aux **13.02V** (90% Best)

Observations

Used memory: 21%

Proposed Maintenance

Table 6-16: 2007 Thermistor Maintenance Report - Thermistor Station T5

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contractor Name:	**FRANZ - Nunatta**	Inspection Date:	**21-Aug-07**
Prepared By:	**Ryan Fletcher**		

Thermistor Information

Site Name:	**FOX-4**	Thermistor Location:	**Tier II Disposal Facility**		
Thermistor Number:	**T5**	Inclination:	**Vertical**		
Install Date:		First Date Event		Last Date Event	
Coordinates and Elevation				Elevation:	
Length of Cable	**1.39**	Cable Lead Above Ground		Nodal Points	**5**
Datalogger Serial #		Cable Serial #			

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☑	☐	
Cover	☑	☐	
Data Logger	☑	☐	
Cable	☑	☐	
Beads	☑	☐	

Battery Installation Date: **Label indicates: Lithium Battery (datalogger expiration 09/2001, however this battery was reported as changed in 2005.**

Battery Levels: Main **11.34V** (100% Best) Aux **15.38 V** (90% Best)

Observations

Used memory: 13%. Reset datalogger. Downloaded data. Changed battery.

Proposed Maintenance

Table 6-17: 2007 Thermistor Maintenance Report - Thermistor Station T6

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contractor Name:	**FRANZ - Nunatta**	Inspection Date:	**22-Aug-07**
Prepared By:	**Ryan Fletcher**		

Thermistor Information

Site Name:	**FOX-4**	Thermistor Location:	**Tier II Disposal Facility**		
Thermistor Number:	**T6**	Inclination:	**Vertical**		
Install Date:		First Date Event		Last Date Event	
Coordinates and Elevation				Elevation:	
Length of Cable	**1.49**	Cable Lead Above Ground		Nodal Points	**5**
Datalogger Serial #	**806104**	Cable Serial #			

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☑	☐	
Cover	☑	☐	
Data Logger	☑	☐	
Cable	☑	☐	
Beads	☑	☐	

Battery Installation Date: **Label indicates: Lithium Battery (datalogger expiration 09/2001, however this battery was reported as changed in 2005.**

Battery Levels	Main		Aux	
	11.34V		**12.65 V**	
	full green		90% green	
	100% Best		85% Best	

Observations

Used memory: 13% and fulll. Warm up time is 0.160 and changed to 0.210

Proposed Maintenance

6.7 Soil Sample Analytical Data

The concentrations of total Cd and Hg are below detection limit, while the concentrations of the other metals analyzed are low in all soil samples (surface and subsurface). In case of the Lower Site landfill, the metal concentrations are generally higher in the downgradient soil samples as compared to the upgradient soil samples. In the case of the Tier II landfill, the metal concentrations in the upgradient and downgradient soil samples are nearly comparable.

The concentrations of PCBs are below the detection limit (10 mg/kg) in the surface and subsurface samples from both the Lower Site Landfill and Tier II Facility.

The results for TPH analysis in soil samples show that the concentrations are either non-detect or fairly low, ranging from 28 to 283 mg/kg in the upgradient and downgradient samples.

The soil sample analytical data is included in the following page as Table 6-18.

Table 6-18: Summary of 2006 Soil Analytical Data - DCC Tier II Soil Disposal and Lower Site Landfill

Sample #	Location	Depth (cm)	Cu [mg/kg]		Ni [mg/kg]		Co [mg/kg]		Cd [mg/kg]		Pb [mg/kg]		Zn [mg/kg]		Cr [mg/kg]		As [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
LOWER SITE LANDFILL - UPGRADIENT																		
MW-16 (Soil) 0-15 cm	MW-16	0-15	5	5	5	6	2	2	< 1	<0.9	<10	<10	9	11	12	12	5	13.8
MW-16 (Soil) 40-50 cm	MW-16	40-50	21	5	5	5	3	2	< 1	<0.9	<10	<10	16	11	22	13	7.4	2.4
TIER II FACILITY - UPGRADIENT / LOWER SITE LANDFILL - DOWNGRADIENT																		
MW-14 (Soil) 0-15 cm	MW-14	0-15	10	10	7	8	3	2	< 1	<0.9	<10	<10	17	20	19	19	5.5	5.9
MW-14 (Soil) 40-50 cm	MW-14	40-50	26	10	10	8	3	2	< 1	<0.9	<10	<10	19	19	22	18	162	9.2
MW-15 (Soil) 0-15 cm	MW-15	0-15	10	7	7	6	3	2	< 1	<0.9	<10	<10	14	14	19	15	7.2	5.8
MW-15 (Soil) 40-50 cm	MW-15	40-50	13	5	10	5	3	2	<1	<0.9	<10	<10	18	12	22	11	24.1	3.5
TIER II FACILITY - DOWNGRADIENT																		
MW-10 (Soil) 0-15cm	MW-10	0-15	10	10	9	9	3	3	< 1	<0.9	<10	<10	20	19	20	18	5.8	9.4
MW-10 (Soil) 40-50 cm	MW-10	40-50	11	11	10	12	3	4	< 1	<0.9	<10	<10	20	25	19	23	7.2	8.1
MW-11 (Soil) 0-15 cm	MW-11	0-15	14	7	13	7	4	2	< 1	<0.9	<10	<10	23	16	26	16	7.6	6.2
MW-11 (Soil) 40-50 cm	MW-11	40-50	5	4	6	6	2	2	< 1	<0.9	<10	<10	14	15	16	15	4.7	4.6
MW-12 (Soil) 0-15 cm	MW-12	0-15	7	9	7	8	2	2	< 1	<0.9	<10	<10	15	17	19	17	18.1	5.1
MW-12 (Soil)40-50 cm	MW-12	40-50	12	11	10	8	3	3	< 1	<0.9	<10	<10	18	17	20	18	8.6	7.5
MW-13 (Soil) 0-15 cm	MW-13	0-15	8	8	8	8	2	2	< 1	<0.9	<10	<10	16	17	20	18	8.5	5.4
MW-13 (Soil) 40-50 cm	MW-13	40-50	8	8	8	7	3	2	< 1	<0.9	<10	<10	17	16	20	17	5.3	5

Notes

NV = No Value
ND = Non - Detectable

Table 6-18: Summary of 2006 Soil Analytical Data - DCC Tier II Soil Disposal and Lower Site Landfill

Sample #	Location	Depth (cm)	Hg [mg/kg]		PCBs [mg/kg]		F1 C_6-C_{10} [mg/kg]		F2 C_{10}-C_{16} [mg/kg]		F3 C_{16}-C_{34} [mg/kg]		TPH C_6-C_{34} [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
LOWER SITE LANDFILL - UPGRADIENT														
MW-16 (Soil) 0-15 cm	MW-16	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	<10	<20	<12	ND
MW-16 (Soil) 40-50 cm	MW-16	40-50	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	10	<20	10	ND
TIER II FACILITY - UPGRADIENT / LOWER SIT														
MW-14 (Soil) 0-15 cm	MW-14	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<11	20	42	120	217	140	259
MW-14 (Soil) 40-50 cm	MW-14	40-50	<0.04	< 0.04	<0.1	<0.1	92	<11	2620	<20	820	135	3532	135
MW-15 (Soil) 0-15 cm	MW-15	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<12	<10	<20	20	<20	20	ND
MW-15 (Soil) 40-50 cm	MW-15	40-50	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	30	<20	30	ND
TIER II FACILITY - DOWNGRADIENT														
MW-10 (Soil) 0-15cm	MW-10	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	20	<20	20	ND
MW-10 (Soil) 40-50 cm	MW-10	40-50	<0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	<10	<20	<12	ND
MW-11 (Soil) 0-15 cm	MW-11	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<11	10	<20	40	<20	50	ND
MW-11 (Soil) 40-50 cm	MW-11	40-50	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	20	<20	20	ND
MW-12 (Soil) 0-15 cm	MW-12	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<11	10	<20	50	<20	60	ND
MW-12 (Soil)40-50 cm	MW-12	40-50	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	30	<20	30	ND
MW-13 (Soil) 0-15 cm	MW-13	0-15	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	20	28	20	28
MW-13 (Soil) 40-50 cm	MW-13	40-50	< 0.04	< 0.04	<0.1	<0.1	<12	<11	<10	<20	10	<20	10	ND

Notes

NV = No Value
ND = Non - Detectable

6.8 Groundwater Sample Analytical Data

The concentrations of total Cd and Hg are below the laboratory detection limit, while the concentrations of Ni, Co, Cu, Cr, Pb and As were generally low in the groundwater samples. In the case of the Tier II disposal site, the Zn concentrations are fairly high in the groundwater samples from downgradient wells MW-12 (2.09 mg/L) and MW-13 (1.28 mg/L) as compared to the upgradient groundwater samples.

The concentrations of PCBs and TPH are non-detect for all groundwater samples with the exception of MW-14, which shows a high TPH concentration of 0.300 mg/L.

The groundwater sample analytical data is included in the following page as Table 6-19.

Table 6-19: Summary of 2006/2007 Groundwater Analytical - DCC Tier II Soil Disposal and Lower SiteLandfill

Sample #	Location	Groundwater Elevation (masl)	Cu [mg/L]		Ni [mg/L]		Co [mg/L]		Cd [mg/L]		Pb [mg/L]		Zn [mg/L]		Cr [mg/L]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
LOWER SITE LANDFILL - UPGRADIENT WELL																
MW-16	MW-16	-	0.006	0.002	0.020	0.016	0.003	0.003	<0.001	<0.001	0.030	0.002	0.410	0.040	0.051	0.004
TIER II FACILITY - UPGRADIENT																
MW-14	MW-14	-	0.005	0.008	0.040	0.053	0.011	0.015	<0.001	<0.001	0.010	0.011	0.300	0.170	0.009	0.060
MW-15	MW-15	-	0.005	0.007	0.010	0.011	0.002	0.001	<0.001	<0.001	<0.01	0.003	0.070	0.150	0.006	0.008
TIER II FACILITY - DOWNGRADIENT WELLS																
MW-10	MW-10	-	0.010	0.006	0.050	0.024	0.002	0.001	<0.001	<0.001	0.010	0.008	0.600	0.460	0.273	0.099
MW-11	MW-11	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
MW-12	MW-12	-	0.121	0.019	0.020	0.016	0.007	0.008	<0.001	<0.001	0.010	0.007	2.44	2.09	0.013	0.006
MW-13	MW-13	-	0.032	0.005	0.020	0.017	0.007	0.004	<0.001	<0.001	0.010	0.004	1.60	1.28	0.006	0.003

Notes

NV = No Value

ND = Non - Detectable

Table 6-19: Summary of 2006/2007 Groundwater Analytical - DCC Tier II Soil Disposal and Lower SiteLandfill

Sample #	Location	Groundwater Elevation (masl)	As [mg/L]		Hg [mg/L]		PCBs [ug/L]		F1 C_6-C_{10} [ug/L]		F2 C_{10}-C_{16} [mg/L]		F3 C_{16}-C_{34} [mg/L]		TPH C_6-C_{34} [mg/L]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
LOWER SITE LANDFILL - UPGRADIENT																
MW-16	MW-16	-	0.001	0.002	<0.0002	<0.0001	<0.1	ND	< 25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
TIER II FACILITY - UPGRADIENT																
MW-14	MW-14	-	0.001	0.004	<0.0002	<0.0001	<0.1	ND	275	97	0.400	0.300	<0.1	<0.1	0.675	0.397
MW-15	MW-15	-	0.001	0.002	<0.0002	<0.0001	<0.1	ND	< 25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
TIER II FACILITY - DOWNGRADIENT WE																
MW-10	MW-10	-	0.004	0.004	<0.0002	<0.0001	<0.1	ND	< 25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
MW-11	MW-11	-	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
MW-12	MW-12	-	0.008	0.009	<0.0002	<0.0001	<0.1	ND	< 25	<25	<0.1	<0.1	<0.1	<0.1	<0.1	ND
MW-13	MW-13	-	0.004	0.004	<0.0002	<0.0001	<0.1	ND	< 25	26	<0.1	<0.1	<0.1	<0.1	<0.1	0.026

Notes

NV = No Value

ND = Non - Detectable

6.9 Monitoring Well Sampling Logs

The monitoring well sampling logs for MW-10 to MW-16 are included in the following pages as Table 6-20 to 6-26.

Table 6-20: Monitoring Well Sampling Log MW 10 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	24/08/2007	Time:	9:30
Names of Samplers:	R. F.		
Landfill Name:	DCC Tier II		
Monitoring Well ID:	MW-10		
Well Sampling Event:	2007	Sample Number:	MW-10
Condition of Well:	Bentonite swelled to cap. Has been cleaned	Procedure/Equipment:	Bailer
Volume Purged Water (L):	5.5	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	7		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	52	Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	59	from ground surface	
Depth to bottom (cm):	134	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	5.23/ 6.06/ 6.47/ 6.56/ 6.69/ 6.81/ 6.81		
Conductivity (µS/cm) :	321/311/312/309/301/295/293		
Temperature (^{O}C):	4.3/2.8/2.8/2.5/2.3/2.2/2.2		
Depth of water (cm):	75		
Well volume of water (mL):	4500		
Length screen collecting water:			
Shape factor:			

Table 6-21: Monitoring Well Sampling Log MW 11 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	24-08-2007	Time:	AM
Names of Samplers:	R. F.		
Landfill Name:	DCC Tier II		
Monitoring Well ID:	MW-11		
Well Sampling Event:	2007	Sample Number:	
Condition of Well:	Obstruction in well (bailer)	Procedure/Equipment:	-
Volume Purged Water (L):	-	Purging (Y/N):	-
Sampling Equipment:	-		
Filtration (Y/N):	-	Acidification (Y/N):	-
Decontamination required (Y/N):	-	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	7		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	
Depth to water surface (cm):	-	Method (electric meter, steel tape, etc):	
(from top of pipe)	-		
Static water level (cm):	-	from ground surface	
Depth to bottom (cm):	-	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	-	Method (electric meter, steel tape, etc):	
pH:	-		
Conductivity (µS/cm) :	-		
Temperature (^{O}C):	-		
Depth of water (cm):	-		
Well volume of water (mL):	-		
Length screen collecting water:	-		
Shape factor:	-		

Table 6-22: Monitoring Well Sampling Log MW 12 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	25/8/2007	Time:	AM
Names of Samplers:	R.F.		
Landfill Name:	DCC Tier II		
Monitoring Well ID:	MW-12		
Well Sampling Event:	2007	Sample Number:	
Condition of Well:	Bentomite swelled to lid	Procedure/Equipment:	Bailer
Volume Purged Water (L):	6	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	N

Measured Data

Well height above ground (cm):	2		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	10	Method (electric meter, steel tape, etc):	Electric Meter
(from top of pipe)			
Static water level (cm):	12	from ground surface	
Depth to top of bailer (cm):	119	Evidence of sludge etc:	Some bentonite in metal casing
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	6.63/ 6.56/ 6.43/ 6.34/ 6.67/ 6.76/ 6.70/ 6.71		
Conductivity (µS/cm) :	247/ 232/ 229/ 233/ 240/ 244/ 240/ 240		
Temperature (^{O}C):	4.2/ 4.1/ 4.3/ 4.0/ 3.9/ 3.9/ 4.0/ 4.0		
Depth of water (cm):	107		
Well volume of water (mL):	6420		
Length screen collecting water:			
Shape factor:			

Table 6-23: Monitoring Well Sampling Log MW 13 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	25/08/2007	Time:	
Names of Samplers:	R.F.		
Landfill Name:	DCC Tier II		
Monitoring Well ID:	MW-13		
Well Sampling Event:	2007	Sample Number:	MW-13
Condition of Well:	Bentonite swelled to lid	Procedure/Equipment:	Bailer
Volume Purged Water (L):	8	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	-2		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	4	Method (electric meter, steel tape, etc):	Electric Meter
(from top of pipe)			
Static water level (cm):	2	from ground surface	
Depth to top of bailer (cm):	1.05	Evidence of sludge etc:	Some bentonite in metal casing and well casing.
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	5.94/ 6.14/ 6.25/ 6.28/ 6.28/ 6.38/ 6.38/ 6.36/ 6.36/ 6.36/ 6.33/ 6.32		
Conductivity (µS/cm) :	201/ 161/ 154/ 154/161/ 152/ 131/ 151/ 136/ 139/ 136		
Temperature (^{O}C):	3.2/ 3.0/ 2.8/ 2.8/ 2.4/ 2.5/ 3.2/ 2.5/ 3.1/ 3.1/ 3.2		
Depth of water (cm):	103		
Well volume of water (mL):	6180		
Length screen collecting water:			
Shape factor:			

Table 6-24: Monitoring Well Sampling Log MW 14 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	24/08/2007	Time:	PM
Names of Samplers:	R.F		
Landfill Name:	Lower Site		
Monitoring Well ID:	MW-14		
Well Sampling Event:	2007	Sample Number:	MW-14
Condition of Well:	good	Procedure/Equipment:	Bailer
Volume Purged Water (L):	7	Purging (Y/N):	N
Sampling Equipment:			
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	17		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	57	Method (electric meter, steel tape, etc):	Electric Meter
(from top of pipe)			
Static water level (cm):	74	from ground surface	
Depth to bottom (cm):	166.5	Evidence of sludge etc:	
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	5.36/ 5.53/ 5.69/ 5.7/ 5.66		
Conductivity (µS/cm) :	86/ 91/ 89/ 90/ 89		
Temperature (^{O}C):	5.0/ 3.2/ 3.5/ 3.6/ 3.11		
Depth of water (cm):	92.5		
Well volume of water (mL):	5550		
Length screen collecting water:			
Shape factor:			

Table 6-25: Monitoring Well Sampling Log MW 15 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	24/08/2007	Time:	PM
Names of Samplers:	R.F.		
Landfill Name:	DCC Tier II		
Monitoring Well ID:	MW-15		
Well Sampling Event:	2007	Sample Number:	MW-15
Condition of Well:	Bentonite swelled to lid. Missing J-plug	Procedure/Equipment:	Bailer
Volume Purged Water (L):	5	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	NA
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	7		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	3.3	Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	10.3	from ground surface	
Depth to bottom (cm):	N/A	Evidence of sludge etc:	Some bentonite in metal casing.
		Evidence of freezing/siltation:	yes - freezing
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	paste
pH:	6.07/ 6.74/ 6.86/ 6.88/ 6.84		
Conductivity (µS/cm) :	162/ 154/ 148/ 150/ 150		
Temperature (^{O}C):	5.5/ 4.4/ 4.1/3.7/ 3.8		
Depth of water (cm):	N/A		
Well volume of water (mL):	N/A		
Length screen collecting water:			
Shape factor:			

Table 6-26: Monitoring Well Sampling Log MW 16 - DCC Tier II Soil Disposal and Lower Site Landfill

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	24-08-2007	Time:	PM
Names of Samplers:	R.F.		
Landfill Name:	Lower Site Landfill		
Monitoring Well ID:	MW-16		
Well Sampling Event:	2007	Sample Number:	MW-16
Condition of Well:	Bentonite swelled to cap. Obstruction at water surface	Procedure/Equipment:	-
Volume Purged Water (L):	2.5	Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	NA
Decontamination required (Y/N):	N	Number washes and rinses:	NA

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):	49	Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	61	from ground surface	
Depth to top of bailer (cm):	139	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	0	Method (electric meter, steel tape, etc):	Paste
pH:	4.56/ 5.28/ 5.59/ 5.67/ 5.81/ 5.85		
Conductivity (µS/cm) :	89/ 66/ 65/ 64/ 64/ 65		
Temperature (^{O}C):	6.0/ 4.0/ 3.7/ 3.5/ 3.6		
Depth of water (cm):	78		
Well volume of water (mL):	4680		
Length screen collecting water:			
Shape factor:			

7.0 AIRSTRIP LANDFILL

7.1 Summary

The Airstrip Landfill is located at the lower site on high ground, south of the east end of the airstrip. Its surface area is approximately 2600 m^2.

The monitoring of this landfill includes visual inspection to verify for evidence of settlement or erosion and collection of soil samples to monitor for the presence of leachate. Soil sample locations are identified in Figure 12 FOX-4 Cape Hooper – Airstrip Landfill. The soil analytical data is presented in Table 7-6. Soils at all stations were sampled from the surface and subsurface as specified. There are no monitoring wells in this area.

The visual inspection report, including supporting photos and drawing, is presented in the following pages.

7.2 Visual Inspection Report

The visual inspection of the Airstrip Landfill was conducted on August 25, 2006. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material with trace cobbles. There are some areas that are comprised of cobbles and boulders.

Settlement

Indications of settlement were not observed.

Erosion

Based on the supplied topographical map it appears that the landfill was placed over a former natural drainage feature or gully. Erosion channels coincident with the former gullies are present and appeared larger than the original surveyed dimensions. In general both channels may have migrated upland by the 5 m to 6 m, these measurements were taken using a hand held GPS and compared to the original topographic survey contours. At the time of the measurements the GPS reported accuracy was approximately +/- 4 m. Round rock was noted in the erosion channels and may have been placed in the channels to reduce erosion. However the water flow velocity and slope of the top of the landfill is causing loss or displacement of the round rock.

As noted in the 2006 visual inspection report, active erosion is being observed. The cause of the erosion is evidenced by a seepage occurring just above the land fill area and seepage emerging from a point down gradient of the landfill indicating that both surface and sub surface flows of water are active in this area. This can cause erosion of the surface and piping in the subsurface both of which result in material loss of the capping layer.

Frost Action

No frost action was observed in this area.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted in the landfill however arctic hares and foxes were observed in the area.

Re-establishment of Vegetation

Re-establishment of vegetation was not noted.

Staining

Two of the stained areas originally noted in the 2005 inspection report was not noted in the 2007 visual inspection. However the area ST7-1 was noted and correctly located.

Seepage Points

Seepage is emerging just above the southern portion of the landfill and is emerging from the northern down-slope portion of the landfill. The seepage was noted to be limited at the time of the inspection but is likely to be quite high during the spring freshet.

Debris

Exposed debris was not noted.

Discussion

Based on the presence of significant and active erosion occurring on the capping layer the landfill performance is rated as marginal.

The erosion channels have been in-filled with round rock for erosion protection. This round rock is being displaced down the slope and is likely to be ineffective as means to control erosion in the long term. Nearby colluvium (angular rock) is available on site, which would be more effective at minimizing erosion and preventing debris exposure or loss of the insulative soil layer.

Table 7-1: Visual Inspection Checklist – Inspection Report – Airstrip Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **AIRSTRIP LANDFILL**
LANDFILL DESIGNATION: Landfill, Lower Site, South of East end of Airstrip
DATE OF INSPECTION: August 22, 2007
DATE OF PREVIOUS INSPECTION: August 25, 2006
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	NO								
Erosion	YES	For locations, refer to Figure 12 FOX-4 Cape Hooper – Airstrip Landfill. E7-1 E7-2	 50 m 25 m	 7 m 5 m	 0.5 m -1 m 0.5 m	14%* 5% *Only erosion channel length in landfill area was measured. In 2006 entire channel length was used. Actual length of erosion channel similar to 2006 observations	Erosion is occurring along channels within the capping cover material. The erosion channels likely were filled in with round rock in some areas to reduce erosion however the slope and flow gradient are too high and movement of the round rock is occurring. GPS measurements were taken (+/- 4m) and the erosion increased 5 or 6 m in the uphill directions since the original site survey was conducted.	Photographs: 7B7, 7C7, 7D7, 7E7, 7H7 For locations and directions of photographs, refer to Figure 12 FOX-4 Cape Hooper – Airstrip landfills.	The landfill may have been sited in a natural watercourse or drainage feature. The water flow is occurring along these infilled drainage features causing excessive erosion. If future work is conducted to reduce the erosion of the capping material the nearby colluvium (angular rock) should be used to minimize erosion. The colluvium (rocks) of the correct size should be used based on the water flow rate to minimize displacement of the armouring angular rock.
Frost Action	NO	Frost action was not noted.							
Sloughing and Cracking	NO								
Animal Burrows	NO								
Vegetation	NO							No vegetation was observed on the capping cover.	
Staining	NO	ST7-1 ST7-2 ST7-3	13 m N/A N/A	5m N/A N/A	3%			Staining noted as ST7-2 and 3 in 2005 not noted during the 2007 landfill inspection. Photographs: 7F7, 7G7 For locations and directions of photographs, refer to Figure 12 FOX-4 Cape Hooper – Airstrip landfills.	
Vegetation Stress	NO							No vegetation was observed on the capping cover.	
Seepage Points	YES	One seepage point is present on the south landfill boundary. Refer to Figure 12 FOX-4 Cape Hooper –Airstrip landfills.							
Debris Exposed	NO (but debris is visible outside of Landfill area)	Steel cable, drum, and metal debris visible outside of landfill area. Not likely related directly to the landfill activities.						Photographs: 7A7, 7I7, 7J7, 7K7 For locations and directions of photographs, refer to Figure 12 FOX-4 Cape Hooper – Airstrip landfills.	
Presence/Condition – Monitoring Instruments	YES	Refer to Figure 12 FOX-4 Cape Hooper –Airstrip landfills.						Refer to Figure 12 FOX-4 Cape Hooper – Airstrip landfills.	
Features of Note.	NO								

7.3 Preliminary Stability Assessment

The Preliminary Stability Assessment for the Airstrip Landfill has been completed as per the Terms of Reference and is included as Tables 7-2 of this report.

Table 7-2: Preliminary Stability Assessment – Airstrip Landfill

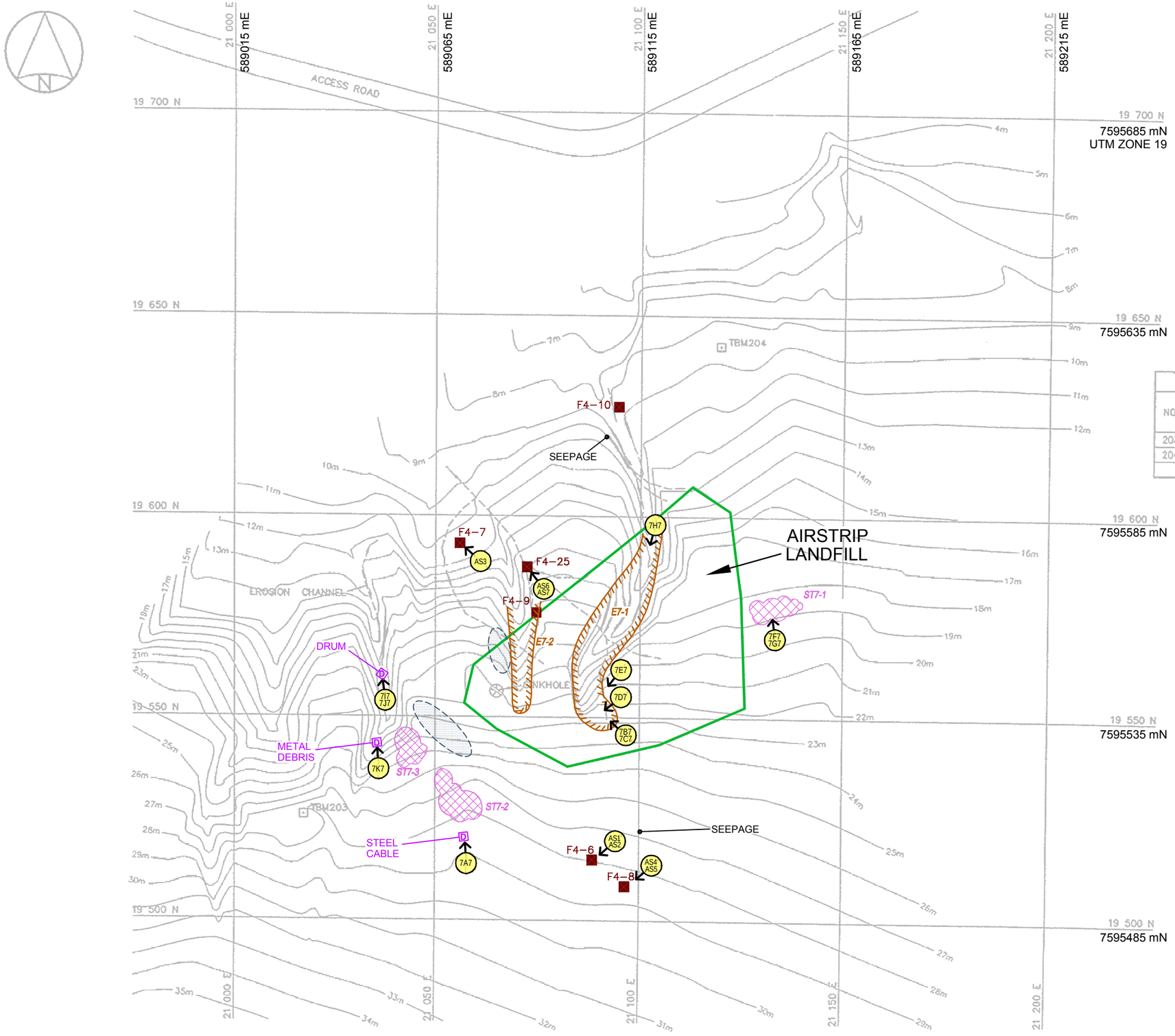
Feature	Severity Rating	Extent
Settlement	Acceptable	None
Erosion	Significant	Occasional
Frost Action	Not Observed	None
Staining	Not Observed	None
Vegetation Stress	Not Observed	None
Seepage / Ponded Water	Acceptable	Occasional
Debris Exposure	Not Observed	None
Overall Landfill Performance	**Marginal**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

7.4 Location Plan

The Location Plan for the Airstrip Landfill has been completed as per the Terms of Reference and is included in the following page as Figure 12 FOX-4 Cape Hooper – Airstrip Landfill.



LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

- TBM203 — TEMPORARY BENCHMARK
- SOIL SAMPLE
- LANDFILL BOUNDARY (APPROXIMATE)

2007 OBSERVATIONS:

- ST7-1 — STAINS
- D — DEBRIS
- E7-1 — EROSION
- POOLING
- SINKHOLE
- 7A7, 7B7 — PHOTOGRAPH LOCATION (INDICATING PHOTO NUMBER, LOCATION, VIEWING DIRECTION)

TEMPORARY BENCHMARKS

NO.	COORDINATES		ELEV. (m)	DESCRIPTION
	NORTHING	EASTING		
203	19 525.545	21 017.155	28.241	19mm DIA. PIPE/STONE CAIRN
204	19 642.453	21 119.708	10.019	19mm DIA. PIPE/STONE CAIRN

Title: FOX-4 CAPE HOOPER - AIRSTRIP LANDFILL

Project: FOX-4 CAPE HOOPER
DEW LINE CLEAN UP
LANDFILL MONITORING PLAN

Date: NOVEMBER 2007

Client: DEFENCE CONSTRUCTION CANADA

SCALE 1:1000

20 15 10 5 0 metres 25 50

FIGURE 12

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-5-AirstripLandfill.dwg

7.5 Photographic Records

The Photographic Record for the Airstrip Landfill has been completed as per the Terms of Reference and is included in the following page as Table 7-3. The Photographic Record only contains an index and “thumbnail” photographs; full sized photographs are contained in the Addendum CD-ROM.

Figure 7-3 Photographic Record - Airstrip Landfill

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
7A7	7A7.jpg 2007-08-23	Close up view of metal debris observed at 589072E/75975500N. Camera facing North.		Figure 6
7B7	7B7.jpg 2007-08-23	Close up view of erosion area observed at 589112E/7595533N. White card is 21cm by 28cm. Camera facing North-East.		Figure 6
7C7	7C7.jpg 2007-08-23	Wide angle view of seepage and erosion area observed at 589112E/7595533N. Camera facing North-East.		Figure 6
7D7	7D7.jpg 2007-08-23	South-West view of erosion area observed at 589112E/7595533N.		Figure 6
7E7	7E7.jpg 2007-08-23	Wide angle view of the same erosion area. White card is 21cm by 28cm and located at 589112E/7595533N. Camera facing South-West.		Figure 6
7F7	7F7.jpg 2007-08-23	Close up view of reddish soil staining observed at 589149E/7595557N.Camera facing North.		Figure 6
7G7	7G7.jpg 2007-08-23	Wide angle view of reddish soil staining. White card is 21cm by 28cm and located at 589149E/7595557N. Camera facing North.		Figure 6
7H7	7H7.jpg 2007-08-23	Facing upgradient at slope erosion at 589119E/7595583N. White card is 21cm by 28cm. Depth greater than 2.0 meters.		Figure 6
7I7	7I7.jpg 2006-08-24	Close up view of drum observed at 589047E/7595541N. Camera facing South-West.		Figure 6
7J7	7J7.jpg 2006-08-24	Wide angle view of drum and small stream. White card is 21cm by 28cm and located at 589047E/7595541N. Camera facing South.		Figure 6
7K7	7K7.jpg 2006-08-24	Close up view of metal debris observed at 589047E/75975528N. Camera facing South.		Figure 6
AS-1	AS-1.jpg	Soil sampling at F4-6 – showing hole to depth of 50 cm.		Figure 6
AS-2	AS-2.jpg	Showing soils sampling location F4-6 – facing southwest.		Figure 6
AS-3	AS-3.jpg	Soil sampling at F4-7 – showing hole to depth of 50 cm.		Figure 6

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
AS-4	AS-4.jpg	Soil sampling at F4-8 – showing hole to depth of 50 cm.		Figure 6
AS-5	AS-5.jpg	Showing soils sampling location F4-8 – facing southwest.		Figure 6
AS-6	AS-6.jpg	Soil sampling at F4-25 – showing hole to depth of 50 cm.		Figure 6
AS-7	AS-7.jpg	Showing soils sampling location F4-25 – facing northwest.		Figure 6

7.6 Thermal Monitoring Data

Not applicable to this landfill area.

7.7 Soil Sample Analytical Data

The concentrations of total Cd and Hg are below detection limits, while the concentrations of Cu, Ni, Co, Pb, Zn, Cr and As are generally low and comparable in the upgradient and downgradient soil samples at the Airstrip landfill (with the exception of relatively high concentrations detected in the upgradient, surface soil sample F4-8.

The concentrations of PCBs were non-detect in the soil samples, with the exception of F4-8 that contained a PCB concentration equal to the detection limit (0.1mg/kg).

The TPH chemical analyses results for the soil samples are non-detect or at low concentrations (32 mg/kg – F4-8). The results for hydrocarbons F1 and F2 were under detection limits for all samples, while F3 was detected in the surface soil sample F4-8.

The soil sample analytical data is included in the following page as Table 7-4.

Table 7-4: Summary of 2006/2007 Soil Analytical Data - Airstrip Landfill

Sample #	Location	Depth (cm)	Cu [mg/kg]		Ni [mg/kg]		Co [mg/kg]		Cd [mg/kg]		Pb [mg/kg]		Zn [mg/kg]		Cr [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
AIRSTRIP LANDFILL UPGRADIENT																
F4-8(Soil)0-15cm	F4-8	0-15	7	48	5	26	2	6	< 1	<0.9	< 10	24	11	55	17	46
F4-8(Soil)40-50cm	F4-8	40-50	4	19	5	18	2	6	< 1	<0.9	< 10	<10	10	29	18	27
F4-6(Soil) 0-15cm	F4-6	0-15	6	9	3	7	1	2	<1	<0.9	<10	<10	7	14	12	17
F4-6(Soil)40-50cm	F4-6	40-50	8	10	6	7	2	2	<1	<0.9	<10	<10	12	14	18	14
AIRSTRIP LANDFILL DOWNGRADIENT																
F4-7(Soil)0-15cm	F4-7	0-15	6	8	7	5	2	2	<1	<0.9	<10	<10	16	14	24	14
F4-7(Soil)40-50cm	F4-7	40-50	12	10	7	6	3	2	<1	<0.9	<10	<10	17	14	30	17
F4-25(Soil)0-15cm	F4-25	0-15	4	12	4	4	1	2	< 1	<0.9	< 10	<10	12	13	16	13
F4-25(Soil)40-50cm	F4-25	40-50	NV	6	NV	4	NV	1	NV	<0.9	NV	<10	NV	12	NV	13

Notes

NV = No Value

ND = Non- Detectable

F4-6, F4-7, F4-8(Soil): The Terms of Reference (Terms of Reference, Annex A, Table 3) called for sampling at locations F4-9 and F4-10. These locations did not match the sample locations illustrated in the Terms of Reference Annex A, Figure 4.5 - Airstrip Landfill. Samples were gathered in locations as described in the Terms of Reference Annex A, Figure 4.5 - Airstrip Landfill (F4 6, F4-7, F4-8, F4-25).

F4-25(Soil)40-50cm: The subsurface soil sample could not be collected in 2006 from station F4-25 due to excessive water at the bottom of the hole.

Table 7-4: Summary of 2006/2007 Soil Analytical Data - Airstrip Landfill

Sample #	Location	Depth (cm)	As [mg/kg]		Hg [mg/kg]		PCBs [mg/kg]		F1 C_6-C_{10} [mg/kg]		F2 C_{10}-C_{16} [mg/kg]		F3 C_{16}-C_{34} [mg/kg]		TPH C_6-C_{34} [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
AIRSTRIP LANDFILL UPGRADIENT																
F4-8(Soil)0-15cm	F4-8	0-15	9.4	48.1	<0.04	<0.04	<0.1	0.1	<12	<11	20	<20	<10	32	20	32
F4-8(Soil)40-50cm	F4-8	40-50	5.4	13.8	<0.04	<0.04	<0.1	<0.1	<12	<10	20	<20	<10	<20	20	ND
F4-6(Soil) 0-15cm	F4-6	0-15	8.3	6.6	<0.04	<0.04	<0.1	<0.1	<12	<11	10	<20	<10	<20	10	ND
F4-6(Soil)40-50cm	F4-6	40-50	28.6	7.1	<0.04	<0.04	<0.1	<0.1	<12	<11	<10	<20	<10	<20	<12	ND
AIRSTRIP LANDFILL DOWNGRADIENT																
F4-7(Soil)0-15cm	F4-7	0-15	13.3	6.5	<0.04	<0.04	<0.1	<0.1	<12	<11	40	<20	<10	<20	40	ND
F4-7(Soil)40-50cm	F4-7	40-50	18.6	10.5	<0.04	<0.04	<0.1	<0.1	<12	<12	30	<20	<10	<20	30	ND
F4-25(Soil)0-15cm	F4-25	0-15	5.8	38.3	<0.04	<0.04	<0.1	<0.1	<12	<10	<10	<20	10	<20	10	ND
F4-25(Soil)40-50cm	F4-25	40-50	NV	6.6	NV	<0.04	NV	<0.1	NV	<11	NV	<20	NV	<20	NV	ND

Notes

NV = No Value

ND = Non- Detectable

F4-6, F4-7, F4-8(Soil): The Terms of Reference (Terms of Reference, Annex A, Table 3) called for sampling at locations F4-9 and F4-10. These locations did not match the sample locations illustrated in the Terms of Reference Annex A, Figure 4.5 - Airstrip Landfill. Samples were gathered in locations as described in the Terms of Reference Annex A, Figure 4.5 - Airstrip Landfill (F4 6, F4-7, F4-8, F4-25).

F4-25(Soil)40-50cm: The subsurface soil sample could not be collected in 2006 from station F4-25 due to excessive water at the bottom of the hole.

7.8 Groundwater Sample Analytical Data

There are no monitoring wells in the Airstrip Landfill Area.

7.9 Monitoring Well Sampling Logs

There are no monitoring wells in the Airstrip Landfill Area.

8.0 TANNER BAY LANDFILL

8.1 Summary

The Tanner Bay Landfill is located at the original beach landing area for the site, along Tanner Bay. It has a surface area of approximately 400 m^2.

The monitoring of this landfill includes visual inspection to verify for evidence of settlement or erosion and collection of soil samples to monitor for the presence of leachate. Soil sample locations are identified in Figure 13 FOX-4 Cape Hooper – Tanner Bay Landfill. The soil analytical data is presented in Table 8-6. Soil samples were collected from surface and subsurface at all stations. There are no monitoring wells in this area.

The visual inspection report is presented in the following pages.

8.2 Visual Inspection Report

The visual inspection of the Tanner Bay Landfill was conducted on August 25, 2006. The observed capping material over the landfill grades from a sandy gravel to a gravelly sand material with trace cobbles.

Settlement

Indications of settlement were not observed.

Erosion

Minor erosion of the capping layer surface was noted. The erosion was located on the landfill side slope and not on the top of the landfill capping layer.

Frost Action

No frost action was observed in this area.

Evidence of Burrowing Animals

Indications of burrowing animals were not noted in the landfill however arctic hares and foxes were observed in the area.

Re-establishment of Vegetation

Re-establishment of vegetation was not noted.

Staining

The stained areas are visible adjacent to the northwest of the landfill and appear to have increased in area since the 2006 visual inspection. The staining is reddish and grey with an occasional associated sheen.

Seepage Points

Seepage is emerging from the North West portion of the landfill and is discharging to an area of mature vegetation. Discoloration of the vegetation is occurring. Seepage is associated with reddish and grey brown staining.

Debris

Exposed debris was noted at one location within the landfill. Two areas of debris outside of the landfill area were photographed and presented on the drawing as a means to confirm that the debris is unrelated to the landfill activities.

Discussion

The Tanner Bay Landfill performance with respect to containment of the debris within the landfill is rated as acceptable.

Table 8-1: Visual Inspection Checklist – Inspection Report – Tanner Bay Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING

VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: **TANNER BAY LANDFILL**
LANDFILL DESIGNATION:
DATE OF INSPECTION: August 24, 2007
DATE OF PREVIOUS INSPECTION: August 25, 2006
INSPECTED BY: Richard Wells, Adamie Onalik
REPORT PREPARED BY: Richard Wells, Ryan Fletcher and Stephen Livingstone
The inspector/reporter represents to the best of their knowledge, the following statements and observations are true and correct and to the best of the preparer's actual knowledge, no material facts have been suppressed or misstated.

VISUAL INSPECTION CHECKLIST - INSPECTION REPORT – PAGE 2 OF 2

Checklist Item	Present Yes/No	Location (Describe relative to existing monuments/features and relative to landfill design i.e. surface, berms, toe)	Length	Width	Depth	Extent relative to Area of Landfill (%)	Description	Photographic Records Focal length, location, view point & direction (relative to magnetic north) Feature of note Scale	Additional Comments
Settlement	NO								
Erosion	YES	Minor Surface erosion is starting to expose the top of a barrel. This is a singular case of minor debris exposure. UTM coordinates indicate the drum may be outside of landfill area but landfill outline is assumed to represent top of slope and the drum may is located on the landfill side slope. For locations refer to Figure Fox -13 Cape Hooper-Tanner Bay	0.1 m	0.1 m	0.1 m	<1%		Photographs: 8L7, 8M7 For locations and directions of photographs refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay	
Frost Action	NO	Frost action was not noted. The visible materials appeared to be coarse grained or granular materials and frost susceptibility was assumed to be low.							
Sloughing and Cracking									
Animal Burrows	NO								
Vegetation	NO	No vegetation was observed on top of the landfill however vegetation in close proximity to landfill appears to be well developed.					Lichen and Moss		
Staining	YES	ST8-1/2 For locations refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay	36 m	4 m		12%	Staining was noted	Photographs: 8C7, 8D7, 8E7, 8F7, 8G7, 8H7, 8I7, 8J7, 8K7, 8L7, 8M7. For locations and directions of photographs refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay	
Vegetation Stress	NO	No vegetation stress was observed in the vegetation adjacent to the landfill.					Slight Discoloration	Photographs: 8C7, 8D7, 8J7, 8K7, 8L7, 8M7 For locations and directions of photographs refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay	
Seepage Points	YES	Seepage points coincide with stain location ST8-1/2					Where there was staining there was an associated seepage point.	Photographs: 8C7, 8D7, 8E7, 8F7, 8G7, 8H7, 8I7, 8J7, 8K7, 8L7, 8M7. For locations and directions of photographs refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay	
Debris Exposed	YES (but might be located outside of landfill area)						Miscellaneous debris, cans, top of drum, glass from light bulbs small pieces of wire	Photographs: 8A7, 8B7, For locations and directions of photographs refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay	
Presence/Condition – Monitoring Instruments	YES	For locations refer to Figure 13 Fox -4 Cape Hooper-Tanner Bay							
Features of Note.	NO	Access road to the Tanner Bay landfill					Cross ditching has not been installed at locations where natural watercourses intersect the access road.		Progressive wash out of the road is occurring and may limit access to foot traffic only.

8.3 Preliminary Stability Assessment

The Preliminary Stability Assessment for the Tanner Bay Landfill has been completed as per the Terms of Reference and is included as Tables 8-2 of this report.

Table 8-2: Preliminary Stability Assessment – Tanner Bay Landfill

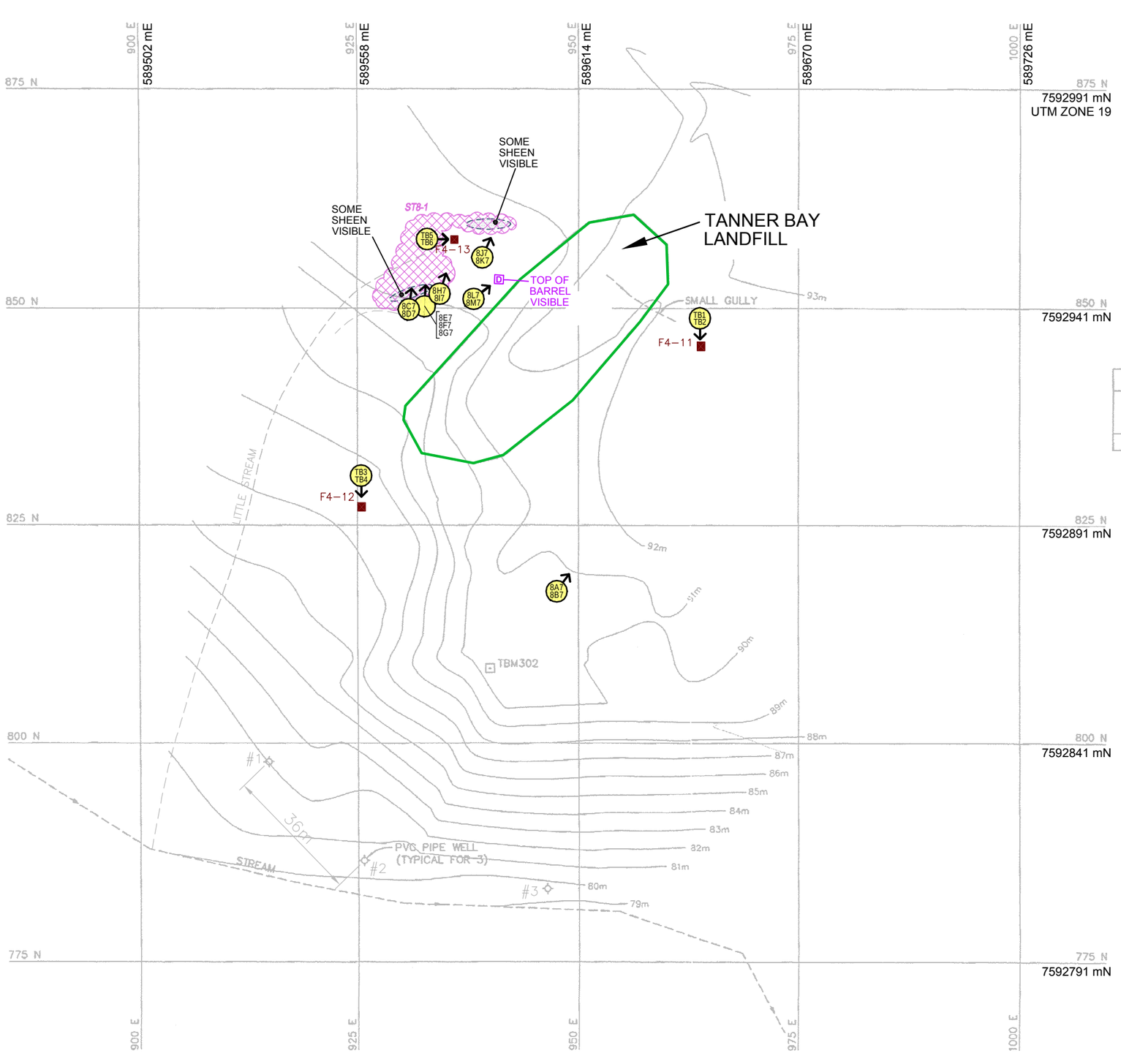
Feature	Severity Rating	Extent
Settlement	Not Observed	None
Erosion	Acceptable	Occasional
Frost Action	Not Observed	None
Staining	Acceptable	Occasional
Vegetation Stress	Acceptable	Occasional
Seepage / Ponded Water	Acceptable	Occasional
Debris Exposure	Acceptable	Isolated
Overall Landfill Performance	**Acceptable**	

Performance / Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears to be deteriorating with time. Observations may include an increase in size or number of features of note, such as differential settlement, erosion or cracking. No significant impact on landfill stability to date, but potential for failure is assessed as low or moderate.
Significant	Significant or potentially significant changes affecting landfill stability, such as significant changes in slope geometry, significant erosion or differential settlement; scarp development. The potential for failure is assessed as imminent.
Unacceptable	Stability of landfill is compromised to the extent that ability to contain waste materials is compromised. Examples may include: • Debris exposed in erosion channels or areas of differential settlement. • Liner exposed. • Slope failure.

Extent	Description
Isolated	Singular feature
Occasional	Features of note occurring at irregular intervals/locations
Numerous	Many features of note, impacted less than 50% of the surface area of the landfill
Extensive	Impacting greater than 50% of the surface area of the landfill

8.4 Location Plan

The Location Plan for the Tanner Bay Landfill has been completed as per the Terms of Reference and is included in the following page as Figure 13 FOX-4 Cape Hooper – Tanner Bay Landfill. The location plan gridlines are believed to be incorrectly labeled as 25 m increments. The UTM coordinates have been labeled to indicate the scale measured in the field, however for the sake of maintaining consistency with respect to past references, the original coordinate labels were also retained.



LEGEND: NOTE: FEATURES IN GREY PREDATE THE 2005 FIELD SEASON

- TBM302 — TEMPORARY BENCHMARK
- SOIL SAMPLE
- LANDFILL BOUNDARY (APPROXIMATE)

2007 OBSERVATIONS:

- ST8-1 — STAINS
- D — DEBRIS
- EROSION
- POOLING
- SINKHOLE
- 8A7 8B7 — PHOTOGRAPH LOCATION (INDICATING PHOTO NUMBER, LOCATION, VIEWING DIRECTION)

TEMPORARY BENCHMARKS

NO.	COORDINATES		ELEV.	DESCRIPTION
	NORTHING	EASTING		
302	808.603	939.857	90.944	19mm DIA. PIPE/STONE CAIRN

Title: FOX-4 CAPE HOOPER - TANNER BAY LANDFILL

Project: FOX-4 CAPE HOOPER DEW LINE CLEAN UP LANDFILL MONITORING PLAN

Date: NOVEMBER 2007

Client: DEFENCE CONSTRUCTION CANADA

SCALE 1:1000

20 15 10 5 0 25 50 metres

FIGURE 13

Projects\2007\1213-0701 FOX-4 Cape Hooper 2007\Figures\Fox4-6-TannerBayLandfill.dwg

8.5 Photographic Records

The Photographic Record for the Tanner Bay Landfill has been completed as per the Terms of Reference and is included in the following page as Table 8-3. The Photographic Record only contains an index and “thumbnail” photographs; full sized photographs are contained in the Addendum CD-ROM.

Table 8-3 Photographic Record - Tanner Bay Landfill

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
8A7	8A7.jpg 2007-08-23	Close up view of metal debris observed at 589608E/7592873N. Camera facing North-East.		Figure 13
8B7	8A7.jpg 2007-08-23	Wide angle view of metal debris. The white card is 21cm by 28cm and located at 589608E/7592873N. Camera facing North-East.		Figure 13
8C7	8C7.jpg 2007-08-23	Pooling, soil staining, and seepage observed at 589572E/7592941N. Some sheen on water visible Camera facing North.		Figure 13
8D7	8D7.jpg 2007-08-23	Close up view of pooling, soil staining and sheen on water observed at 589572E/7592941N. Camera facing North.		Figure 13
8E7	8E7.jpg 2007-08-23	Some sheen on standing water and reddish soil staining observed at 589576E/7592943N. Camera facing North.		Figure 13
8F7	8F7.jpg 2007-08-23	Wide angle view of seepage and pooling. Some sheen on water is visible. The white card is 21cm by 28cm and located at 589576E/7592943N. Camera facing North		Figure 13
8G7	8G7.jpg 2007-08-23	Close up view of sheen on standing water and reddish staining observed at 589576E/7592943N. Camera facing North.		Figure 13
8H7	8H7.jpg 2007-08-23	Close up view of standing water and reddish soil staining observed at 589581E/7592950N. Camera facing North-East.		Figure 13
8I7	8I7.jpg 2007-08-23	Wide angle view of standing water and reddish soil staining. The white card is 21cm by 28cm and located at 589581E/7592950N. North West slope of Tanner Bay Landfill in background. Camera facing North-East.		Figure 13
8J7	8J7.jpg 2007-08-23	Standing water and reddish soil staining observed at 589590E/7592955N. Some sheen is visible on water. Camera facing North-East.		Figure 13
8K7	8K7.jpg 2007-08-23	Wide angle view of standing water and soil staining. White card is located at 589590E/7592955N. Camera facing North-East.		Figure 13
8L7	8L7.jpg 2007-08-23	Close up view showing top of barrel at 589589E/7592943N. Camera facing North-East.		Figure 13
8M7	8M7.jpg 2007-08-23	North West corner of Tanner Bay Landfill. Wide angle view of top of barrel located at 589589E/7592943N. White card is 21cm by 28cm. Camera facing North-East.		Figure 13

Photo	Electronic File Name Date	Photo Description	Thumbnail	Reference Figure Number
TB-1	TB-1.jpg 11/06/2007	Soil sampling at F4-11 – showing hole to depth of 50 cm.		Figure 13
TB-2	TB-2.jpg 11/06/2007	Showing soils sampling location F4-11 – facing south.		Figure 13
TB-3	TB-3.jpg 11/06/2007	Soil sampling at F4-12 – showing hole to depth of 50 cm.		Figure 13
TB-4	TB-4.jpg 11/06/2007	Showing soils sampling location F4-12 – facing south.		Figure 13
TB-5	TB-5.jpg 11/06/2007	Soil sampling at F4-13 – showing hole to depth of 50 cm.		Figure 13
TB-6	TB-6.jpg 11/06/2007	Showing soils sampling location F4-13 – facing east.		Figure 13

8.6 Thermal Monitoring Data

Not applicable to this landfill area.

8.7 Soil Sample Analytical Data

The concentrations of Cd, Pb and Hg are below detection limits, while the concentrations of the other metals are generally low. In general, the concentrations Cu, Ni, Co, Zn, Cr and As from downgradient soil samples are comparable to the upgradient soil samples for both depths.

The concentrations of PCBs are below detection limits in the soil samples (both depths) collected from all the locations.

The surface soil at F4-11 contains a fairly high concentration of TPH (1440 mg/kg). The high TPH concentration is attributed to higher concentrations of F2 and F3 fractions, while F1 was non-detect. The TPH concentrations in the remaining soil samples are below detection limit or at low concentrations (23 mg/kg – subsurface F4-11).

The soil sample analytical data is included in the following page as Table 8-4.

Table 8-4: Summary of 2006/2007 Soil Analytical Data - Tanner Bay Landfill

Sample #	Location	Depth (cm)	Cu [mg/kg]		Ni [mg/kg]		Co [mg/kg]		Cd [mg/kg]		Pb [mg/kg]		Zn [mg/kg]		Cr [mg/kg]		As [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
UPGRADIENT																		
F4-12(Soil)0-15cm	F4-12	0-15	3	4	3	5	1	2	< 1	<0.9	<10	<10	7	10	12	13	0.7	<0.7
F4-12(Soil)40-50cm	F4-12	40-50	14	6	9	4	2	1	< 1	<0.9	<10	<10	13	11	13	12	0.9	<0.7
DOWNGRADIENT																		
F4-11(Soil)0-15cm	F4-11	0-15	10	5	10	5	3	1	< 1	<0.9	<10	<10	17	11	18	13	1.1	1.1
F4-11(Soil)40-50cm	F4-11	40-50	9	7	8	5	3	1	< 1	<0.9	<10	<10	14	10	18	9	0.7	0.8
F4-13(Soil)0-15cm	F4-13	0-15	7	6	5	7	2	2	<1	<0.9	<10	<10	9	17	13	11	0.9	<0.7
F4-13(Soil)40-50cm	F4-13	40-50	5	6	4	5	1	2	<1	<0.9	<10	<10	6	10	10	9	0.8	0.8

Notes

NV = No Value

ND = Non-Dectectable

Table 8-4: Summary of 2006/2007 Soil Analytical Data - Tanner Bay Landfill

Sample #	Location	Depth (cm)	Hg [mg/kg]		PCBs [mg/kg]		F1 C_6-C_{10} [mg/kg]		F2 C_{10}-C_{16} [mg/kg]		F3 C_{16}-C_{34} [mg/kg]		TPH C_6-C_{34} [mg/kg]	
	Sampling Date		*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*	*Aug-06*	*Aug-07*
UPGRADIENT														
F4-12(Soil)0-15cm	F4-12	0-15	<0.04	<0.04	<0.1	<0.1	<12	<11	<10	<20	130	<20	130	ND
F4-12(Soil)40-50cm	F4-12	40-50	<0.04	<0.04	<0.1	<0.1	<12	<11	20	<20	<10	<20	20	ND
DOWNGRADIENT														
F4-11(Soil)0-15cm	F4-11	0-15	<0.04	<0.04	<0.1	<0.1	<12	<12	10	657	<10	778	10	1435
F4-11(Soil)40-50cm	F4-11	40-50	<0.04	<0.04	<0.1	<0.1	<12	<11	<10	<20	<10	23	<10	23
F4-13(Soil)0-15cm	F4-13	0-15	<0.04	<0.04	<0.1	<0.1	<12	<12	10	<20	130	<20	140	ND
F4-13(Soil)40-50cm	F4-13	40-50	<0.04	<0.04	<0.1	<0.1	<12	<12	20	<20	<10	<20	20	ND

Notes

NV = No Value

ND = Non-Dectectable

8.8 Groundwater Sample Analytical Data

There are no monitoring wells in the Tanner Bay Landfill area.

8.9 Monitoring Well Sampling Logs

There are no monitoring wells in the Tanner Bay Landfill area.

ANNEX 1

CERTIFICATES OF ANALYSIS

ANNEX 1-A SOIL AND GROUNDWATER RESULTS - BODYCOTE

Certificate of Analysis

Request number:	**07-282515**
Date Received:	2007-08-28
Date Certificate Issued:	2007-09-06
Certificate Version:	1

☑ Official Certificate of Analysis

☐ Preliminary Certificate of Analysis

Client

NUNATTA ENVIRONMENTAL SERVICES

PO BOX 267
IQALUIT, Nunavut, Canada
X0A 0H0

P.O. Number	Your project ID.	Project Manager
NA	NA	Alain Carrière

Comments

The criteria from the "Politique de protection des sols et de réhabilitation des terrains contaminés" included in this certificate are for information only.
The A criteria for all metals correspond to those of the "Basses-Terres du St-Laurent" region.
The D criteria correspond to the "Règlement sur l'enfouissement des sols contaminés". These criteria are included in this certificate for information only.

This version replaces and cancels all earlier version.

ND : Not detected

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347607**	**1347608**	**1347635**	**1347636**
	Your Reference	QA/QC-1	QA/QC-2 MW-1	MW-2	
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-23	2007-08-23
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Arsenic	mg/L	0.004	0.003	0.002	0.018
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Cadmium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Chromium	mg/L	0.092	0.011	0.005	0.005
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Cobalt	mg/L	< 0.001	0.001	0.010	0.017
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Copper	mg/L	0.006	0.007	0.002	0.009
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Lead	mg/L	0.008	0.004	0.003	0.001
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
12-41-99 (REF: S.M. 3500-Hg, B)	Sequential No.	133724	133724	133724	133724
Mercury	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347607**	**1347608**	**1347635**	**1347636**
	Your Reference	QA/QC-1	QA/QC-2 MW-1	MW-2	
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-23	2007-08-23
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Nickel	mg/L	0.023	0.012	0.036	0.009
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Zinc	mg/L	0.42	0.16	0.39	0.08

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347637**	**1347638**	**1347639**	**1347640**
	Your Reference	MW-5 MW-7	MW-8		MW-10
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-23	2007-08-23	2007-08-23	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Arsenic	mg/L	0.001	0.002	0.005	0.004
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Cadmium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Chromium	mg/L	0.005	0.011	0.004	0.099
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Cobalt	mg/L	0.004	0.022	0.013	0.001
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Copper	mg/L	0.005	0.015	0.007	0.006
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Lead	mg/L	0.002	0.004	< 0.001	0.008
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
12-41-99 (REF: S.M. 3500-Hg, B)	Sequential No.	133724	133724	133724	133724
Mercury	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347637**	**1347638**	**1347639**	**1347640**
	Your Reference	MW-5 MW-7	MW-8		MW-10
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-23	2007-08-23	2007-08-23	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133732	133732	133732	133732
Nickel	mg/L	0.013	0.082	0.014	0.024
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133732	133732	133732	133732
Zinc	mg/L	0.18	0.28	1.06	0.46

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347641**	**1347642**	**1347643**	**1347644**
	Your Reference	MW-12	MW-13	MW-14	MW-15
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Arsenic	mg/L	0.009	0.004	0.004	0.002
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Cadmium	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Chromium	mg/L	0.006	0.003	0.060	0.008
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Cobalt	mg/L	0.008	0.004	0.015	0.001
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Copper	mg/L	0.019	0.005	0.008	0.007
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Sequential No.	133732	133732	133732	133732
Lead	mg/L	0.007	0.004	0.011	0.003
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
12-41-99 (REF: S.M. 3500-Hg, B)	Sequential No.	133724	133724	133724	133724
Mercury	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347641**	**1347642**	**1347643**	**1347644**
	Your Reference	MW-12	MW-13	MW-14	MW-15
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133732	133732	133732	133732
Nickel	mg/L	0.016	0.017	0.053	0.011
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133732	133732	133732	133732
Zinc	mg/L	2.09	1.28	0.17	0.15

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)
	Lab. No.	**1347645**
	Your Reference	MW-16
	Matrix	Groundwater
	Sampled by	R. FLETCHER
	Site sampled	NA
	Date sampled	2007-08-24
	Date received	2007-08-28

Parameter(s) Method Reference		
Arsenic (As)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Arsenic	mg/L	0.002
Cadmium (Cd)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Cadmium	mg/L	< 0.001
Chromium (Cr)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Chromium	mg/L	0.004
Cobalt (Co)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Cobalt	mg/L	0.003
Copper (Cu)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Copper	mg/L	0.002
Lead (Pb)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Lead	mg/L	0.002
Mercury (cold vapor)	Preparation	2007-08-29
Mercury (cold vapour) 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-29
	Sequential No.	133747
Mercury	mg/L	< 0.0001

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)
	Lab. No.	**1347645**
	Your Reference	MW-16
	Matrix	Groundwater
	Sampled by	R. FLETCHER
	Site sampled	NA
	Date sampled	2007-08-24
	Date received	2007-08-28

Parameter(s) Method Reference		
Nickel (Ni)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Nickel	mg/L	0.016
Zinc (Zn)	Preparation	2007-08-29
Metals by ICP-MS PON-12-072-98 (REF: MA. 200 - Mét 1.1, CEAEQ)	Analysis	2007-08-29
	Sequential No.	133732
Zinc	mg/L	0.04

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347599**	**1347600**	**1347601**	**1347602**
	Your Reference	QA/QC-1	QA/QC-2	QA/QC-3	QA/QC-4
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Arsenic	mg/kg	13.2 (A-B)	9.7 (A-B)	10.3 (A-B)	5.4 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Chromium	mg/kg	33 (<A)	25 (<A)	29 (<A)	18 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Cobalt	mg/kg	5 (<A)	3 (<A)	6 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Copper	mg/kg	30 (<A)	14 (<A)	25 (<A)	12 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133783	133783	133783	133783
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347599**	**1347600**	**1347601**	**1347602**
	Your Reference	QA/QC-1	QA/QC-2	QA/QC-3	QA/QC-4
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	9.9	6.1	9.1	5.5
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Nickel	mg/kg	21 (<A)	10 (<A)	21 (<A)	8 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133811	133813	133813
Zinc	mg/kg	31 (<A)	24 (<A)	30 (<A)	18 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347603**	**1347604**	**1347605**	**1347610**
	Your Reference	QA/QC-5	QA/QC-6	QA/QC-7	F4-6 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Arsenic	mg/kg	18.6 (A-B)	6.0 (A)	7.2 (A-B)	6.6 (A-B)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Chromium	mg/kg	20 (<A)	16 (<A)	17 (<A)	17 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Cobalt	mg/kg	3 (<A)	2 (<A)	2 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Copper	mg/kg	17 (<A)	6 (<A)	11 (<A)	9 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133783	133783	133783	133783
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347603**	**1347604**	**1347605**	**1347610**
	Your Reference	QA/QC-5	QA/QC-6	QA/QC-7	F4-6 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	9.5	8.1	4.9	5.6
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Nickel	mg/kg	11 (<A)	6 (<A)	8 (<A)	7 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133811	133813	133813	133813
Zinc	mg/kg	23 (<A)	16 (<A)	22 (<A)	14 (<A)

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347611**	**1347612**	**1347613**	**1347614**
	Your Reference	F4-6 (soil) 40-50cm	F4-7 (soil) 0-15cm	F4-7 (soil) 40-50cm	F4-8 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Arsenic	mg/kg	7.1 (A-B)	6.5 (A-B)	10.5 (A-B)	48.1 (B-C)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Chromium	mg/kg	14 (<A)	14 (<A)	17 (<A)	46 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Cobalt	mg/kg	2 (<A)	2 (<A)	2 (<A)	6 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Copper	mg/kg	10 (<A)	8 (<A)	10 (<A)	48 (A-B)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	24 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133783	133783	133783	133783
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347611**	**1347612**	**1347613**	**1347614**
	Your Reference	F4-6 (soil) 40-50cm	F4-7 (soil) 0-15cm	F4-7 (soil) 40-50cm	F4-8 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	6.3	10.2	15.6	14.3
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Nickel	mg/kg	7 (<A)	5 (<A)	6 (<A)	26 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133811	133838
Zinc	mg/kg	14 (<A)	14 (<A)	14 (<A)	55 (<A)

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347615**	**1347616**	**1347617**	**1347618**
	Your Reference	F4-8 (soil) 40-50cm	F4-25 (soil) 0-15cm	F4-25 (soil) 40-50cm	MW-16 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Arsenic	mg/kg	13.8 (A-B)	38.3 (B-C)	6.6 (A-B)	2.4 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Chromium	mg/kg	27 (<A)	13 (<A)	13 (<A)	13 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Cobalt	mg/kg	6 (<A)	2 (<A)	1 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Copper	mg/kg	19 (<A)	12 (<A)	6 (<A)	5 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133783	133783	133783	133784
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347615**	**1347616**	**1347617**	**1347618**
	Your Reference	F4-8 (soil) 40-50cm	F4-25 (soil) 0-15cm	F4-25 (soil) 40-50cm	MW-16 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	4.4	3.8	4.8	12.6
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Nickel	mg/kg	18 (<A)	4 (<A)	4 (<A)	5 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133813	133813	133838
Zinc	mg/kg	29 (<A)	13 (<A)	12 (<A)	11 (<A)

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347619**	**1347620**	**1347621**	**1347622**
	Your Reference	F4-11 (soil) 0-15cm	F4-11 (soil) 40-50cm	F4-12 (soil) 0-15cm	F4-12 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Arsenic	mg/kg	1.1 (<A)	0.8 (<A)	< 0.7 (<A)	0.7 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Chromium	mg/kg	13 (<A)	9 (<A)	13 (<A)	12 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Cobalt	mg/kg	1 (<A)	1 (<A)	2 (<A)	1 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Copper	mg/kg	5 (<A)	7 (<A)	4 (<A)	6 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133784	133784	133784	133784
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347619**	**1347620**	**1347621**	**1347622**
	Your Reference	F4-11 (soil) 0-15cm	F4-11 (soil) 40-50cm	F4-12 (soil) 0-15cm	F4-12 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	15.2	12.5	7.0	4.9
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Nickel	mg/kg	5 (<A)	5 (<A)	5 (<A)	4 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Zinc	mg/kg	11 (<A)	10 (<A)	10 (<A)	11 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347623**	**1347624**	**1347625**	**1347626**
	Your Reference	F4-13 (soil) 0-15cm	F4-13 (soil) 40-50cm	MW-13 (soil) 0-15cm	MW-13 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Arsenic	mg/kg	< 0.7 (<A)	0.8 (<A)	5.4 (<A)	5.0 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Chromium	mg/kg	11 (<A)	9 (<A)	18 (<A)	17 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Cobalt	mg/kg	2 (<A)	2 (<A)	2 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Copper	mg/kg	6 (<A)	6 (<A)	8 (<A)	8 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133784	133784	133784	133784
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347623**	**1347624**	**1347625**	**1347626**
	Your Reference	F4-13 (soil) 0-15cm	F4-13 (soil) 40-50cm	MW-13 (soil) 0-15cm	MW-13 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	16.3	13.8	13.0	13.0
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Nickel	mg/kg	7 (<A)	5 (<A)	8 (<A)	7 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133838
Zinc	mg/kg	17 (<A)	10 (<A)	17 (<A)	16 (<A)

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347627**	**1347628**	**1347629**	**1347647**
	Your Reference	MW-14 (soil) 0-15cm	MW-14 (soil) 40-50cm	MW-16 (soil) 0-15cm	MW-6 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Arsenic	mg/kg	5.9 (<A)	9.2 (A-B)	13.8 (A-B)	2.4 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Chromium	mg/kg	19 (<A)	18 (<A)	12 (<A)	5 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Cobalt	mg/kg	2 (<A)	2 (<A)	2 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Copper	mg/kg	10 (<A)	10 (<A)	5 (<A)	5 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133784	133784	133784	133784
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347627**	**1347628**	**1347629**	**1347647**
	Your Reference	MW-14 (soil) 0-15cm	MW-14 (soil) 40-50cm	MW-16 (soil) 0-15cm	MW-6 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	8.1	10.8	7.7	5.9
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Nickel	mg/kg	8 (<A)	8 (<A)	6 (<A)	9 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133838	133838	133838	133813
Zinc	mg/kg	20 (<A)	19 (<A)	11 (<A)	10 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347648**	**1347649**	**1347650**	**1347651**
	Your Reference	MW-7 (soil) 0-15cm	MW-7 (soil) 40-50cm	MW-8 (soil) 0-15cm	MW-8 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Arsenic	mg/kg	< 0.7 (<A)	40.6 (B-C)	20.1 (A-B)	4.0 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Chromium	mg/kg	3 (<A)	33 (<A)	41 (<A)	5 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Cobalt	mg/kg	2 (<A)	4 (<A)	2 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Copper	mg/kg	5 (<A)	19 (<A)	66 (A-B)	9 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-29	2007-08-29	2007-08-30	2007-08-30
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133784	133784	133861	133861
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347648**	**1347649**	**1347650**	**1347651**
	Your Reference	MW-7 (soil) 0-15cm	MW-7 (soil) 40-50cm	MW-8 (soil) 0-15cm	MW-8 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133864	133864	133864	133864
Moisture	%	8.6	8.9	8.1	6.9
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Nickel	mg/kg	4 (<A)	15 (<A)	10 (<A)	8 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133813	133838	133813	133848
Zinc	mg/kg	10 (<A)	26 (<A)	60 (<A)	6 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347652**	**1347653**	**1347654**	**1347655**
	Your Reference	MW-9 (soil) 0-15cm	MW-9 (soil) 40-50cm	F4-1 (soil) 0-15cm	F4-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Arsenic	mg/kg	10.5 (A-B)	23.7 (A-B)	11.0 (A-B)	8.5 (A-B)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Chromium	mg/kg	20 (<A)	32 (<A)	27 (<A)	26 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Cobalt	mg/kg	3 (<A)	4 (<A)	5 (<A)	4 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Copper	mg/kg	12 (<A)	15 (<A)	19 (<A)	15 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133861	133861	133861	133861
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347652**	**1347653**	**1347654**	**1347655**
	Your Reference	MW-9 (soil) 0-15cm	MW-9 (soil) 40-50cm	F4-1 (soil) 0-15cm	F4-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	8.1	4.9	11.0	9.9
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Nickel	mg/kg	10 (<A)	11 (<A)	19 (<A)	16 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133836
Zinc	mg/kg	23 (<A)	29 (<A)	28 (<A)	24 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347656**	**1347657**	**1347658**	**1347659**
	Your Reference	F4-2 (soil) 0-15cm	F4-2 (soil) 40-50cm	MW-1 (soil) 0-15cm	MW-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Arsenic	mg/kg	12.0 (A-B)	15.0 (A-B)	50.7 (C-D)	7.8 (A-B)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Chromium	mg/kg	23 (<A)	30 (<A)	29 (<A)	23 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Cobalt	mg/kg	3 (<A)	4 (<A)	4 (<A)	3 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Copper	mg/kg	12 (<A)	16 (<A)	13 (<A)	10 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Lead	mg/kg	< 10 (<A)	30 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133861	133861	133861	133862
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347656**	**1347657**	**1347658**	**1347659**
	Your Reference	F4-2 (soil) 0-15cm	F4-2 (soil) 40-50cm	MW-1 (soil) 0-15cm	MW-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	7.4	6.7	7.1	11.3
Nickel (Ni)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Nickel	mg/kg	10 (<A)	14 (<A)	13 (<A)	9 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-30	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133855	133836	133836
Zinc	mg/kg	23 (<A)	27 (<A)	62 (<A)	32 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347660**	**1347661**	**1347662**	**1347663**
	Your Reference	MW-2 (soil) 0-15cm	MW-2 (soil) 40-50cm	MW-3 (soil) 0-15cm	MW-3 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Arsenic	mg/kg	21.2 (A-B)	8.2 (A-B)	9.9 (A-B)	10.9 (A-B)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Chromium	mg/kg	25 (<A)	24 (<A)	21 (<A)	15 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Cobalt	mg/kg	3 (<A)	3 (<A)	3 (<A)	3 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Copper	mg/kg	11 (<A)	13 (<A)	13 (<A)	11 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133862	133862	133862	133862
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347660**	**1347661**	**1347662**	**1347663**
	Your Reference	MW-2 (soil) 0-15cm	MW-2 (soil) 40-50cm	MW-3 (soil) 0-15cm	MW-3 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	10.0	8.0	8.1	4.3
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Nickel	mg/kg	10 (<A)	12 (<A)	10 (<A)	9 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-30
	Sequential No.	133836	133836	133836	133836
Zinc	mg/kg	24 (<A)	24 (<A)	22 (<A)	17 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347664**	**1347665**	**1347666**	**1347667**
	Your Reference	MW-4 (soil) 0-15cm	MW-4 (soil) 40-50cm	MW-5 (soil) 0-15cm	MW-5 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Arsenic	mg/kg	14.0 (A-B)	13.5 (A-B)	12.6 (A-B)	29.8 (A-B)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Chromium	mg/kg	20 (<A)	31 (<A)	25 (<A)	51 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Cobalt	mg/kg	3 (<A)	4 (<A)	3 (<A)	3 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Copper	mg/kg	13 (<A)	21 (<A)	14 (<A)	31 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Lead	mg/kg	< 10 (<A)	11 (<A)	< 10 (<A)	11 (<A)
Mercury (cold vapor)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133862	133862	133862	133862
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347664**	**1347665**	**1347666**	**1347667**
	Your Reference	MW-4 (soil) 0-15cm	MW-4 (soil) 40-50cm	MW-5 (soil) 0-15cm	MW-5 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	8.2	6.6	7.0	7.5
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Nickel	mg/kg	9 (<A)	13 (<A)	10 (<A)	11 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-29	2007-08-29
	Sequential No.	133836	133836	133836	133848
Zinc	mg/kg	35 (<A)	49 (<A)	25 (<A)	40 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347668**	**1347669**	**1347670**	**1347671**
	Your Reference	MW-6 (soil) 0-15cm	MW-11 (soil) 0-15cm	MW-11 (soil) 40-50cm	MW-12 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Arsenic	mg/kg	9.5 (A-B)	6.2 (A-B)	4.6 (<A)	5.1 (<A)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Chromium	mg/kg	27 (<A)	16 (<A)	15 (<A)	17 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Cobalt	mg/kg	3 (<A)	2 (<A)	2 (<A)	2 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Copper	mg/kg	12 (<A)	7 (<A)	4 (<A)	9 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133862	133862	133862	133862
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347668**	**1347669**	**1347670**	**1347671**
	Your Reference	MW-6 (soil) 0-15cm	MW-11 (soil) 0-15cm	MW-11 (soil) 40-50cm	MW-12 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	7.3	7.1	12.0	11.9
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Nickel	mg/kg	11 (<A)	7 (<A)	6 (<A)	8 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133838	133848	133848
Zinc	mg/kg	25 (<A)	16 (<A)	15 (<A)	17 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347672**	**1347673**	**1347674**	**1347675**
	Your Reference	MW-12 (soil) 40-50cm	MW-15 (soil) 0-15cm	MW-15 (soil) 40-50cm	MW-10 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Arsenic	mg/kg	7.5 (A-B)	5.8 (<A)	3.5 (<A)	9.4 (A-B)
Cadmium (Cd)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Chromium	mg/kg	18 (<A)	15 (<A)	11 (<A)	18 (<A)
Cobalt (Co)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Cobalt	mg/kg	3 (<A)	2 (<A)	2 (<A)	3 (<A)
Copper (Cu)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Copper	mg/kg	11 (<A)	7 (<A)	5 (<A)	10 (<A)
Lead (Pb)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-30	2007-08-30	2007-08-31	2007-08-31
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-30	2007-08-30	2007-08-31	2007-08-31
	Sequential No.	133862	133862	133993	133993
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347672**	**1347673**	**1347674**	**1347675**
	Your Reference	MW-12 (soil) 40-50cm	MW-15 (soil) 0-15cm	MW-15 (soil) 40-50cm	MW-10 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	10.7	13.3	11.0	6.0
Nickel (Ni)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Nickel	mg/kg	8 (<A)	6 (<A)	5 (<A)	9 (<A)
Zinc (Zn)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133848	133848	133848	133848
Zinc	mg/kg	17 (<A)	14 (<A)	12 (<A)	19 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347676**	**1347680**	**1347681**	**1347682**
	Your Reference	MW-10 (soil) 40-50cm	F4-20 (soil) 40-50cm	F4-21 (soil) 0-15cm	F4-21 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-30	-	-	-
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Arsenic	mg/kg	8.1 (A-B)	-	-	-
Cadmium (Cd)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Cadmium	mg/kg	< 0.9 (<A)	-	-	-
Chromium (Cr)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Chromium	mg/kg	23 (<A)	-	-	-
Cobalt (Co)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Cobalt	mg/kg	4 (<A)	-	-	-
Copper (Cu)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Copper	mg/kg	11 (<A)	-	-	-
Lead (Pb)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Lead	mg/kg	< 10 (<A)	-	-	-
Mercury (cold vapor)	Preparation	2007-08-31	-	-	-
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-31	-	-	-
	Sequential No.	133993	-	-	-
Mercury	mg/kg	< 0.04 (<A)	-	-	-

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347676**	**1347680**	**1347681**	**1347682**
	Your Reference	MW-10 (soil) 40-50cm	F4-20 (soil) 40-50cm	F4-21 (soil) 0-15cm	F4-21 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	7.8	8.3	8.4	7.6
Nickel (Ni)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Nickel	mg/kg	12 (<A)	-	-	-
Zinc (Zn)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Zinc	mg/kg	25 (<A)	-	-	-

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347683**	**1347684**	**1347685**	**1347686**
	Your Reference	F4-22 (soil) 0-15cm	F4-22 (soil) 40-50cm	F4-17 (soil) 0-15cm	F4-17 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	8.8	9.7	8.3	7.3

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347687**	**1347688**	**1347689**	**1347693**
	Your Reference	F4-23 (soil) 0-15cm	F4-24 (soil) 0-15cm	F4-24 (soil) 40-50cm	F4-3 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	-	-	-	2007-08-30
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Arsenic	mg/kg	-	-	-	14.3 (A-B)
Cadmium (Cd)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Cadmium	mg/kg	-	-	-	< 0.9 (<A)
Chromium (Cr)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Chromium	mg/kg	-	-	-	41 (<A)
Cobalt (Co)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Cobalt	mg/kg	-	-	-	7 (<A)
Copper (Cu)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Copper	mg/kg	-	-	-	33 (<A)
Lead (Pb)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Lead	mg/kg	-	-	-	< 10 (<A)
Mercury (cold vapor)	Preparation	-	-	-	2007-08-31
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	-	-	-	2007-08-31
	Sequential No.	-	-	-	133993
Mercury	mg/kg	-	-	-	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347687**	**1347688**	**1347689**	**1347693**
	Your Reference	F4-23 (soil) 0-15cm	F4-24 (soil) 0-15cm	F4-24 (soil) 40-50cm	F4-3 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	14.6	7.1	8.8	8.9
Nickel (Ni)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Nickel	mg/kg	-	-	-	27 (<A)
Zinc (Zn)	Preparation	-	-	-	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	-	-	-	2007-08-30
	Sequential No.	-	-	-	133855
Zinc	mg/kg	-	-	-	38 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347694**	**1347695**	**1347696**	**1347697**
	Your Reference	F4-3 (soil) 40-50cm	F4-4 (soil) 0-15cm	F4-4 (soil) 40-50cm	F4-5 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Arsenic	mg/kg	531 (>D)	14.6 (A-B)	13.4 (A-B)	15.0 (A-B)
Cadmium (Cd)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Cadmium	mg/kg	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)	< 0.9 (<A)
Chromium (Cr)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Chromium	mg/kg	42 (<A)	37 (<A)	37 (<A)	43 (<A)
Cobalt (Co)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Cobalt	mg/kg	11 (<A)	7 (<A)	6 (<A)	6 (<A)
Copper (Cu)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Copper	mg/kg	34 (<A)	28 (<A)	32 (<A)	33 (<A)
Lead (Pb)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Lead	mg/kg	< 10 (<A)	< 10 (<A)	< 10 (<A)	< 10 (<A)
Mercury (cold vapor)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	133993	133993	133994	133994
Mercury	mg/kg	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)	< 0.04 (<A)

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347694**	**1347695**	**1347696**	**1347697**
	Your Reference	F4-3 (soil) 40-50cm	F4-4 (soil) 0-15cm	F4-4 (soil) 40-50cm	F4-5 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	9.0	11.3	11.2	10.6
Nickel (Ni)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Nickel	mg/kg	45 (<A)	26 (<A)	24 (<A)	26 (<A)
Zinc (Zn)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133855	133855	133855	133855
Zinc	mg/kg	37 (<A)	40 (<A)	35 (<A)	36 (<A)

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347698**	**1347702**	**1347703**	**1347704**
	Your Reference	F4-5 (soil) 40-50cm	F4-18 (soil) 0-15cm	F4-18 (soil) 40-50cm	F4-19 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Arsenic (As)	Preparation	2007-08-30	-	-	-
Metals by ICP-MS. Results on dry weight. 12-072-98 (REF: MA. 200 - Mét. 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Arsenic	mg/kg	16.4 (A-B)	-	-	-
Cadmium (Cd)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Cadmium	mg/kg	< 0.9 (<A)	-	-	-
Chromium (Cr)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Chromium	mg/kg	47 (<A)	-	-	-
Cobalt (Co)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Cobalt	mg/kg	7 (<A)	-	-	-
Copper (Cu)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Copper	mg/kg	34 (<A)	-	-	-
Lead (Pb)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Lead	mg/kg	< 10 (<A)	-	-	-
Mercury (cold vapor)	Preparation	2007-08-31	-	-	-
Mercury (cold vapour). Result on dry weight. 12-41-99 (REF: S.M. 3500-Hg, B)	Analysis	2007-08-31	-	-	-
	Sequential No.	133994	-	-	-
Mercury	mg/kg	< 0.04 (<A)	-	-	-

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347698**	**1347702**	**1347703**	**1347704**
	Your Reference	F4-5 (soil) 40-50cm	F4-18 (soil) 0-15cm	F4-18 (soil) 40-50cm	F4-19 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133868	133868	133868	133868
Moisture	%	9.8	14.3	12.9	8.7
Nickel (Ni)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Nickel	mg/kg	27 (<A)	-	-	-
Zinc (Zn)	Preparation	2007-08-30	-	-	-
Metals by ICP. Results on dry weight. 12-031-02 (REF: MA. 200 - Mét 1.1)	Analysis	2007-08-30	-	-	-
	Sequential No.	133855	-	-	-
Zinc	mg/kg	38 (<A)	-	-	-

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)	
	Lab. No.	**1347705**	**1347706**
	Your Reference	F4-19 (soil) 40-50cm	F4-20 (soil) 0-15cm
	Matrix	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA
	Date sampled	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28
Parameter(s) Method Reference			
Moisture (for calculation)	Preparation	2007-08-29	2007-08-29
Moisture (gravimetry) PON-89-01-05, section 5	Analysis	2007-08-30	2007-08-30
	Sequential No.	133868	133868
Moisture	%	10.7	14.9

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NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347607**	**1347608**	**1347635**	**1347636**
	Your Reference	QA/QC-1	QA/QC-2 MW-1	MW-2	
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-23	2007-08-23
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS) PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133932	133932	133932	133932
Benzene	µg/L	< 0.1	< 0.1	< 0.1	0.7
Toluene	µg/L	0.3	0.2	0.3	8.1
Ethylbenzene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes	µg/L	0.8	0.4	0.7	62.2
Recuperation %					
Dibromofluoromethane	%	114%	115%	115%	115%
D8-Toluene	%	101%	102%	102%	101%
1-Bromo-4-fluorobenzene	%	103%	103%	99%	97%
Petroleum Hydrocarbons (C6-C10)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Volatile Organic Compounds (GC-FID) PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134185	134185	134185	134185
Petroleum Hydrocarbons (C6-C10)	µg/L	< 25	< 25	< 25	132
Petroleum Hydrocarons C10@C50 by fraction	Preparation	2007-09-04	2007-09-04	2007-09-04	2007-09-04
C10-C50 petroleum hydrocarbons. PON-13-03-97 (MA.400-C10C50 1.0, CEAEQ)	Analysis	2007-09-05	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134136	134136	134136	134136
Petroleum Hydrocarbons C10-C16	mg/L	< 0.1	< 0.1	< 0.1	0.6
Petroleum Hydrocarbons C16-C34	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Petroleum Hydrocarbons C34-C50	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Petroleum hydrocarbons C10@C50	mg/L	ND	ND	ND	0.6

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347637**	**1347638**	**1347639**	**1347640**
	Your Reference	MW-5 MW-7	MW-8		MW-10
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-23	2007-08-23	2007-08-23	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS) PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133932	133932	133932	133932
Benzene	µg/L	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	µg/L	0.4	< 0.1	0.5	< 0.1
Ethylbenzene	µg/L	< 0.1	< 0.1	0.3	< 0.1
Xylenes	µg/L	0.3	< 0.1	2.1	< 0.1
Recuperation %					
Dibromofluoromethane	%	110%	113%	113%	113%
D8-Toluene	%	102%	101%	101%	100%
1-Bromo-4-fluorobenzene	%	103%	104%	101%	102%
Petroleum Hydrocarbons (C6-C10)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Volatile Organic Compounds (GC-FID) PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134185	134185	134185	134185
Petroleum Hydrocarbons (C6-C10)	µg/L	< 25	< 25	< 25	< 25
Petroleum Hydrocarons C10@C50 by fraction	Preparation	2007-09-04	2007-09-04	2007-09-04	2007-09-04
C10-C50 petroleum hydrocarbons. PON-13-03-97 (MA.400-C10C50 1.0, CEAEQ)	Analysis	2007-09-05	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134136	134136	134136	134136
Petroleum Hydrocarbons C10-C16	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Petroleum Hydrocarbons C16-C34	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Petroleum Hydrocarbons C34-C50	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Petroleum hydrocarbons C10@C50	mg/L	ND	ND	ND	ND

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347641**	**1347642**	**1347643**	**1347644**
	Your Reference	MW-12	MW-13	MW-14	MW-15
	Matrix	Groundwater	Groundwater	Groundwater	Groundwater
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS) PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133932	133932	133932	133932
Benzene	µg/L	< 0.1	0.3	< 0.1	< 0.1
Toluene	µg/L	< 0.1	< 0.1	0.6	< 0.1
Ethylbenzene	µg/L	< 0.1	< 0.1	0.9	< 0.1
Xylenes	µg/L	< 0.1	< 0.1	18.4	< 0.1
Recuperation %					
Dibromofluoromethane	%	115%	114%	113%	112%
D8-Toluene	%	101%	101%	100%	100%
1-Bromo-4-fluorobenzene	%	103%	103%	95%	101%
Petroleum Hydrocarbons (C6-C10)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Volatile Organic Compounds (GC-FID) PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134185	134185	134185	134185
Petroleum Hydrocarbons (C6-C10)	µg/L	< 25	26	97	< 25
Petroleum Hydrocarons C10@C50 by fraction	Preparation	2007-09-04	2007-09-04	2007-09-04	2007-09-04
C10-C50 petroleum hydrocarbons. PON-13-03-97 (MA.400-C10C50 1.0, CEAEQ)	Analysis	2007-09-05	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134136	134136	134136	134136
Petroleum Hydrocarbons C10-C16	mg/L	< 0.1	< 0.1	0.3	< 0.1
Petroleum Hydrocarbons C16-C34	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Petroleum Hydrocarbons C34-C50	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Total Petroleum hydrocarbons C10@C50	mg/L	ND	ND	0.3	ND

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)
	Lab. No.	**1347645**
	Your Reference	MW-16
	Matrix	Groundwater
	Sampled by	R. FLETCHER
	Site sampled	NA
	Date sampled	2007-08-24
	Date received	2007-08-28

Parameter(s) Method Reference		
BTEX	Preparation	2007-08-30
Volatile Organic Compounds (GC-MS) PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30
	Sequential No.	133932
Benzene	µg/L	< 0.1
Toluene	µg/L	0.2
Ethylbenzene	µg/L	< 0.1
Xylenes	µg/L	< 0.1
Recuperation %		
Dibromofluoromethane	%	116%
D8-Toluene	%	100%
1-Bromo-4-fluorobenzene	%	103%
Petroleum Hydrocarbons (C6-C10)	Preparation	2007-09-01
Volatile Organic Compounds (GC-FID) PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-09-01
	Sequential No.	134185
Petroleum Hydrocarbons (C6-C10)	µg/L	< 25
Petroleum Hydrocarons C10@C50 by fraction	Preparation	2007-09-04
C10-C50 petroleum hydrocarbons. PON-13-03-97 (MA.400-C10C50 1.0, CEAEQ)	Analysis	2007-09-05
	Sequential No.	134136
Petroleum Hydrocarbons C10-C16	mg/L	< 0.1
Petroleum Hydrocarbons C16-C34	mg/L	< 0.1
Petroleum Hydrocarbons C34-C50	mg/L	< 0.1
Total Petroleum hydrocarbons C10@C50	mg/L	ND

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347599**	**1347600**	**1347601**	**1347602**
	Your Reference	QA/QC-1	QA/QC-2	QA/QC-3	QA/QC-4
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133760	133760	133760	133760
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	117%	110%	110%	99%
D8-Toluene	%	110%	113%	115%	108%
1-Bromo-4-fluorobenzene	%	98%	107%	107%	107%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133766	133766	133766	133766
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	14	105	82	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-08-01	2007-08-01	2007-08-01
	Sequential No.	133842	133842	133842	133842
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	7010	8460	6280	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	843	1000	227	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	96	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	7850	9470	6510	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133888	133888	133888	133888
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347599**	**1347600**	**1347601**	**1347602**
	Your Reference	QA/QC-1	QA/QC-2	QA/QC-3	QA/QC-4
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	84 %	87 %	99 %	95 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347603**	**1347604**	**1347605**	**1347610**
	Your Reference	QA/QC-5	QA/QC-6	QA/QC-7	F4-6 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133760	133760	133760	133760
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	127%	119%	120%	118%
D8-Toluene	%	110%	105%	105%	109%
1-Bromo-4-fluorobenzene	%	108%	94%	96%	100%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133766	133766	133766	133766
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-08-01	2007-08-01	2007-08-01	2007-08-01
	Sequential No.	133842	133842	133842	133842
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	44	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	208	< 20	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	252	ND	ND	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133888	133888	133888	133888
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347603**	**1347604**	**1347605**	**1347610**
	Your Reference	QA/QC-5	QA/QC-6	QA/QC-7	F4-6 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	94 %	89 %	88 %	100 %

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P.O. Number	Your Project ID.	Project Manager
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		Sample(s)			
	Lab. No.	**1347611**	**1347612**	**1347613**	**1347614**
	Your Reference	F4-6 (soil) 40-50cm	F4-7 (soil) 0-15cm	F4-7 (soil) 40-50cm	F4-8 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133760	133760	133760	133760
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	118%	114%	116%	124%
D8-Toluene	%	111%	105%	105%	127%
1-Bromo-4-fluorobenzene	%	110%	96%	96%	124%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133766	133766	133766	133766
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	< 12	< 12
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-08-01	2007-08-01	2007-08-01	2007-08-01
	Sequential No.	133842	133842	133842	133842
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	< 20	32
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	ND	ND	ND	32
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133888	133888	133888	133888
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347611**	**1347612**	**1347613**	**1347614**
	Your Reference	F4-6 (soil) 40-50cm	F4-7 (soil) 0-15cm	F4-7 (soil) 40-50cm	F4-8 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-25
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	0.1
Recuperation %					
Decachlorobiphenyl	%	88 %	92 %	97 %	95 %

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

	Sample(s)			
Lab. No.	**1347615**	**1347616**	**1347617**	**1347618**
Your Reference	F4-8 (soil) 40-50cm	F4-25 (soil) 0-15cm	F4-25 (soil) 40-50cm	MW-16 (soil) 40-50cm
Matrix	Soil	Soil	Soil	Soil
Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
Site sampled	NA	NA	NA	NA
Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-24
Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28

Parameter(s) / Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133760	133760	133760	133761
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	0.012
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	115%	118%	118%	85%
D8-Toluene	%	108%	104%	106%	99%
1-Bromo-4-fluorobenzene	%	106%	98%	100%	100%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133766	133766	133766	133767
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-30
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-08-01	2007-08-01	2007-08-01	2007-09-01
	Sequential No.	133842	133842	133842	133852
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	ND	ND	ND	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-31
	Sequential No.	133888	133888	133888	134039
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347615**	**1347616**	**1347617**	**1347618**
	Your Reference	F4-8 (soil) 40-50cm	F4-25 (soil) 0-15cm	F4-25 (soil) 40-50cm	MW-16 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-25	2007-08-25	2007-08-25	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	91 %	74 %	97 %	86 %

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		Sample(s)			
	Lab. No.	**1347619**	**1347620**	**1347621**	**1347622**
	Your Reference	F4-11 (soil) 0-15cm	F4-11 (soil) 40-50cm	F4-12 (soil) 0-15cm	F4-12 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133761	133761	133761	133761
Benzene	mg/kg	0.011	0.011	0.011	0.011
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	87%	93%	95%	95%
D8-Toluene	%	99%	103%	103%	103%
1-Bromo-4-fluorobenzene	%	99%	95%	94%	94%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133767	133767	133767	133767
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 12	< 11	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	133852	133852	133852	133852
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	657	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	778	23	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	1440	23	ND	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134039	134039	134039	134039
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347619**	**1347620**	**1347621**	**1347622**
	Your Reference	F4-11 (soil) 0-15cm	F4-11 (soil) 40-50cm	F4-12 (soil) 0-15cm	F4-12 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	94 %	93 %	91 %	82 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347623**	**1347624**	**1347625**	**1347626**
	Your Reference	F4-13 (soil) 0-15cm	F4-13 (soil) 40-50cm	MW-13 (soil) 0-15cm	MW-13 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133761	133761	133761	133761
Benzene	mg/kg	0.012	0.012	0.010	0.010
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	95%	95%	95%	95%
D8-Toluene	%	103%	103%	104%	103%
1-Bromo-4-fluorobenzene	%	94%	94%	95%	94%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133767	133767	133767	133767
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 12	< 12	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	133852	133852	133852	133852
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	28	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	ND	ND	28	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134039	134039	134039	134039
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347623**	**1347624**	**1347625**	**1347626**
	Your Reference	F4-13 (soil) 0-15cm	F4-13 (soil) 40-50cm	MW-13 (soil) 0-15cm	MW-13 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-24
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	89 %	98 %	91 %	100 %

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347627**	**1347628**	**1347629**	**1347647**
	Your Reference	MW-14 (soil) 0-15cm	MW-14 (soil) 40-50cm	MW-16 (soil) 0-15cm	MW-6 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133761	133761	133761	133761
Benzene	mg/kg	0.010	0.011	0.009	0.010
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	95%	95%	94%	93%
D8-Toluene	%	102%	104%	104%	102%
1-Bromo-4-fluorobenzene	%	94%	94%	94%	94%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133767	133767	133767	133767
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	133852	133852	133852	133852
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	42	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	217	135	< 20	50
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	23	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	283	135	ND	50
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134039	134039	134039	134039
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347627**	**1347628**	**1347629**	**1347647**
	Your Reference	MW-14 (soil) 0-15cm	MW-14 (soil) 40-50cm	MW-16 (soil) 0-15cm	MW-6 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-24	2007-08-24	2007-08-24	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	96 %	85 %	92 %	94 %

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347648**	**1347649**	**1347650**	**1347651**
	Your Reference	MW-7 (soil) 0-15cm	MW-7 (soil) 40-50cm	MW-8 (soil) 0-15cm	MW-8 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133761	133761	133762	133762
Benzene	mg/kg	0.010	< 0.009	0.011	0.010
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	93%	92%	93%	93%
D8-Toluene	%	104%	105%	104%	104%
1-Bromo-4-fluorobenzene	%	95%	94%	94%	90%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-29	2007-08-29	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-29	2007-08-29	2007-08-30	2007-08-30
	Sequential No.	133767	133767	133768	133768
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-08-30	2007-08-30	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	133852	133852	134166	134166
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	23	493
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	208	< 20	73	369
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	28	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	236	ND	96	863
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134039	134039	134040	134040
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347648**	**1347649**	**1347650**	**1347651**
	Your Reference	MW-7 (soil) 0-15cm	MW-7 (soil) 40-50cm	MW-8 (soil) 0-15cm	MW-8 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	0.1	ND
Recuperation %					
Decachlorobiphenyl	%	78 %	97 %	90 %	94 %

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347652**	**1347653**	**1347654**	**1347655**
	Your Reference	MW-9 (soil) 0-15cm	MW-9 (soil) 40-50cm	F4-1 (soil) 0-15cm	F4-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133762	133762	133762	133762
Benzene	mg/kg	0.010	0.010	< 0.009	0.011
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	92%	93%	92%	93%
D8-Toluene	%	101%	104%	104%	105%
1-Bromo-4-fluorobenzene	%	93%	94%	93%	101%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133768	133768	133768	133768
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	82	96
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134166	134166	134166	134166
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	5720	3660
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	25	< 20	132	128
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	25	ND	5850	3790
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134040	134040	134040	134040
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	0.4	0.1	< 0.1	0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347652**	**1347653**	**1347654**	**1347655**
	Your Reference	MW-9 (soil) 0-15cm	MW-9 (soil) 40-50cm	F4-1 (soil) 0-15cm	F4-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	0.4	0.1	ND	0.1
Recuperation %					
Decachlorobiphenyl	%	97 %	92 %	94 %	77 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347656**	**1347657**	**1347658**	**1347659**
	Your Reference	F4-2 (soil) 0-15cm	F4-2 (soil) 40-50cm	MW-1 (soil) 0-15cm	MW-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133762	133762	133762	133762
Benzene	mg/kg	0.010	0.010	0.010	0.010
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	92%	93%	93%	92%
D8-Toluene	%	103%	102%	102%	101%
1-Bromo-4-fluorobenzene	%	95%	97%	96%	96%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133768	133768	133768	133768
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	23	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134166	134166	134166	134166
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	245	1580	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	59	59	32	51
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	304	1640	32	51
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134040	134040	134040	134040
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347656**	**1347657**	**1347658**	**1347659**
	Your Reference	F4-2 (soil) 0-15cm	F4-2 (soil) 40-50cm	MW-1 (soil) 0-15cm	MW-1 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	93 %	94 %	95 %	90 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347660**	**1347661**	**1347662**	**1347663**
	Your Reference	MW-2 (soil) 0-15cm	MW-2 (soil) 40-50cm	MW-3 (soil) 0-15cm	MW-3 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-29	2007-08-29	2007-08-29
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-29	2007-08-29	2007-08-29
	Sequential No.	133762	133762	133762	133762
Benzene	mg/kg	0.010	0.010	< 0.009	0.010
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	93%	92%	92%	93%
D8-Toluene	%	102%	103%	102%	102%
1-Bromo-4-fluorobenzene	%	97%	94%	103%	97%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133768	133768	133768	133768
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	12	99	< 11	< 10
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134166	134166	134166	134166
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	320	3300	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	20	87	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	320	3390	ND	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-08-31	2007-08-31	2007-08-31
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	134040	134040	134040	134040
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347660**	**1347661**	**1347662**	**1347663**
	Your Reference	MW-2 (soil) 0-15cm	MW-2 (soil) 40-50cm	MW-3 (soil) 0-15cm	MW-3 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	85 %	74 %	88 %	80 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347664**	**1347665**	**1347666**	**1347667**
	Your Reference	MW-4 (soil) 0-15cm	MW-4 (soil) 40-50cm	MW-5 (soil) 0-15cm	MW-5 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-29	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-29	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133762	133764	133764	133764
Benzene	mg/kg	0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	93%	115%	120%	114%
D8-Toluene	%	101%	103%	99%	102%
1-Bromo-4-fluorobenzene	%	96%	99%	93%	102%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133768	133792	133792	133792
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-04	2007-09-04	2007-09-04
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-04	2007-09-04	2007-09-04
	Sequential No.	134166	134167	134167	134167
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	24	137	< 20	37
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	78	141	96	273
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	54	< 20	34
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	102	332	96	344
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-08-31	2007-09-05	2007-09-05	2007-09-05
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-08-31	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134040	134164	134164	134164
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	0.7	0.7	< 0.1	0.2
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347664**	**1347665**	**1347666**	**1347667**
	Your Reference	MW-4 (soil) 0-15cm	MW-4 (soil) 40-50cm	MW-5 (soil) 0-15cm	MW-5 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	0.7	0.7	ND	0.2
Recuperation %					
Decachlorobiphenyl	%	90 %	97 %	93 %	99 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347668**	**1347669**	**1347670**	**1347671**
	Your Reference	MW-6 (soil) 0-15cm	MW-11 (soil) 0-15cm	MW-11 (soil) 40-50cm	MW-12 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133764	133764	133764	133764
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	111%	112%	114%	110%
D8-Toluene	%	103%	101%	102%	102%
1-Bromo-4-fluorobenzene	%	102%	100%	100%	101%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133792	133792	133792	133792
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 11	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-04	2007-09-04	2007-09-04	2007-09-04
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-04	2007-09-04	2007-09-04	2007-09-04
	Sequential No.	134167	134167	134167	134167
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	53	< 20	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	53	ND	ND	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-09-05	2007-09-05	2007-09-05	2007-09-05
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-09-05	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134164	134164	134164	134164
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347668**	**1347669**	**1347670**	**1347671**
	Your Reference	MW-6 (soil) 0-15cm	MW-11 (soil) 0-15cm	MW-11 (soil) 40-50cm	MW-12 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	105 %	103 %	100 %	101 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347672**	**1347673**	**1347674**	**1347675**
	Your Reference	MW-12 (soil) 40-50cm	MW-15 (soil) 0-15cm	MW-15 (soil) 40-50cm	MW-10 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133764	133764	133764	133764
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	115%	112%	116%	118%
D8-Toluene	%	107%	102%	103%	108%
1-Bromo-4-fluorobenzene	%	104%	95%	97%	102%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133792	133792	133792	133792
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	< 12	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-04	2007-09-04	2007-09-04	2007-09-04
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-04	2007-09-04	2007-09-04	2007-09-04
	Sequential No.	134167	134167	134167	134167
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	ND	ND	ND	ND
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-09-05	2007-09-05	2007-09-05	2007-09-05
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-09-05	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134164	134164	134164	134164
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347672**	**1347673**	**1347674**	**1347675**
	Your Reference	MW-12 (soil) 40-50cm	MW-15 (soil) 0-15cm	MW-15 (soil) 40-50cm	MW-10 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-21	2007-08-21	2007-08-21
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	104 %	94 %	102 %	96 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347676**	**1347680**	**1347681**	**1347682**
	Your Reference	MW-10 (soil) 40-50cm	F4-20 (soil) 40-50cm	F4-21 (soil) 0-15cm	F4-21 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133764	133764	133764	133764
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	0.1 (<A)	0.4 (A-B)	1.6 (A-B)
Recuperation %					
Dibromofluoromethane	%	116%	119%	136%	126%
D8-Toluene	%	103%	119%	143%	132%
1-Bromo-4-fluorobenzene	%	98%	124%	132%	115%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133792	133792	133792	133792
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 11	133	120	142
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-04	2007-09-04	2007-09-04	2007-09-04
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-04	2007-09-04	2007-09-04	2007-09-04
	Sequential No.	134167	134167	134167	134167
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	1500	9150	6380
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	23	1150	235
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	32	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	ND	1520	10300	6610
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-09-05	-	-	-
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-09-05	-	-	-
	Sequential No.	134164	-	-	-
Aroclor 1242	mg/kg	< 0.1	-	-	-
Aroclor 1248	mg/kg	< 0.1	-	-	-
Aroclor 1254	mg/kg	< 0.1	-	-	-
Aroclor 1260	mg/kg	< 0.1	-	-	-

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347676**	**1347680**	**1347681**	**1347682**
	Your Reference	MW-10 (soil) 40-50cm	F4-20 (soil) 40-50cm	F4-21 (soil) 0-15cm	F4-21 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-21	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	-	-	-
Recuperation %					
Decachlorobiphenyl	%	96 %	-	-	-

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P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347683**	**1347684**	**1347685**	**1347686**
	Your Reference	F4-22 (soil) 0-15cm	F4-22 (soil) 40-50cm	F4-17 (soil) 0-15cm	F4-17 (soil) 40-50cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133765	133765	133765	133765
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	0.4 (A-B)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	112%	111%	104%	111%
D8-Toluene	%	123%	125%	108%	114%
1-Bromo-4-fluorobenzene	%	111%	126%	106%	109%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	133793	133793	133793	133793
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	58	14	< 11	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134168	134168	134168	134168
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	3450	6800	21	< 20
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	343	509	< 20	< 20
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	3790	7310	21	ND

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347687**	**1347688**	**1347689**	**1347693**
	Your Reference	F4-23 (soil) 0-15cm	F4-24 (soil) 0-15cm	F4-24 (soil) 40-50cm	F4-3 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133765	133765	133765	133765
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	125%	115%	118%	125%
D8-Toluene	%	145%	129%	132%	147%
1-Bromo-4-fluorobenzene	%	125%	139%	133%	144%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	133793	133793	133793	133793
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 12	< 11	24	41
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134168	134168	134168	134168
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	11900	2400	4640	5050
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	4660	204	231	295
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	36	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	16600	2600	4870	5340
Polychlorinated Biphenyls (Aroclors)	Preparation	-	-	-	2007-09-05
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	-	-	-	2007-09-05
	Sequential No.	-	-	-	134164
Aroclor 1242	mg/kg	-	-	-	< 0.1
Aroclor 1248	mg/kg	-	-	-	< 0.1
Aroclor 1254	mg/kg	-	-	-	0.1
Aroclor 1260	mg/kg	-	-	-	< 0.1

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347687**	**1347688**	**1347689**	**1347693**
	Your Reference	F4-23 (soil) 0-15cm	F4-24 (soil) 0-15cm	F4-24 (soil) 40-50cm	F4-3 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	-	-	-	0.1
Recuperation %					
Decachlorobiphenyl	%	-	-	-	92 %

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347694**	**1347695**	**1347696**	**1347697**
	Your Reference	F4-3 (soil) 40-50cm	F4-4 (soil) 0-15cm	F4-4 (soil) 40-50cm	F4-5 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133765	133765	133765	133765
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	123%	114%	114%	122%
D8-Toluene	%	143%	132%	130%	141%
1-Bromo-4-fluorobenzene	%	136%	138%	151%	145%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	133793	133793	133793	133793
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	76	14	< 11	25
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134168	134168	134168	134168
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	7510	3150	2390	8100
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	668	489	731	452
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	8180	3640	3120	8550
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-09-05	2007-09-05	2007-09-05	2007-09-05
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-09-05	2007-09-05	2007-09-05	2007-09-05
	Sequential No.	134164	134164	134165	134165
Aroclor 1242	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1248	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor 1254	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Aroclor 1260	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347694**	**1347695**	**1347696**	**1347697**
	Your Reference	F4-3 (soil) 40-50cm	F4-4 (soil) 0-15cm	F4-4 (soil) 40-50cm	F4-5 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	0.2	ND	ND	ND
Recuperation %					
Decachlorobiphenyl	%	106 %	102 %	100 %	98 %

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
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		Sample(s)			
	Lab. No.	**1347698**	**1347702**	**1347703**	**1347704**
	Your Reference	F4-5 (soil) 40-50cm	F4-18 (soil) 0-15cm	F4-18 (soil) 40-50cm	F4-19 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
BTEX	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30	2007-08-30	2007-08-30
	Sequential No.	133765	133765	133765	133904
Benzene	mg/kg	< 0.009	< 0.009	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	< 0.02	< 0.02	< 0.02	< 0.02
Xylenes	mg/kg	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)	< 0.1 (<A)
Recuperation %					
Dibromofluoromethane	%	120%	108%	106%	115%
D8-Toluene	%	140%	126%	127%	114%
1-Bromo-4-fluorobenzene	%	139%	145%	141%	114%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-31	2007-08-31	2007-08-31	2007-08-31
	Sequential No.	133793	133793	133793	133794
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	22	29	40	< 11
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-01	2007-09-01	2007-09-01
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-01	2007-09-01	2007-09-01
	Sequential No.	134168	134168	134168	134168
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	9440	3010	3210	4640
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	818	86	76	253
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	10300	3100	3290	4890
Polychlorinated Biphenyls (Aroclors)	Preparation	2007-09-05	-	-	-
PCB by Aroclors par GC-ECD. Result on dry weight. 13-02-96 (REF: MEF 1995-05-11 / 408-BPC 2.0)	Analysis	2007-09-05	-	-	-
	Sequential No.	134165	-	-	-
Aroclor 1242	mg/kg	< 0.1	-	-	-
Aroclor 1248	mg/kg	< 0.1	-	-	-
Aroclor 1254	mg/kg	< 0.1	-	-	-
Aroclor 1260	mg/kg	< 0.1	-	-	-

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

		Sample(s)			
	Lab. No.	**1347698**	**1347702**	**1347703**	**1347704**
	Your Reference	F4-5 (soil) 40-50cm	F4-18 (soil) 0-15cm	F4-18 (soil) 40-50cm	F4-19 (soil) 0-15cm
	Matrix	Soil	Soil	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA	NA	NA
	Date sampled	2007-08-22	2007-08-22	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28	2007-08-28	2007-08-28
Parameter(s) Method Reference					
PCB Total	mg/kg	ND	-	-	-
Recuperation %					
Decachlorobiphenyl	%	99 %	-	-	-

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Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
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		Sample(s)	
	Lab. No.	**1347705**	**1347706**
	Your Reference	F4-19 (soil) 40-50cm	F4-20 (soil) 0-15cm
	Matrix	Soil	Soil
	Sampled by	R. FLETCHER	R. FLETCHER
	Site sampled	NA	NA
	Date sampled	2007-08-22	2007-08-22
	Date received	2007-08-28	2007-08-28
Parameter(s) Method Reference			
BTEX	Preparation	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-MS). Result on dry weight. PON-13-12-97 (REF:MA. 400 - COV 1.1, CEAEQ)	Analysis	2007-08-30	2007-08-30
	Sequential No.	133904	133904
Benzene	mg/kg	< 0.009	< 0.009
Toluene	mg/kg	< 0.1 (<A)	< 0.1 (<A)
Ethyl benzene	mg/kg	0.06	< 0.02
Xylenes	mg/kg	0.2 (A)	< 0.1 (<A)
Recuperation %			
Dibromofluoromethane	%	111%	107%
D8-Toluene	%	120%	116%
1-Bromo-4-fluorobenzene	%	121%	124%
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)	Preparation	2007-08-30	2007-08-30
Volatile Organic Compounds (GC-FID). Results on dry weight. PON-13-12-97 (REF:CCME, PHCs CWS)	Analysis	2007-08-31	2007-08-31
	Sequential No.	133794	133794
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	34	42
Petroleum Hydrocarbons C10@C50 (F2@F4)	Preparation	2007-09-01	2007-09-04
Petroleum Hydrocarbons C10@C50 (F2@F4). Results on dry weight. PON-13-19-06 (REF : CCME TPH in Soil)	Analysis	2007-09-01	2007-09-04
	Sequential No.	134166	134167
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	612
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	67
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20
Total Petroleum Hydrocarbons C10@C50 (F2@F4)	mg/kg	ND	679

Note: Results pertain only to the samples submitted for analysis.

CHIMISTE
Caroline Schiltz
1998-046
QUÉBEC

Chemist

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Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Polychlorinated Biphenyls (Aroclors) Sequential ID No.: 133888					
Aroclor 1242	mg/kg	< 0.1	< 0.1	10.1	6.87 - 12.75
Aroclor 1248	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1254	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1260	mg/kg	< 0.1	< 0.1	NA	NA
Polychlorinated Biphenyls (Aroclors) Sequential ID No.: 134039					
Aroclor 1242	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1248	mg/kg	< 0.1	< 0.1	65.5	37.5 - 108
Aroclor 1254	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1260	mg/kg	< 0.1	< 0.1	NA	NA
Polychlorinated Biphenyls (Aroclors) Sequential ID No.: 134040					
Aroclor 1242	mg/kg	< 0.1	< 0.1	12.7	6.87 - 12.75
Aroclor 1248	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1254	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1260	mg/kg	< 0.1	< 0.1	NA	NA
Polychlorinated Biphenyls (Aroclors) Sequential ID No.: 134164					
Aroclor 1242	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1248	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1254	mg/kg	< 0.1	< 0.1	69.5	38.7 - 111
Aroclor 1260	mg/kg	< 0.1	< 0.1	NA	NA
Polychlorinated Biphenyls (Aroclors) Sequential ID No.: 134165					
Aroclor 1242	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1248	mg/kg	< 0.1	< 0.1	65.5	37.5 - 108
Aroclor 1254	mg/kg	< 0.1	< 0.1	NA	NA
Aroclor 1260	mg/kg	< 0.1	< 0.1	NA	NA

Comments

RDL : Reported Detection Limit

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P.O. Number	Your Project ID.	Project Manager
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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
BTEX					
Sequential ID No.: 133932					
Benzene	µg/L	< 0.1	< 0.1	18.9	14.6 - 21.8
Toluene	µg/L	< 0.1	< 0.1	16.1	12.3 - 18.5
Ethylbenzene	µg/L	< 0.1	< 0.1	16.2	13 - 19.4
Xylenes	µg/L	< 0.1	< 0.1	31.2	24.7 - 37.1
BTEX					
Sequential ID No.: 133760					
Benzene	mg/kg	< 0.009	< 0.009	0.603	0.5 - 0.7
Toluene	mg/kg	< 0.1	< 0.1	0.6	0.5 - 0.8
Ethyl benzene	mg/kg	< 0.02	< 0.02	0.82	0.6 - 1
Xylenes	mg/kg	< 0.1	< 0.1	1.0	0.8 - 1.2
BTEX					
Sequential ID No.: 133761					
Benzene	mg/kg	< 0.009	< 0.009	2.65	2 - 3
Toluene	mg/kg	< 0.1	< 0.1	2.6	2 - 3
Ethyl benzene	mg/kg	< 0.02	< 0.02	2.70	2 - 3
Xylenes	mg/kg	< 0.1	< 0.1	8.0	6 - 9
BTEX					
Sequential ID No.: 133762					
Benzene	mg/kg	< 0.009	< 0.009	2.49	2 - 3
Toluene	mg/kg	< 0.1	< 0.1	2.5	2 - 3
Ethyl benzene	mg/kg	< 0.02	< 0.02	2.58	2 - 3
Xylenes	mg/kg	< 0.1	< 0.1	7.7	6 - 9
BTEX					
Sequential ID No.: 133764					
Benzene	mg/kg	< 0.009	< 0.009	0.624	0.5 - 0.7
Toluene	mg/kg	< 0.1	< 0.1	0.6	0.5 - 0.8
Ethyl benzene	mg/kg	< 0.02	< 0.02	0.89	0.6 - 1
Xylenes	mg/kg	< 0.1	< 0.1	1.1	0.8 - 1.2

Comments

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
BTEX					
Sequential ID No.: 133765					
Benzene	mg/kg	< 0.009	< 0.009	0.603	0.5 - 0.7
Toluene	mg/kg	< 0.1	< 0.1	0.7	0.5 - 0.8
Ethyl benzene	mg/kg	< 0.02	< 0.02	0.89	0.6 - 1
Xylenes	mg/kg	< 0.1	< 0.1	1.0	0.8 - 1.2
BTEX					
Sequential ID No.: 133904					
Benzene	mg/kg	< 0.009	< 0.009	0.603	0.5 - 0.7
Toluene	mg/kg	< 0.1	< 0.1	0.7	0.5 - 0.8
Ethyl benzene	mg/kg	< 0.02	< 0.02	0.89	0.6 - 1
Xylenes	mg/kg	< 0.1	< 0.1	1.0	0.8 - 1.2
Mercury (cold vapor)					
Sequential ID No.: 133724					
Mercury	mg/L	< 0.0001	< 0.0001	0.0068	0.0048 - 0.0072
Mercury (cold vapor)					
Sequential ID No.: 133747					
Mercury	mg/L	< 0.0001	< 0.0001	0.0068	0.0048 - 0.0072
Mercury (cold vapor)					
Sequential ID No.: 133783					
Mercury	mg/kg	< 0.04	< 0.04	4.03	3.58 - 5.36
Mercury (cold vapor)					
Sequential ID No.: 133784					
Mercury	mg/kg	< 0.04	< 0.04	3.71	3.58 - 5.36
Mercury (cold vapor)					
Sequential ID No.: 133861					
Mercury	mg/kg	< 0.04	< 0.04	4.12	3.58 - 5.36
Mercury (cold vapor)					
Sequential ID No.: 133862					

Comments

RDL : Reported Detection Limit

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Mercury	mg/kg	< 0.04	< 0.04	3.85	3.58 - 5.36
Mercury (cold vapor)					
Sequential ID No.: 133993					
Mercury	mg/kg	< 0.04	< 0.04	3.95	3.58 - 5.36
Mercury (cold vapor)					
Sequential ID No.: 133994					
Mercury	mg/kg	< 0.04	< 0.04	3.95	3.58 - 5.36
Moisture (for calculation)					
Sequential ID No.: 133864					
Moisture	%	< 0.1	0.1	52.7	45 - 55
Moisture (for calculation)					
Sequential ID No.: 133868					
Moisture	%	< 0.1	< 0.1	52.6	45 - 55
Petroleum Hydrocarons C10@C50 by fraction					
Sequential ID No.: 134136					
Petroleum Hydrocarbons C10-C16	mg/L	< 0.1	< 0.1	NA	NA
Petroleum Hydrocarbons C16-C34	mg/L	< 0.1	< 0.1	NA	NA
Petroleum Hydrocarbons C34-C50	mg/L	< 0.1	< 0.1	NA	NA
Total Petroleum hydrocarbons C10@C50		NA	NA	2.0	1.5 - 2.9
				2.0	1.5 - 2.9
Petroleum Hydrocarbons (C6-C10)					
Sequential ID No.: 134185					
Petroleum Hydrocarbons (C6-C10)	µg/L	< 25	< 25	203	200 - 300
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)					
Sequential ID No.: 133766					
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	NA	NA
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX)					
Sequential ID No.: 133767					
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	NA	NA

Comments

RDL : Reported Detection Limit

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX) Sequential ID No.: 133768					
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	NA	NA
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX) Sequential ID No.: 133792					
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	NA	NA
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX) Sequential ID No.: 133793					
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	NA	NA
Pet. hydrocarbons C6@C10 - BTEX (F1-BTEX) Sequential ID No.: 133794					
Petroleum Hydrocarbons C6@C10 - BTEX (F1-BTEX)	mg/kg	< 10	< 10	NA	NA
Petroleum Hydrocarbons C10@C50 (F2@F4) Sequential ID No.: 133842					
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	1870	1728.3 - 3209.85
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C10@C50 (F2@F4) Sequential ID No.: 133852					
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	2230	1728.3 - 3209.85
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C10@C50 (F2@F4) Sequential ID No.: 134166					
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	2380	1728.3 - 3209.85
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C10@C50 (F2@F4) Sequential ID No.: 134167					

Comments

RDL : Reported Detection Limit

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	< 20	1728.3 - 3209.85
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C10@C50 (F2@F4)					
Sequential ID No.: 134168					
Petroleum Hydrocarbons C10@C16 (F2)	mg/kg	< 20	< 20	NA	NA
Petroleum Hydrocarbons C16@C34 (F3)	mg/kg	< 20	< 20	2380	1728.3 - 3209.85
Petroleum Hydrocarbons C34@C50 (F4)	mg/kg	< 20	< 20	NA	NA
Arsenic (As)					
Sequential ID No.: 133732					
Arsenic	mg/L	< 0.001	0.001	0.902	0.8 - 1.2
Arsenic (As)					
Sequential ID No.: 133811					
Arsenic	mg/kg	< 0.7	< 0.7	94.2	80 - 120
Arsenic (As)					
Sequential ID No.: 133813					
Arsenic	mg/kg	< 0.7	< 0.7	92.0	80 - 120
Arsenic (As)					
Sequential ID No.: 133836					
Arsenic	mg/kg	< 0.7	< 0.7	93.2	80 - 120
Arsenic (As)					
Sequential ID No.: 133838					
Arsenic	mg/kg	< 0.7	< 0.7	94.2	80 - 120
Arsenic (As)					
Sequential ID No.: 133848					
Arsenic	mg/kg	< 0.7	< 0.7	97.2	80 - 120
Arsenic (As)					
Sequential ID No.: 133855					
Arsenic	mg/kg	< 0.7	< 0.7	103	80 - 120

Comments

RDL : Reported Detection Limit

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Cadmium (Cd) Sequential ID No.: 133732					
Cadmium	mg/L	< 0.001	< 0.001	0.867	0.8 - 1.2
Cadmium (Cd) Sequential ID No.: 133811					
Cadmium	mg/kg	< 0.9	< 0.9	99.1	80 - 120
Cadmium (Cd) Sequential ID No.: 133813					
Cadmium	mg/kg	< 0.9	< 0.9	102	80 - 120
Cadmium (Cd) Sequential ID No.: 133836					
Cadmium	mg/kg	< 0.9	< 0.9	102	80 - 120
Cadmium (Cd) Sequential ID No.: 133838					
Cadmium	mg/kg	< 0.9	< 0.9	102	80 - 120
Cadmium (Cd) Sequential ID No.: 133848					
Cadmium	mg/kg	< 0.9	< 0.9	101	80 - 120
Cadmium (Cd) Sequential ID No.: 133855					
Cadmium	mg/kg	< 0.9	< 0.9	103	80 - 120
Cobalt (Co) Sequential ID No.: 133732					
Cobalt	mg/L	< 0.001	< 0.001	0.957	0.8 - 1.2
Cobalt (Co) Sequential ID No.: 133811					
Cobalt	mg/kg	< 1	< 1	97	80 - 120

Comments

RDL : Reported Detection Limit

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Cobalt (Co) Sequential ID No.: 133813					
Cobalt	mg/kg	< 1	< 1	95	80 - 120
Cobalt (Co) Sequential ID No.: 133836					
Cobalt	mg/kg	< 1	< 1	88	80 - 120
Cobalt (Co) Sequential ID No.: 133838					
Cobalt	mg/kg	< 1	< 1	93	80 - 120
Cobalt (Co) Sequential ID No.: 133848					
Cobalt	mg/kg	< 1	< 1	89	80 - 120
Cobalt (Co) Sequential ID No.: 133855					
Cobalt	mg/kg	< 1	< 1	102	80 - 120
Chromium (Cr) Sequential ID No.: 133732					
Chromium	mg/L	< 0.001	0.002	0.863	0.8 - 1.2
Chromium (Cr) Sequential ID No.: 133811					
Chromium	mg/kg	< 2	< 2	97	80 - 120
Chromium (Cr) Sequential ID No.: 133813					
Chromium	mg/kg	< 2	< 2	95	80 - 120
Chromium (Cr) Sequential ID No.: 133836					
Chromium	mg/kg	< 2	< 2	92	80 - 120

Comments

RDL : Reported Detection Limit

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Chromium (Cr) Sequential ID No.: 133838					
Chromium	mg/kg	< 2	< 2	96	80 - 120
Chromium (Cr) Sequential ID No.: 133848					
Chromium	mg/kg	< 2	< 2	88	80 - 120
Chromium (Cr) Sequential ID No.: 133855					
Chromium	mg/kg	< 2	< 2	105	80 - 120
Copper (Cu) Sequential ID No.: 133732					
Copper	mg/L	< 0.001	< 0.001	0.906	0.8 - 1.2
Copper (Cu) Sequential ID No.: 133811					
Copper	mg/kg	< 1	< 1	97	80 - 120
Copper (Cu) Sequential ID No.: 133813					
Copper	mg/kg	< 1	< 1	95	80 - 120
Copper (Cu) Sequential ID No.: 133836					
Copper	mg/kg	< 1	< 1	87	80 - 120
Copper (Cu) Sequential ID No.: 133838					
Copper	mg/kg	< 1	< 1	94	80 - 120
Copper (Cu) Sequential ID No.: 133848					
Copper	mg/kg	< 1	< 1	108	80 - 120

Comments

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Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Copper (Cu)					
Sequential ID No.: 133855					
Copper	mg/kg	< 1	< 1	101	80 - 120
Nickel (Ni)					
Sequential ID No.: 133732					
Nickel	mg/L	< 0.001	< 0.001	0.888	0.8 - 1.2
Nickel (Ni)					
Sequential ID No.: 133811					
Nickel	mg/kg	< 2	< 2	96	80 - 120
Nickel (Ni)					
Sequential ID No.: 133813					
Nickel	mg/kg	< 2	< 2	94	80 - 120
Nickel (Ni)					
Sequential ID No.: 133836					
Nickel	mg/kg	< 2	< 2	87	80 - 120
Nickel (Ni)					
Sequential ID No.: 133838					
Nickel	mg/kg	< 2	< 2	92	80 - 120
Nickel (Ni)					
Sequential ID No.: 133848					
Nickel	mg/kg	< 2	< 2	89	80 - 120
Nickel (Ni)					
Sequential ID No.: 133855					
Nickel	mg/kg	< 2	< 2	102	80 - 120
Lead (Pb)					
Sequential ID No.: 133732					
Lead	mg/L	< 0.001	< 0.001	0.951	0.8 - 1.2

Comments

RDL : Reported Detection Limit

Bodycote Groupe d'Essais
121 Boul. Hymus • Pointe-Claire • Québec • Canada • H9R 1E6 • Tél: +1 (514) 697-3273 • Fax: +1 (514) 697-2090

Certificate of Analysis

Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Lead (Pb) Sequential ID No.: 133811					
Lead	mg/kg	< 10	< 10	94	80 - 120
Lead (Pb) Sequential ID No.: 133813					
Lead	mg/kg	< 10	< 10	96	80 - 120
Lead (Pb) Sequential ID No.: 133836					
Lead	mg/kg	< 10	< 10	103	80 - 120
Lead (Pb) Sequential ID No.: 133838					
Lead	mg/kg	< 10	< 10	97	80 - 120
Lead (Pb) Sequential ID No.: 133848					
Lead	mg/kg	< 10	< 10	105	80 - 120
Lead (Pb) Sequential ID No.: 133855					
Lead	mg/kg	< 10	< 10	105	80 - 120
Zinc (Zn) Sequential ID No.: 133732					
Zinc	mg/L	< 0.01	< 0.01	0.92	0.8 - 1.2
Zinc (Zn) Sequential ID No.: 133811					
Zinc	mg/kg	< 4	8	96	80 - 120
Zinc (Zn) Sequential ID No.: 133813					
Zinc	mg/kg	< 4	< 4	96	80 - 120

Comments

RDL : Reported Detection Limit

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121 Boul. Hymus • Pointe-Claire • Québec • Canada • H9R 1E6 • Tél: +1 (514) 697-3273 • Fax: +1 (514) 697-2090

Certificate of Analysis

Request Number: 07-282515

Client: **NUNATTA ENVIRONMENTAL SERVICES**

P.O. Number	Your Project ID.	Project Manager
NA	NA	Alain Carrière

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control Result	Certified Control Expected Range
Zinc (Zn) Sequential ID No.: 133836					
Zinc	mg/kg	< 4	< 4	93	80 - 120
Zinc (Zn) Sequential ID No.: 133838					
Zinc	mg/kg	< 4	< 4	95	80 - 120
Zinc (Zn) Sequential ID No.: 133848					
Zinc	mg/kg	< 4	< 4	99	80 - 120
Zinc (Zn) Sequential ID No.: 133855					
Zinc	mg/kg	< 4	< 4	119	80 - 120

Comments

RDL : Reported Detection Limit

Bodycote Groupe d'Essais
121 Boul. Hymus • Pointe-Claire • Québec • Canada • H9R 1E6 • Tél: +1 (514) 697-3273 • Fax: +1 (514) 697-2090

Bodycote GROUPE D'ESSAIS
121 BOULEVARD HYMUS, POINTE-CLAIRE QUÉBEC CANADA H9H 1E6 · TEL: (514) 697-3273 · FAX: (514) 697-2090

PAGE DE COUVERTURE

DATE: 2007-09-06

NO. DE PAGES INCLUANT CELLE-CI: 7

À: ALAIN CARRIERE	DE :Service à la clientèle
COMPAGNIE: JUN ATTA	TÉLÉPHONE: 514-697-3273
TÉLÉPHONE:	POSTE TÉLÉPHONE: 450
TÉLÉCOPIEUR: SCAN	TÉLÉCOPIEUR: 514-697-2090

REMARQUES ☐ Urgent ☐ Veuillez commenter ☐ Pour votre révision ☐ Certificat

RÉSULTATS DE SOUS-TRAITANCE

Notre Référence: 07-282 515

Votre Référence: N/A

Bodycote est un des plus importants laboratoires d'essais de matériaux indépendants en Amérique du Nord. Nos capacités incluent :

Métallographie
Essais mécaniques
Essais de corrosion
Analyse de défaillances
Essais sur moteurs et gaz polluants
Simulation d'usure de véhicule
Intérieur d'automobile
Essais de composants
Essais solaires et atmosphérique
Peintures & revêtements
Caractérisation de polymères
Technologies de polymères
Essais sur produits de bâtiment et systèmes
Essais de feu et d'inflammabilité
Technologies des textiles
Dispositifs médicaux
Pharmaceutique
Microbiologie
Recherche et développement
Chimie alimentaire
Inspection en agro-alimentaire
Microbiologie alimentaire
Étiquetage nutritionnel
Expertise industrielle et judiciare
Analyses environnementales (Sol/Air/Eau)
Caractérisation des émissions atmospheriques
Analyse de noyau
Services géologique
Analyses de carburants et de lubrifiants
Essais d'ameublement

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004632

Company	Nunatta	Tests required by:	
Contact	Alain Carriere	Project name :	
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water
WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} / C_6-C_{32}	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)				# of bottles
MW-11 (soil) 0-15cm	Soil	Aug 21/07			X			X			X			X						X								2
MW-11 (soil) 40-50 cm	↓	↓			X			X			X			X						X								2
MW-12 (soil) 0-15 cm					X			X			X			X						X								2
MW-12 (soil) 40-50 cm					X			X			X			X						X								2
MW-15 (soil) 0-15 cm					X			X			X			X						X								2
MW-15 (soil) 40-50 cm					X			X			X			X						X								2
MW-10 (soil) 0-15 cm					X			X			X			X						X								2
MW-10 (soil) 40-50 cm	↓	↓			X			X			X			X						X								2

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPH → C_6 - C_{32}		

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb, Ni,
Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004655

Company	Nunatta		
Contact	Alain Carriere		
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by			
Phone		Fax	

Tests required by:

Project name :

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (C_6-C_{32})	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)				# of Jars
MW-1 (soil) 0-15cm	S	Aug 22/07			X			X			X			X						X								2
MW-1 (soil) 40-50cm					X			X			X			X						X								2
MW-2 (soil) 0-15cm					X			X			X			X						X								2
MW-2 (soil) 40-50cm					X			X			X			X						X								2
MW-3 (soil) 0-15cm					X			X			X			X						X								2
MW-3 (soil) 40-50cm					X			X			X			X						X								2
MW-4 (soil) 0-15cm					X			X			X			X						X								2
MW-4 (soil) 40-50cm					X			X			X			X						X								2
MW-5 (soil) 0-15cm					X			X			X			X						X								2
MW-5 (soil) 40-50cm					X			X			X			X						X								2
MW-6 (soil) 0-15cm					X			X			X			X						X								2

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPH → C_6-C_{32}		

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb,
Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004653

Company	Nunatta	Tests required by:	
Contact	Alain Carriere	Project name :	
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (C_6-C_{32})	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)	# of Jars
MW-6 (soil) 40-50cm	S	Aug 22/07			X			X			X			X						X					2
MW-7 (soil) 0-15cm	↓	↓			X			X			X			X						X					2
MW-7 (soil) 40-50cm					X			X			X			X						X					2
MW-8 (soil) 0-15cm					X			X			X			X						X					2
MW-8 (soil) 40-50cm					X			X			X			X						X					2
MW-9 (soil) 0-15cm					X			X			X			X						X					2
MW-9 (soil) 40-50cm					X			X			X			X						X					2
F4-1 (soil) 0-15cm					X			X			X			X						X					2
F4-1 (soil) 40-50cm					X			X			X			X						X					2
F4-2 (soil) 0-15cm					X			X			X			X						X					2
F4-2 (soil) 40-50cm	↓	↓			X			X			X			X						X					2

Sampling site	Comments:	
TPH → C_6-C_{32}		In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb,
Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

Bodycote Groupe d'essais / Demandes d'analyses

121, Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél.: (514) 697-3273, Fax: (514) 697-2090

Compagnie	Nunatta		
Demandeur	Alain Carriere		
Adresse			
Ville	Iqaluit	Code Postal	
Bon de commande		Soumission	
Prélevé par	R. Fletcher		
Téléphone		Télécopieur	

Résultats requis le : ANNÉE / MOIS / JOUR

Nom du projet : Fox-4 Cape Hooper

Type: (A=absorbant, S=sol, EP=eau potable, ES=eau souterraine, EA=eau surface
EU=eau usée, L=lixiviat, SE=sédiment, B=boue, H=huile, F=frottis, C=charbon)

Identification des échantillons	Nb Cont	Type	Date de prélèvement	H & G totales (Gravimétrique)	H & G minérales (Gravimétrique)	Hyd. Pét. C10-C50 C6-C32	HMA	HHT	BTEX	HAP	Phénois CG-SM	BPC Aroclor	BPC Congénères	Métaux (Cd, Cr, Cu, Ni, Pb, Zn)	Métaux (Spécifier) *	Mercure (total)	Phénois Colo.	pH	Phospore total	NH3	TKN	DBO5	DCO	MES	C.U.M. Règ. 87 Art. 10	Autres (spécifier)			
MW-1	6	GW	Aug 23/07			X			X			X			X	X												
MW-2			Aug 23/07			X			X			X			X	X												
MW-5			Aug 23/07			X			X			X			X	X												
MW-7			Aug 23/07			X			X			X			X	X												
MW-8			Aug 23/07			X			X			X			X	X												
MW-10			Aug 24/07			X			X			X			X	X												
MW-11																												
MW-12			Aug 24/07			X			X			X			X	X												
MW-13			Aug 24/07			X			X			X			X	X												
MW-14			Aug 24/07			X			X			X			X	X												
MW-15			Aug 24/07			X			X			X			X	X												
MW-16			Aug 24/07			X			X			X			X	X												

Lieu de prélèvement	Remarques particulières
TPH → C6 to C32	

Dans le but d'améliorer notre service, il serait appréciable de fournir toutes informations pertinentes aux analyses. Ceci évitera des problèmes analytiques potentiels ou des délais d'analyses supplémentaires.

*** = Spécification des métaux à analyser.**

Total As, Cd, Cr, Co, Cu, Pb, Ni, Zn

Certificat: Français ☐ Anglais ☒

Numéro Séquentiel	Déssaisi:	Reçu:	Date:
7 42744	Déssaisi:	Reçu:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004633

Company	Nunatta		
Contact	Alain Carriere		
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Tests required by:

Project name :

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (GC-FID)	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)	# of Jars
F4-11 (soil) 0-15 cm	S	Aug 24/07			X			X			X			X						X					2
F4-11 (soil) 40-50 cm					X			X			X			X						X					2
F4-12 (soil) 0-15 cm					X			X			X			X						X					2
F4-12 (soil) 40-50 cm					X			X			X			X						X					2
F4-13 (soil) 0-15 cm					X			X			X			X						X					2
F4-13 (soil) 40-50 cm					X			X			X			X						X					2
MW-13 (soil) 0-15cm					X			X			X			X						X					2
MW-13 (soil) 40-50cm					X			X			X			X						X					2
MW-14 (soil) 0-15cm					X			X			X			X						X					2
MW-14 (soil) 40-50 cm					X			X			X			X						X					2
MW-16 (soil) 0-15 cm					X			X			X			X						X					2

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPH → C_6-C_{32}		

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb, Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004634

Company	Nunatta	Tests required by:	
Contact	Alain Carriere	Project name :	
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (C_6-C_{32})	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)				# of Jars
MW-16 (Soil) 40-50 cm	S	Aug 24/07			X			X			X			X						X								2

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPH → C_6 - C_{32}		

*** = Metals specification**

Total As Cd, Cr, Co, Cu,
Pb Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004635

Company	Nunaha	Tests required by:	
Contact	Alain Carriere	Project name :	
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (or C_6-C_{32})	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)			# of Jars	
F4-6 (Soil) 0-15 cm	S	Aug 25/07			X			X			X			X						X							3	3
F4-6 (Soil) 40-50 cm					X			X			X			X						X							3	3
F4-7 (Soil) 0-15 cm					X			X			X			X						X							3	3
F4-7 (Soil) 40-50 cm					X			X			X			X						X							3	3
F4-8 (Soil) 0-15 cm					X			X			X			X						X							3	3
F4-8 (Soil) 40-50 cm					X			X			X			X						X							3	3
F4-25 (Soil) 0-15 cm					X			X			X			X						X							2	2
F4-25 (Soil) 40-50 cm	↓	↓			X			X			X			X						X							2	2

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPH → C_6 - C_{32}		

*** = Metals specification**

Total As, Cd, Cr, Co, Cu,
Pb, Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004651

Company	Nunatta		
Contact	Alain Cavrient		
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Tests required by:

Project name :

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (or C_6-C_{32})	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)				
QA/QC-1	S	Aug 22/07			X			X			X			X						X								
QA/QC-2		Aug 22/07			X			X			X			X						X								
QA/QC-3		Aug 22/07			X			X			X			X						X								
QA/QC-4		Aug 24/07			X			X			X			X						X								
QA/QC-5		Aug 24/07			X			X			X			X						X								
QA/QC-6		Aug 25/07			X			X			X			X						X								
QA/QC-7		Aug 25/07			X			X			X			X						X								
QA/QC-1	GW	Aug 24/07			X			X			X			X						X								
QA/QC-2	GW	Aug 24/07			X			X			X			X						X								

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPH → C_6 - C_{32}		

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb, Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004654

Company	Nunatta	Tests required by:	
Contact	Alain Carriere	Project name :	
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (C_6-C_{32})	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)				# of Jars
F4-3 (soil) 0-15cm	S	Aug 22/07			X			X			X			X						X								2
F4-3 (soil) 40-50cm					X			X			X			X						X								2
F4-4 (soil) 0-15cm					X			X			X			X						X								2
F4-4 (soil) 40-50cm					X			X			X			X						X								2
F4-5 (soil) 0-15cm					X			X			X			X						X								2
F4-5 (soil) 40-50cm					X			X			X			X						X								2
F4-18 (soil) 0-15cm					X			X			NO			NO						NO								2
F4-18 (soil) 40-50cm					X			X			NO			NO						NO								2
F4-19 (soil) 0-15cm					X			X			NO			NO						NO								2
F4-19 (soil) 40-50cm					X			X			NO			NO						NO								2
F4-20 (soil) 0-15cm					X			X			NO			NO						NO								2

Sampling site	Comments:	In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.
TPA → C_6 - C_{32}		

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb, Ni, Zn

Seq. number	Relinquished:	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

BODYCOTE Materials Testing Canada Inc. / Work Order

121 Boul. Hymus, Pointe-Claire, Qc, H9R 1E6
Tél: (514) 697-3273, Fax: (514) 697-2090

004652

Company	Nunatta		
Contact	Alain Carriere		
Address			
City	Iqaluit	Postal code	
P.O. Number		Quotation	
Collected by	R. Fletcher		
Phone		Fax	

Tests required by:

Project name :

Type (A=absorbant, S=soil, W=water, PW=potable water, GW=groundwater, SW=surface water WW =waste water, O=oil, L=leachate, SE=sediment, SG=sludge, SB=Swab)

Sample identification	Type	Date sampled	Total O & G (Gravimetric)	Mineral O & G (Gravimetric)	Petroleum Hydr. C_{10}-C_{50} (C6-C32)	MAH	THH	BTEX	PAH	Phenols GC-MS	PCB Aroclor	PCB Congeners	Metals (Cd, Cr, Cu, Ni, Pb, Zn)	Metals (Specify) *	Phenols Colorimetry	Phenols pulp and paper	BOD5	COD	SS	Mercury (Total)	TPH Ontario	C.U.M. Reg. 87 Art. 10	Alberta MUST	Others (specify)				# of jars
F4-20 (Soil) 40-50cm	S	Aug 22/07			X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-21 (Soil) 0-15cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-21 (Soil) 40-50cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-22 (Soil) 0-15cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-22 (Soil) 40-50 cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-17 (Soil) 0-15cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-17 (Soil) 40-50cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-23 (Soil) 0-15 cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-23 (Soil) 40-50 cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-24 (Soil) 0-15 cm					X			X			~~X~~ No			~~X~~ No						~~X~~ No								2
F4-24 (Soil) 40-50 cm	↓	↓			X			X			~~X~~ No			~~X~~ No						~~X~~ No								2

Sampling site	Comments:	
TPH - C_6 - C_{32}		In order to improve our service and avoid potential analytical problems, please provide all information relevant to the samples & analyses requested.

*** = Metals specification**

Total As, Cd, Cr, Co, Cu, Pb, Ni, Zn
NO

Seq. number	Relinquished: [illegible]	Accepted by:	Date:
	Relinquished:	Accepted by:	Date:

Your P.O. #: CT-020848

Attention: David Cajolet
Bodycote essais de matériaux Canada inc.
Division Pointe-Claire
121 Hymus Boulevard
POINTE-CLAIRE, PQ
Canada H9R 1E6

Report Date: 2007/09/05

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A731333
Received: 2007/08/30, 11:00

Sample Matrix: GROUND WATER
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Disposal Charges	13	N/A	2007/08/30		
PCB	13	2007/08/30	2007/08/31	STL SOP-00160/1	GC/ECD

Encryption Key

Jean-Pascal Dionne
05 Sep 2007 17:56:56 -04:00

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

JEAN-PASCAL DIONNE, B.Sc., Chemist, Project manager
Email: Jean-Pascal.Dionne@maxxamanalytics.com
Phone# (514) 448-9001 Ext:251

==========

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. SCC and CAEAL have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: A731333
Report Date: 2007/09/05

Bodycote essais de matériaux Canada inc.
Client Project #:
Project name:
Your P.O. #: CT-020848
Sampler Initials:

PCB (GROUND WATER)

Maxxam ID		C85147	C85158	C85159	C85160		
Sampling Date		2007/08/24	2007/08/24	2007/08/23	2007/08/23		
	Units	**1347607**	**1347608**	**1347635**	**1347636**	**RDL**	**QC Batch**
PCB							
Aroclor 1242	ug/L	ND	ND	ND	ND	0.10	447493
Aroclor 1248	ug/L	ND	ND	ND	ND	0.10	447493
Aroclor 1254	ug/L	ND	ND	ND	ND	0.10	447493
Aroclor 1260	ug/L	ND	ND	ND	ND	0.10	447493
Total PCB	ug/L	ND	ND	ND	ND	N/A	447493
Surrogate Recovery (%)							
Decachlorobiphenyl	%	94	97	105	88	N/A	447493

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

Maxxam ID		C85161	C85162	C85163		C85164		
Sampling Date		2007/08/23	2007/08/23	2007/08/23		2007/08/24		
	Units	**1347637**	**1347638**	**1347639**	**QC Batch**	**1347640**	**RDL**	**QC Batch**
PCB								
Aroclor 1242	ug/L	ND	ND	ND	447493	ND	0.10	447494
Aroclor 1248	ug/L	ND	ND	ND	447493	ND	0.10	447494
Aroclor 1254	ug/L	ND	ND	ND	447493	ND	0.10	447494
Aroclor 1260	ug/L	ND	ND	ND	447493	ND	0.10	447494
Total PCB	ug/L	ND	ND	ND	447493	ND	N/A	447494
Surrogate Recovery (%)								
Decachlorobiphenyl	%	91	84	97	447493	103	N/A	447494

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

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: A731333
Report Date: 2007/09/05

Bodycote essais de matériaux Canada inc.
Client Project #:
Project name:
Your P.O. #: CT-020848
Sampler Initials:

PCB (GROUND WATER)

Maxxam ID		C85165	C85166	C85167	C85168		
Sampling Date		2007/08/24	2007/08/24	2007/08/24	2007/08/24		
	Units	**1347641**	**1347642**	**1347643**	**1347644**	**RDL**	**QC Batch**
PCB							
Aroclor 1242	ug/L	ND	ND	ND	ND	0.10	447494
Aroclor 1248	ug/L	ND	ND	ND	ND	0.10	447494
Aroclor 1254	ug/L	ND	ND	ND	ND	0.10	447494
Aroclor 1260	ug/L	ND	ND	ND	ND	0.10	447494
Total PCB	ug/L	ND	ND	ND	ND	N/A	447494
Surrogate Recovery (%)							
Decachlorobiphenyl	%	97	109	101	93	N/A	447494

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

Maxxam ID		C85169		
Sampling Date		2007/08/24		
	Units	**1347645**	**RDL**	**QC Batch**
PCB				
Aroclor 1242	ug/L	ND	0.10	447494
Aroclor 1248	ug/L	ND	0.10	447494
Aroclor 1254	ug/L	ND	0.10	447494
Aroclor 1260	ug/L	ND	0.10	447494
Total PCB	ug/L	ND	N/A	447494
Surrogate Recovery (%)				
Decachlorobiphenyl	%	111	N/A	447494

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

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: A731333
Report Date: 2007/09/05

Bodycote essais de matériaux Canada inc.
Client Project #:
Project name:
Your P.O. #: CT-020848
Sampler Initials:

GENERAL COMMENTS

Condition of sample(s) upon receipt: GOOD

PCB (GROUND WATER)

Please note that the results have not been corrected for the spike recovery and sample surrogate recoveries. Please note that the results have been corrected for the laboratory blank values.

Results relate only to the items tested.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Bodycote essais de matériaux Canada inc.
Attention: David Cajolet
Client Project #:
P.O. #: CT-020848
Project name:

Quality Assurance Report

Maxxam Job Number: A731333

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units
447493 NFA	SPIKE	Decachlorobiphenyl	2007/08/31		103	%
		Aroclor 1242	2007/08/31		76	%
		Aroclor 1260	2007/08/31		94	%
	BLANK	Decachlorobiphenyl	2007/08/31		92	%
		Aroclor 1242	2007/08/31	ND, RDL=0.10		ug/L
		Aroclor 1248	2007/08/31	ND, RDL=0.10		ug/L
		Aroclor 1254	2007/08/31	ND, RDL=0.10		ug/L
		Aroclor 1260	2007/08/31	ND, RDL=0.10		ug/L
		Total PCB	2007/08/31	ND		ug/L
447494 KC1	SPIKE	Decachlorobiphenyl	2007/08/31		93	%
		Aroclor 1242	2007/08/31		73	%
		Aroclor 1260	2007/08/31		85	%
	BLANK	Decachlorobiphenyl	2007/08/31		104	%
		Aroclor 1242	2007/08/31	ND, RDL=0.10		ug/L
		Aroclor 1248	2007/08/31	ND, RDL=0.10		ug/L
		Aroclor 1254	2007/08/31	ND, RDL=0.10		ug/L
		Aroclor 1260	2007/08/31	ND, RDL=0.10		ug/L
		Total PCB	2007/08/31	ND		ug/L

ND = Not detected
RDL = Reportable Detection Limit
SPIKE = Fortified sample

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tél. : (514) 448-9001 Télécopieur : (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Validation Signature Page

Maxxam Job #: A731333

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

CHIMISTE Caroline Martin 2006-093 Québec

CAROLINE MARTIN,

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ANNEX 1-B INDEPENDENT LAB ANALYSIS - MAXXAM

Your Project #: 1213-0701/ FOX-4 CAPE HOOPER
Site: BAFFIN ISLAND, NUNAVUT
Your C.O.C. #: 00516664

Attention: Tanmay Praharaj
Franz Environmental Inc
329 Churchill Ave N
Suite 200
Ottawa, ON
K1Z 5B8

Report Date: 2007/09/06

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A792849
Received: 2007/08/29, 09:31

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Soil	7	2007/08/31	2007/09/02	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Soil	7	2007/09/01	2007/09/03	CAM SOP-00316	CCME CWS
Mercury in Soil by CVAA	7	2007/09/04	2007/09/05	CAM SOP-00453	EPA 7470
Total Metals in Soil by Axial ICP-AES	7	2007/09/05	2007/09/04	Ont SOP-0072	EPA SW-846-6010C
MOISTURE	7	N/A	2007/08/31	Ont SOP-0114	MOE HANDBOOK(1983)
Polychlorinated Biphenyl in Soil	7	2007/08/31	2007/08/31	CAM SOP-00307	EPA 8082

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Petroleum Hydro. CCME F1 & BTEX in Water	2	N/A	2007/09/02	CAM SOP-00315	CCME CWS
Petroleum Hydrocarbons F2-F4 in Water	2	2007/09/02	2007/09/02	CAM SOP-00316	CCME Hydrocarbons
Total Metals Analysis by ICPMS	2	N/A	2007/09/04	CAM SOP-00447	EPA 6020
Polychlorinated Biphenyl in Water	2	2007/08/30	2007/09/04	CAM SOP-00307	EPA 8081 modified

* 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.

CHRISTINE MCLEAN, Project Manager
Email: christine.mclean@maxxamanalytics.com
Phone# (905) 817-5700

==========

Your Project #: 1213-0701/ FOX-4 CAPE HOOPER
Site: BAFFIN ISLAND, NUNAVUT
Your C.O.C. #: 00516664

Attention: Tanmay Praharaj
Franz Environmental Inc
329 Churchill Ave N
Suite 200
Ottawa, ON
K1Z 5B8

Report Date: 2007/09/06

CERTIFICATE OF ANALYSIS

-2-

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For Service Group specific validation please refer to the Validation Signature Page

Total cover pages: 2

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		U33976		U33977	U33977		
Sampling Date		2007/08/22		2007/08/22	2007/08/22		
COC Number		00516664		00516664	00516664		
	Units	**F4-1 (SOIL) 0-15CM**	**RDL**	**F4-5 (SOIL) 40-50CM**	**F4-5 (SOIL) 40-50CM Lab-Dup**	**RDL**	**QC Batch**
INORGANICS							
Moisture	%	9.3	0.2	17	18	0.2	1348959
F1 PHC and BTEX							
Benzene	ug/g	ND	0.4	ND		0.02	1349505
Toluene	ug/g	ND	0.4	ND		0.02	1349505
Ethylbenzene	ug/g	ND	0.4	ND		0.02	1349505
o-Xylene	ug/g	ND	0.4	0.03		0.02	1349505
p+m-Xylene	ug/g	ND	0.8	ND		0.04	1349505
Total Xylenes	ug/g	ND	0.8	ND		0.04	1349505
F1 (C6-C10)	ug/g	530	200	160		10	1349505
F1 (C6-C10) - BTEX	ug/g	530	200	160		10	1349505
F2-F4 PHC							
F2 (C10-C16 Hydrocarbons)	ug/g	8300	10	11000		10	1350375
F3 (C16-C34 Hydrocarbons)	ug/g	380	10	1500		10	1350375
F4 (C34-C50 Hydrocarbons)	ug/g	ND	10	110		10	1350375
Reached Baseline at C50	ug/g	Yes		Yes			1350375
Diesel (C11-C32)	ug/g	6700	10	11000		10	1350375
Diesel (C10-C24)	ug/g	8500	10	12000		10	1350375
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	99		89			1349505
4-Bromofluorobenzene	%	99		118			1349505
D10-Ethylbenzene	%	108		93			1349505
D4-1,2-Dichloroethane	%	102		87			1349505
o-Terphenyl	%	117		111			1350375

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

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		U33978		U33979	U33980		
Sampling Date		2007/08/22		2007/08/24	2007/08/24		
COC Number		00516664		00516664	00516664		
	Units	**F4-21 (SOIL) 40-50CM**	**RDL**	**MW-13 (SOIL) 0-15CM**	**MW-14 (SOIL) 0-15CM**	**RDL**	**QC Batch**
INORGANICS							
Moisture	%	16	0.2	15	8.4	0.2	1348959
F1 PHC and BTEX							
Benzene	ug/g	ND	0.4	ND	ND	0.02	1349505
Toluene	ug/g	ND	0.4	ND	ND	0.02	1349505
Ethylbenzene	ug/g	ND	0.4	ND	ND	0.02	1349505
o-Xylene	ug/g	1.2	0.4	ND	ND	0.02	1349505
p+m-Xylene	ug/g	1.4	0.8	ND	ND	0.04	1349505
Total Xylenes	ug/g	2.6	0.8	ND	ND	0.04	1349505
F1 (C6-C10)	ug/g	750	200	ND	ND	10	1349505
F1 (C6-C10) - BTEX	ug/g	750	200	ND	ND	10	1349505
F2-F4 PHC							
F2 (C10-C16 Hydrocarbons)	ug/g	12000	10	ND	86	10	1350375
F3 (C16-C34 Hydrocarbons)	ug/g	820	10	17	300	10	1350375
F4 (C34-C50 Hydrocarbons)	ug/g	66	10	ND	32	10	1350375
Reached Baseline at C50	ug/g	Yes		Yes	Yes		1350375
Diesel (C11-C32)	ug/g	10000	10	15	360	10	1350375
Diesel (C10-C24)	ug/g	12000	10	11	250	10	1350375
Surrogate Recovery (%)							
1,4-Difluorobenzene	%	100		100	100		1349505
4-Bromofluorobenzene	%	101		99	100		1349505
D10-Ethylbenzene	%	121		100	90		1349505
D4-1,2-Dichloroethane	%	100		100	101		1349505
o-Terphenyl	%	113		108	111		1350375

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

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

O'REG 153 PETROLEUM HYDROCARBONS (SOIL)

Maxxam ID		U33981	U33982		
Sampling Date		2007/08/25	2007/08/25		
COC Number		00516664	00516664		
	Units	**F4-6 (SOIL) 0-15CM**	**F4-7 (SOIL) 0-15CM**	**RDL**	**QC Batch**
INORGANICS					
Moisture	%	8.0	10	0.2	1348959
F1 PHC and BTEX					
Benzene	ug/g	ND	ND	0.02	1349505
Toluene	ug/g	ND	ND	0.02	1349505
Ethylbenzene	ug/g	ND	ND	0.02	1349505
o-Xylene	ug/g	ND	ND	0.02	1349505
p+m-Xylene	ug/g	ND	ND	0.04	1349505
Total Xylenes	ug/g	ND	ND	0.04	1349505
F1 (C6-C10)	ug/g	ND	ND	10	1349505
F1 (C6-C10) - BTEX	ug/g	ND	ND	10	1349505
F2-F4 PHC					
F2 (C10-C16 Hydrocarbons)	ug/g	ND	ND	10	1350375
F3 (C16-C34 Hydrocarbons)	ug/g	ND	ND	10	1350375
F4 (C34-C50 Hydrocarbons)	ug/g	ND	ND	10	1350375
Reached Baseline at C50	ug/g	Yes	Yes		1350375
Diesel (C11-C32)	ug/g	ND	ND	10	1350375
Diesel (C10-C24)	ug/g	ND	ND	10	1350375
Surrogate Recovery (%)					
1,4-Difluorobenzene	%	102	101		1349505
4-Bromofluorobenzene	%	100	100		1349505
D10-Ethylbenzene	%	91	89		1349505
D4-1,2-Dichloroethane	%	103	103		1349505
o-Terphenyl	%	93	107		1350375

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

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

OREG 153 PETROLEUM HYDROCARBONS (WATER)

Maxxam ID		U33983	U33984	U33984		
Sampling Date		2007/08/24	2007/08/24	2007/08/24		
COC Number		00516664	00516664	00516664		
	Units	**MW-10**	**MW-15**	**MW-15 Lab-Dup**	**RDL**	**QC Batch**
F1 PHC and BTEX						
Benzene	ug/L	ND	ND	ND	0.2	1350296
Toluene	ug/L	ND	ND	ND	0.2	1350296
Ethylbenzene	ug/L	ND	ND	ND	0.2	1350296
o-Xylene	ug/L	ND	ND	ND	0.2	1350296
p+m-Xylene	ug/L	ND	ND	ND	0.4	1350296
Total Xylenes	ug/L	ND	ND	ND	0.4	1350296
F1 (C6-C10)	ug/L	ND	ND	ND	100	1350296
F1 (C6-C10) - BTEX	ug/L	ND	ND	ND	100	1350296
F2-F4 PHC						
F2 (C10-C16 Hydrocarbons)	ug/L	ND	ND		100	1350537
F3 (C16-C34 Hydrocarbons)	ug/L	ND	ND		100	1350537
F4 (C34-C50 Hydrocarbons)	ug/L	ND	ND		100	1350537
Reached Baseline at C50	ug/L	Yes	Yes			1350537
Diesel (C10-C24)	ug/L	ND	ND		100	1350537
Diesel (C11-C32)	ug/L	ND	ND		100	1350537
Surrogate Recovery (%)						
1,4-Difluorobenzene	%	100	101	100		1350296
4-Bromofluorobenzene	%	99	97	98		1350296
D10-Ethylbenzene	%	100	103	103		1350296
D4-1,2-Dichloroethane	%	102	104	104		1350296
o-Terphenyl	%	116	117			1350537

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

6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: 905-817-5700 Toll free:800-563-6266 Fax: 905-817-5777

Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		U33976	U33976	U33977	U33978		
Sampling Date		2007/08/22	2007/08/22	2007/08/22	2007/08/22		
COC Number		00516664	00516664	00516664	00516664		
	Units	**F4-1 (SOIL) 0-15CM**	**F4-1 (SOIL) 0-15CM Lab-Dup**	**F4-5 (SOIL) 40-50CM**	**F4-21 (SOIL) 40-50CM**	**RDL**	**QC Batch**
METALS							
Acid Extractable Arsenic (As)	ug/g	17	17	18	14	1	1351824
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	0.3	ND	0.3	1351824
Acid Extractable Chromium (Cr)	ug/g	39	39	44	31	0.5	1351824
Acid Extractable Cobalt (Co)	ug/g	8.2	8.2	7.6	4.1	0.5	1351824
Acid Extractable Copper (Cu)	ug/g	27	27	38	18	0.5	1351824
Acid Extractable Lead (Pb)	ug/g	4	4	9	8	1	1351824
Acid Extractable Mercury (Hg)	ug/g	ND		ND	ND	0.05	1351583
Acid Extractable Nickel (Ni)	ug/g	29	29	31	14	0.5	1351824
Acid Extractable Zinc (Zn)	ug/g	37	37	41	27	3	1351824

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

Maxxam ID		U33979	U33980	U33981	U33982		
Sampling Date		2007/08/24	2007/08/24	2007/08/25	2007/08/25		
COC Number		00516664	00516664	00516664	00516664		
	Units	**MW-13 (SOIL) 0-15CM**	**MW-14 (SOIL) 0-15CM**	**F4-6 (SOIL) 0-15CM**	**F4-7 (SOIL) 0-15CM**	**RDL**	**QC Batch**
METALS							
Acid Extractable Arsenic (As)	ug/g	9	47	10	24	1	1351824
Acid Extractable Cadmium (Cd)	ug/g	ND	ND	ND	ND	0.3	1351824
Acid Extractable Chromium (Cr)	ug/g	28	26	21	22	0.5	1351824
Acid Extractable Cobalt (Co)	ug/g	3.9	3.5	2.5	2.4	0.5	1351824
Acid Extractable Copper (Cu)	ug/g	15	14	9.1	7.2	0.5	1351824
Acid Extractable Lead (Pb)	ug/g	5	8	2	2	1	1351824
Acid Extractable Mercury (Hg)	ug/g	ND	ND	ND	ND	0.05	1351583
Acid Extractable Nickel (Ni)	ug/g	13	11	7.3	7.2	0.5	1351824
Acid Extractable Zinc (Zn)	ug/g	26	24	16	16	3	1351824

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

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Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		U33976		U33977		
Sampling Date		2007/08/22		2007/08/22		
COC Number		00516664		00516664		
	Units	**F4-1 (SOIL) 0-15CM**	**RDL**	**F4-5 (SOIL) 40-50CM**	**RDL**	**QC Batch**
PCBs						
Aroclor 1262	ug/g	ND	0.01	ND	0.01	1348991
Aroclor 1016	ug/g	ND	0.01	ND	0.01	1348991
Aroclor 1221	ug/g	ND	0.01	ND	0.01	1348991
Aroclor 1232	ug/g	ND	0.01	ND	0.01	1348991
Aroclor 1242	ug/g	ND	0.01	ND	0.01	1348991
Aroclor 1248	ug/g	ND	0.01	ND	0.02	1348991
Aroclor 1254	ug/g	0.01	0.01	0.05	0.01	1348991
Aroclor 1260	ug/g	ND	0.01	ND	0.01	1348991
Aroclor 1268	ug/g	ND	0.01	ND	0.01	1348991
Total PCB	ug/g	0.01	0.01	0.05	0.02	1348991
Surrogate Recovery (%)						
2,4,5,6-Tetrachloro-m-xylene	%	80		82		1348991
Decachlorobiphenyl	%	124		120		1348991

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

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Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		U33978	U33979	U33979	U33980		
Sampling Date		2007/08/22	2007/08/24	2007/08/24	2007/08/24		
COC Number		00516664	00516664	00516664	00516664		
	Units	**F4-21 (SOIL) 40-50CM**	**MW-13 (SOIL) 0-15CM**	**MW-13 (SOIL) 0-15CM Lab-Dup**	**MW-14 (SOIL) 0-15CM**	**RDL**	**QC Batch**
PCBs							
Aroclor 1262	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1016	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1221	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1232	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1242	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1248	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1254	ug/g	0.03	0.02	0.01	0.02	0.01	1348991
Aroclor 1260	ug/g	ND	ND	ND	ND	0.01	1348991
Aroclor 1268	ug/g	ND	ND	ND	ND	0.01	1348991
Total PCB	ug/g	0.03	0.02	0.01	0.02	0.01	1348991
Surrogate Recovery (%)							
2,4,5,6-Tetrachloro-m-xylene	%	77	69	72	76		1348991
Decachlorobiphenyl	%	126	100	101	104		1348991

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

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Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		U33981	U33982		
Sampling Date		2007/08/25	2007/08/25		
COC Number		00516664	00516664		
	Units	**F4-6 (SOIL) 0-15CM**	**F4-7 (SOIL) 0-15CM**	**RDL**	**QC Batch**
PCBs					
Aroclor 1262	ug/g	ND	ND	0.01	1348991
Aroclor 1016	ug/g	ND	ND	0.01	1348991
Aroclor 1221	ug/g	ND	ND	0.01	1348991
Aroclor 1232	ug/g	ND	ND	0.01	1348991
Aroclor 1242	ug/g	ND	ND	0.01	1348991
Aroclor 1248	ug/g	ND	ND	0.01	1348991
Aroclor 1254	ug/g	ND	ND	0.01	1348991
Aroclor 1260	ug/g	ND	ND	0.01	1348991
Aroclor 1268	ug/g	ND	ND	0.01	1348991
Total PCB	ug/g	ND	ND	0.01	1348991
Surrogate Recovery (%)					
2,4,5,6-Tetrachloro-m-xylene	%	89	85		1348991
Decachlorobiphenyl	%	95	121		1348991

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

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Maxxam Job #: A792849
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Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		U33983	U33984		
Sampling Date		2007/08/24	2007/08/24		
COC Number		00516664	00516664		
	Units	**MW-10**	**MW-15**	**RDL**	**QC Batch**
METALS					
Total Arsenic (As)	ug/L	3	1	1	1349663
Total Cadmium (Cd)	ug/L	0.2	ND	0.1	1349663
Total Chromium (Cr)	ug/L	79	ND	5	1349663
Total Cobalt (Co)	ug/L	1.1	1.4	0.5	1349663
Total Copper (Cu)	ug/L	5	6	1	1349663
Total Lead (Pb)	ug/L	6.3	1.8	0.5	1349663
Total Nickel (Ni)	ug/L	22	8	1	1349663
Total Zinc (Zn)	ug/L	620	170	5	1349663

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

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Maxxam Job #: A792849
Report Date: 2007/09/06

Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		U33983	U33984		
Sampling Date		2007/08/24	2007/08/24		
COC Number		00516664	00516664		
	Units	**MW-10**	**MW-15**	**RDL**	**QC Batch**
PCBs					
Aroclor 1016	ug/L	ND	ND	0.05	1347846
Aroclor 1221	ug/L	ND	ND	0.05	1347846
Aroclor 1232	ug/L	ND	ND	0.05	1347846
Aroclor 1242	ug/L	ND	ND	0.05	1347846
Aroclor 1248	ug/L	ND	ND	0.05	1347846
Aroclor 1254	ug/L	ND	ND	0.05	1347846
Aroclor 1260	ug/L	ND	ND	0.05	1347846
Aroclor 1262	ug/L	ND	ND	0.05	1347846
Aroclor 1268	ug/L	ND	ND	0.05	1347846
Total PCB	ug/L	ND	ND	0.05	1347846
Surrogate Recovery (%)					
2,4,5,6-Tetrachloro-m-xylene	%	35	30		1347846
Decachlorobiphenyl	%	83	54		1347846

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

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Maxxam Job #: A792849
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Franz Environmental Inc
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
Project name: BAFFIN ISLAND, NUNAVUT
Sampler Initials:

Package 1	8.0°C

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

GENERAL COMMENTS

Sample U33976-01: F1/BTEX: Sample was diluted due to high concentration of target compounds. The DLs were adjusted accordingly.

Sample U33977-01: PCB analysis: Due to matrix interferences sample required dilution. DLs were adjusted accordingly

Sample U33978-01: F1/BTEX: Sample was diluted due to high concentration of target compounds. The DLs were adjusted accordingly.

Results relate only to the items tested.

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Franz Environmental Inc
Attention: Tanmay Praharaj
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
P.O. #:
Project name: BAFFIN ISLAND, NUNAVUT

Quality Assurance Report

Maxxam Job Number: TA792849

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1347846 LGA	MATRIX SPIKE	2,4,5,6-Tetrachloro-m-xylene	2007/09/04		51	%	30 - 150
		Decachlorobiphenyl	2007/09/04		95	%	29 - 139
		Aroclor 1260	2007/09/04		99	%	30 - 130
		Total PCB	2007/09/04		99	%	30 - 130
	Spiked Blank	2,4,5,6-Tetrachloro-m-xylene	2007/09/04		80	%	30 - 150
		Decachlorobiphenyl	2007/09/04		96	%	29 - 139
		Aroclor 1260	2007/09/04		98	%	30 - 130
		Total PCB	2007/09/04		98	%	30 - 130
	Method Blank	2,4,5,6-Tetrachloro-m-xylene	2007/09/04		81	%	30 - 150
		Decachlorobiphenyl	2007/09/04		79	%	29 - 139
		Aroclor 1016	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1221	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1232	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1242	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1248	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1254	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1260	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1262	2007/09/04	ND, RDL=0.05		ug/L	
		Aroclor 1268	2007/09/04	ND, RDL=0.05		ug/L	
		Total PCB	2007/09/04	ND, RDL=0.05		ug/L	
	RPD	Decachlorobiphenyl	2007/09/04	19.6		%	N/A
		Aroclor 1016	2007/09/04	NC		%	40
		Aroclor 1221	2007/09/04	NC		%	40
		Aroclor 1232	2007/09/04	NC		%	40
		Aroclor 1242	2007/09/04	NC		%	40
		Aroclor 1248	2007/09/04	NC		%	40
		Aroclor 1254	2007/09/04	NC		%	40
		Aroclor 1260	2007/09/04	NC		%	40
		Aroclor 1262	2007/09/04	NC		%	40
		Aroclor 1268	2007/09/04	NC		%	40
		Total PCB	2007/09/04	NC		%	40
1348959 FOT	RPD [U33977-01]	Moisture	2007/08/31	3.5		%	50
1348991 JZ	MATRIX SPIKE						
	[U33979-02]	2,4,5,6-Tetrachloro-m-xylene	2007/08/31		87	%	40 - 130
		Decachlorobiphenyl	2007/08/31		110	%	40 - 130
		Aroclor 1260	2007/08/31		99	%	30 - 130
		Total PCB	2007/08/31		99	%	30 - 130
	Spiked Blank	2,4,5,6-Tetrachloro-m-xylene	2007/08/31		81	%	40 - 130
		Decachlorobiphenyl	2007/08/31		98	%	40 - 130
		Aroclor 1260	2007/08/31		87	%	30 - 130
		Total PCB	2007/08/31		87	%	30 - 130
	Method Blank	2,4,5,6-Tetrachloro-m-xylene	2007/08/31		79	%	40 - 130
		Decachlorobiphenyl	2007/08/31		99	%	40 - 130
		Aroclor 1262	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1016	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1221	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1232	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1242	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1248	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1254	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1260	2007/08/31	ND, RDL=0.01		ug/g	
		Aroclor 1268	2007/08/31	ND, RDL=0.01		ug/g	
		Total PCB	2007/08/31	ND, RDL=0.01		ug/g	
	RPD [U33979-02]	Aroclor 1262	2007/08/31	NC		%	50
		Aroclor 1016	2007/08/31	NC		%	50

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Franz Environmental Inc
Attention: Tanmay Praharaj
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
P.O. #:
Project name: BAFFIN ISLAND, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: TA792849

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1348991	JZ	RPD [U33979-02]	Aroclor 1221	2007/08/31	NC		%	50
			Aroclor 1232	2007/08/31	NC		%	50
			Aroclor 1242	2007/08/31	NC		%	50
			Aroclor 1248	2007/08/31	NC		%	50
			Aroclor 1254	2007/08/31	NC		%	50
			Aroclor 1260	2007/08/31	NC		%	50
			Aroclor 1268	2007/08/31	NC		%	50
			Total PCB	2007/08/31	NC		%	50
1349505	ABD	MATRIX SPIKE	1,4-Difluorobenzene	2007/09/02		99	%	60 - 140
			4-Bromofluorobenzene	2007/09/02		98	%	60 - 140
			D10-Ethylbenzene	2007/09/02		87	%	30 - 130
			D4-1,2-Dichloroethane	2007/09/02		105	%	60 - 140
			Benzene	2007/09/02		81	%	60 - 140
			Toluene	2007/09/02		77	%	60 - 140
			Ethylbenzene	2007/09/02		77	%	60 - 140
			o-Xylene	2007/09/02		80	%	60 - 140
			p+m-Xylene	2007/09/02		80	%	60 - 140
			F1 (C6-C10)	2007/09/02		83	%	60 - 140
		Spiked Blank	1,4-Difluorobenzene	2007/09/02		101	%	60 - 140
			4-Bromofluorobenzene	2007/09/02		98	%	60 - 140
			D10-Ethylbenzene	2007/09/02		100	%	30 - 130
			D4-1,2-Dichloroethane	2007/09/02		104	%	60 - 140
			Benzene	2007/09/02		85	%	60 - 140
			Toluene	2007/09/02		80	%	60 - 140
			Ethylbenzene	2007/09/02		80	%	60 - 140
			o-Xylene	2007/09/02		82	%	60 - 140
			p+m-Xylene	2007/09/02		81	%	60 - 140
			F1 (C6-C10)	2007/09/02		96	%	60 - 140
		Method Blank	1,4-Difluorobenzene	2007/09/02		101	%	60 - 140
			4-Bromofluorobenzene	2007/09/02		98	%	60 - 140
			D10-Ethylbenzene	2007/09/02		102	%	30 - 130
			D4-1,2-Dichloroethane	2007/09/02		102	%	60 - 140
			Benzene	2007/09/02	ND, RDL=0.02		ug/g	
			Toluene	2007/09/02	ND, RDL=0.02		ug/g	
			Ethylbenzene	2007/09/02	ND, RDL=0.02		ug/g	
			o-Xylene	2007/09/02	ND, RDL=0.02		ug/g	
			p+m-Xylene	2007/09/02	ND, RDL=0.04		ug/g	
			Total Xylenes	2007/09/02	ND, RDL=0.04		ug/g	
			F1 (C6-C10)	2007/09/02	ND, RDL=10		ug/g	
			F1 (C6-C10) - BTEX	2007/09/02	ND, RDL=10		ug/g	
		RPD	Benzene	2007/09/02	NC		%	50
			Toluene	2007/09/02	NC		%	50
			Ethylbenzene	2007/09/02	NC		%	50
			o-Xylene	2007/09/02	NC		%	50
			p+m-Xylene	2007/09/02	NC		%	50
			Total Xylenes	2007/09/02	NC		%	50
			F1 (C6-C10)	2007/09/02	NC		%	50
			F1 (C6-C10) - BTEX	2007/09/02	NC		%	50
1349663	JBW	MATRIX SPIKE	Total Arsenic (As)	2007/09/04		101	%	80 - 120
			Total Cadmium (Cd)	2007/09/04		98	%	80 - 120
			Total Chromium (Cr)	2007/09/04		99	%	80 - 120
			Total Cobalt (Co)	2007/09/04		98	%	80 - 120
			Total Copper (Cu)	2007/09/04		94	%	80 - 120
			Total Lead (Pb)	2007/09/04		96	%	80 - 120
			Total Nickel (Ni)	2007/09/04		96	%	80 - 120

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Franz Environmental Inc
Attention: Tanmay Praharaj
Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
P.O. #:
Project name: BAFFIN ISLAND, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: TA792849

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1349663	JBW	MATRIX SPIKE	Total Zinc (Zn)	2007/09/04		96	%	80 - 120
		Spiked Blank	Total Arsenic (As)	2007/09/04		106	%	86 - 119
			Total Cadmium (Cd)	2007/09/04		104	%	85 - 116
			Total Chromium (Cr)	2007/09/04		102	%	80 - 120
			Total Cobalt (Co)	2007/09/04		104	%	82 - 117
			Total Copper (Cu)	2007/09/04		101	%	80 - 117
			Total Lead (Pb)	2007/09/04		103	%	80 - 120
			Total Nickel (Ni)	2007/09/04		102	%	81 - 117
			Total Zinc (Zn)	2007/09/04		102	%	80 - 120
		Method Blank	Total Arsenic (As)	2007/09/04	ND, RDL=1		ug/L	
			Total Cadmium (Cd)	2007/09/04	ND, RDL=0.1		ug/L	
			Total Chromium (Cr)	2007/09/04	ND, RDL=5		ug/L	
			Total Cobalt (Co)	2007/09/04	ND, RDL=0.5		ug/L	
			Total Copper (Cu)	2007/09/04	ND, RDL=1		ug/L	
			Total Lead (Pb)	2007/09/04	ND, RDL=0.5		ug/L	
			Total Nickel (Ni)	2007/09/04	ND, RDL=1		ug/L	
			Total Zinc (Zn)	2007/09/04	ND, RDL=5		ug/L	
		RPD	Total Copper (Cu)	2007/09/04	NC		%	25
1350296	LRA	MATRIX SPIKE						
		[U33984-04]	1,4-Difluorobenzene	2007/09/02		99	%	70 - 130
			4-Bromofluorobenzene	2007/09/02		99	%	70 - 130
			D10-Ethylbenzene	2007/09/02		105	%	70 - 130
			D4-1,2-Dichloroethane	2007/09/02		104	%	70 - 130
			Benzene	2007/09/02		97	%	70 - 130
			Toluene	2007/09/02		100	%	70 - 130
			Ethylbenzene	2007/09/02		100	%	70 - 130
			o-Xylene	2007/09/02		103	%	70 - 130
			p+m-Xylene	2007/09/02		105	%	70 - 130
			F1 (C6-C10)	2007/09/02		99	%	70 - 130
		Spiked Blank	1,4-Difluorobenzene	2007/09/02		99	%	70 - 130
			4-Bromofluorobenzene	2007/09/02		99	%	70 - 130
			D10-Ethylbenzene	2007/09/02		99	%	70 - 130
			D4-1,2-Dichloroethane	2007/09/02		103	%	70 - 130
			Benzene	2007/09/02		101	%	70 - 130
			Toluene	2007/09/02		104	%	70 - 130
			Ethylbenzene	2007/09/02		106	%	70 - 130
			o-Xylene	2007/09/02		108	%	70 - 130
			p+m-Xylene	2007/09/02		111	%	70 - 130
			F1 (C6-C10)	2007/09/02		97	%	70 - 130
		Method Blank	1,4-Difluorobenzene	2007/09/02		100	%	70 - 130
			4-Bromofluorobenzene	2007/09/02		97	%	70 - 130
			D10-Ethylbenzene	2007/09/02		100	%	70 - 130
			D4-1,2-Dichloroethane	2007/09/02		103	%	70 - 130
			Benzene	2007/09/02	ND, RDL=0.2		ug/L	
			Toluene	2007/09/02	ND, RDL=0.2		ug/L	
			Ethylbenzene	2007/09/02	ND, RDL=0.2		ug/L	
			o-Xylene	2007/09/02	ND, RDL=0.2		ug/L	
			p+m-Xylene	2007/09/02	ND, RDL=0.4		ug/L	
			Total Xylenes	2007/09/02	ND, RDL=0.4		ug/L	
			F1 (C6-C10)	2007/09/02	ND, RDL=100		ug/L	
			F1 (C6-C10) - BTEX	2007/09/02	ND, RDL=100		ug/L	
		RPD [U33984-04]	Benzene	2007/09/02	NC		%	40
			Toluene	2007/09/02	NC		%	40
			Ethylbenzene	2007/09/02	NC		%	40
			o-Xylene	2007/09/02	NC		%	40

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Client Project #: 1213-0701/ FOX-4 CAPE HOOPER
P.O. #:
Project name: BAFFIN ISLAND, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: TA792849

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1350296	LRA	RPD [U33984-04]	p+m-Xylene	2007/09/02	NC		%	40
			Total Xylenes	2007/09/02	NC		%	40
			F1 (C6-C10)	2007/09/02	NC		%	40
			F1 (C6-C10) - BTEX	2007/09/02	NC		%	40
1350375	NCI	MATRIX SPIKE	o-Terphenyl	2007/09/03		97	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2007/09/03		89	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2007/09/03		89	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2007/09/03		89	%	60 - 130
			Diesel (C11-C32)	2007/09/03		89	%	N/A
			Diesel (C10-C24)	2007/09/03		89	%	60 - 130
		Spiked Blank	o-Terphenyl	2007/09/03		111	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2007/09/03		103	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2007/09/03		103	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2007/09/03		103	%	60 - 130
			Diesel (C11-C32)	2007/09/03		103	%	N/A
			Diesel (C10-C24)	2007/09/03		103	%	60 - 130
		Method Blank	o-Terphenyl	2007/09/03		115	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2007/09/03	ND, RDL=10		ug/g	
			F3 (C16-C34 Hydrocarbons)	2007/09/03	ND, RDL=10		ug/g	
			F4 (C34-C50 Hydrocarbons)	2007/09/03	ND, RDL=10		ug/g	
			Diesel (C11-C32)	2007/09/03	ND, RDL=10		ug/g	
			Diesel (C10-C24)	2007/09/03	ND, RDL=10		ug/g	
		RPD	F2 (C10-C16 Hydrocarbons)	2007/09/03	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2007/09/03	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2007/09/03	NC		%	50
1350537	BWW	MATRIX SPIKE	o-Terphenyl	2007/09/02		130	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2007/09/02		100	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2007/09/02		100	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2007/09/02		100	%	60 - 130
			Diesel (C10-C24)	2007/09/02		100	%	30 - 130
			Diesel (C11-C32)	2007/09/02		100	%	N/A
		Spiked Blank	o-Terphenyl	2007/09/02		127	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2007/09/02		101	%	60 - 130
			F3 (C16-C34 Hydrocarbons)	2007/09/02		101	%	60 - 130
			F4 (C34-C50 Hydrocarbons)	2007/09/02		101	%	60 - 130
			Diesel (C10-C24)	2007/09/02		101	%	30 - 130
			Diesel (C11-C32)	2007/09/02		101	%	N/A
		Method Blank	o-Terphenyl	2007/09/02		118	%	30 - 130
			F2 (C10-C16 Hydrocarbons)	2007/09/02	ND, RDL=100		ug/L	
			F3 (C16-C34 Hydrocarbons)	2007/09/02	ND, RDL=100		ug/L	
			F4 (C34-C50 Hydrocarbons)	2007/09/02	ND, RDL=100		ug/L	
			Diesel (C10-C24)	2007/09/02	ND, RDL=100		ug/L	
			Diesel (C11-C32)	2007/09/02	ND, RDL=100		ug/L	
		RPD	F2 (C10-C16 Hydrocarbons)	2007/09/02	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2007/09/02	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2007/09/02	NC		%	50
1351583	MC	MATRIX SPIKE	Acid Extractable Mercury (Hg)	2007/09/05		114	%	75 - 125
		QC STANDARD	Acid Extractable Mercury (Hg)	2007/09/05		101	%	75 - 125
		Method Blank	Acid Extractable Mercury (Hg)	2007/09/05	ND, RDL=0.05		ug/g	
		RPD	Acid Extractable Mercury (Hg)	2007/09/05	NC		%	35
1351824	GBU	MATRIX SPIKE [U33976-02]	Acid Extractable Arsenic (As)	2007/09/04		103	%	75 - 125
			Acid Extractable Cadmium (Cd)	2007/09/04		98	%	75 - 125
			Acid Extractable Chromium (Cr)	2007/09/04		93	%	75 - 125
			Acid Extractable Cobalt (Co)	2007/09/04		100	%	75 - 125

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P.O. #:
Project name: BAFFIN ISLAND, NUNAVUT

Quality Assurance Report (Continued)

Maxxam Job Number: TA792849

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
1351824	GBU	MATRIX SPIKE						
		[U33976-02]	Acid Extractable Copper (Cu)	2007/09/04		99	%	75 - 125
			Acid Extractable Lead (Pb)	2007/09/04		97	%	75 - 125
			Acid Extractable Nickel (Ni)	2007/09/04		96	%	75 - 125
			Acid Extractable Zinc (Zn)	2007/09/04		95	%	75 - 125
		QC STANDARD	Acid Extractable Arsenic (As)	2007/09/04		99	%	75 - 125
			Acid Extractable Chromium (Cr)	2007/09/04		88	%	75 - 125
			Acid Extractable Cobalt (Co)	2007/09/04		86	%	75 - 125
			Acid Extractable Copper (Cu)	2007/09/04		98	%	75 - 125
			Acid Extractable Lead (Pb)	2007/09/04		94	%	75 - 125
			Acid Extractable Nickel (Ni)	2007/09/04		88	%	75 - 125
			Acid Extractable Zinc (Zn)	2007/09/04		83	%	75 - 125
		Method Blank	Acid Extractable Arsenic (As)	2007/09/04	ND, RDL=1		ug/g	
			Acid Extractable Cadmium (Cd)	2007/09/04	ND, RDL=0.3		ug/g	
			Acid Extractable Chromium (Cr)	2007/09/04	ND, RDL=0.5		ug/g	
			Acid Extractable Cobalt (Co)	2007/09/04	ND, RDL=0.5		ug/g	
			Acid Extractable Copper (Cu)	2007/09/04	ND, RDL=0.5		ug/g	
			Acid Extractable Lead (Pb)	2007/09/04	ND, RDL=1		ug/g	
			Acid Extractable Nickel (Ni)	2007/09/04	ND, RDL=0.5		ug/g	
			Acid Extractable Zinc (Zn)	2007/09/04	ND, RDL=3		ug/g	
		RPD [U33976-02]	Acid Extractable Arsenic (As)	2007/09/04	3.1		%	35
			Acid Extractable Cadmium (Cd)	2007/09/04	NC		%	35
			Acid Extractable Chromium (Cr)	2007/09/04	0.9		%	35
			Acid Extractable Cobalt (Co)	2007/09/04	0.7		%	35
			Acid Extractable Copper (Cu)	2007/09/04	0.2		%	35
			Acid Extractable Lead (Pb)	2007/09/04	NC		%	35
			Acid Extractable Nickel (Ni)	2007/09/04	2.4		%	35
			Acid Extractable Zinc (Zn)	2007/09/04	2.0		%	35

ND = Not detected
N/A = Not Applicable
NC = Non-calculable
RPD = Relative Percent Difference
QC Standard = Quality Control Standard
SPIKE = Fortified sample

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Validation Signature Page

Maxxam Job #: A792849

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

CHARLES ANCKER, B.Sc., M.Sc., C.Chem, Senior Analyst

CHRISTINA NERVO, Scientific Services

MEDHAT RISKALLAH, Manager, Hydrocarbon Department

MAMDOUH SALIB, Analyst, Hydrocarbons

SUZANA POPOVIC, Supervisor, Hydrocarbons

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CAEAL have approved this reporting process and electronic report format.

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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

INVOICE INFORMATION	REPORT INFORMATION (if differs from invoice)	PROJECT INFORMATION	MAXXAM JOB NUMBER
Company Name: Maxxam	Company Name: Fraser Environmental	Quotation #:	
Contact Name: Alain Carrière	Contact Name: Tamina Graham	P.O. #:	CHAIN OF CUSTODY #
Address:	Address: 329 Churchill St. N	Project #: 1213-07401	00516664
Phone: Fax:	Phone: 613 721 0555 Fax:	Project Name: Fox-4 Cape Hooper	
Email:	Email: tgraham@fraserenvironmental.com	Location: Baffin Island, Nunavut	
		Sampled By: R. Fletcher	

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 _____ 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)	PHC (C6 - C32)	BTEX	PCB Aroclors	Hydrides (Total) *	Mercury (Total)	# of Cont.	COMMENTS / TAT COMMENTS
1	FX-1 (Soil) 0-15cm	Aug 22		Soil			/	/	x	/	x	2	* Total Metals: As, Cd,
2	FX-5 (Soil) 40-50cm	"		"			x	x	/	/	/	2	Cr, Co, Cu, Pb, Ni, Zn
3	FX-21 (Soil) 40-50cm	"		"			x	/	/	x	x	2	
4	MW-13 (Soil) 0-15cm	Aug 24		"			/	/	/	/	/	2	
5	MW-14 (Soil) 0-15cm	"		"			x	x	x	x	x	2	
6	FX-6 (Soil) 0-15cm	Aug 25		"			x	x	x	/	x	2	** Metals not filtered,
7	FX-7 (Soil) 0-15cm	Aug 25		"			/	/	/	x	x	2	not preserved
8	MW13						x	x	x	x	x	6	
9	MW-10	Aug 24		Water			/	x	x	/	x	6	
10	MW-15	Aug 24		"			/	x	x	x	x		
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 Dioxins/Furans are > 5 days - contact your Project Manager for details.

RELINQUISHED BY (Signature/Print)	RECEIVED BY (Signature/Print)	Date	Time
		28-Aug-2007	12 P.M.

Laboratory Use Only

Temperature (°C) on Receipt

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.**

ANNEX 2

QA/QC ANALYTICAL RESULTS

QUALITY ASSURANCE/QUALITY CONTROL

A Quality Assurance/Quality Control (QA/QC) program was implemented to monitor the quality of the analytical results. The main objective of this QA/QC program is to insure that sampling data and analysis results are complete, precise, exact, representative and comparable.

All samples were given sequential alphanumerical coding before submitting to the analytical laboratories; these coding masked any information concerning site location, sample type or possible concentrations in the samples.

All soil and groundwater samples were sent for analysis to Bodycote, Montreal Canada, a division of Nunasi Environmental Corporation. In order to insure the quality of analytical results, 10 % of duplicate samples were sent to a second laboratory (Maxxam Analytics Inc.) and analyzed for inter-laboratory comparison purposes. All results are presented in the table to this Annex (Annex 2 Table 1).

Soil Samples

In case of soil samples, some minor differences were noted within the Bodycote metals results when duplicates were compared, although all differences are considered to be within acceptable limits.

Metals

For the soil sample F4-7 the results for As presented significant discrepancies between the sample and the inter-laboratory results (i.e. 6.5 vs. 25 mg/Kg).

Hydrocarbons

For the soil sample F4-1, and F4-21, the results for TPH presented sizable discrepancies between the sample and its QA/QC inter-laboratory duplicate (i.e. 3384 vs. 9210 mg/Kg; 6757 vs. 13570 mg/Kg respectively)..

A likely explanation for these discrepancies could be explained due to the heterogeneous nature of the soil samples

Groundwater

Groundwater samples were subject to inter-laboratory comparison (as per Terms of Reference). In case of groundwater, the TPH were identical between the samples and the duplicate. The results for the total metals in the samples and the duplicates were generally similar except for;

Co:

- 0.001 mg/L in sample vs. 0.014 mg/L in inter-laboratory duplicate (MW-10); and
- 0.001 mg/L in sample vs. 0.011 mg/L in inter-laboratory duplicate (MW-15).

And, Co:

- 0.008 mg/L in sample vs. 0.063 mg/L in inter-laboratory duplicate (MW-10); and

- 0.003 mg/L in sample vs. 0.018 mg/L in inter-laboratory duplicate (MW-15).

Overall, the soil and groundwater sample results are broadly coherent and within the same range of results for both laboratories. In general, the reliability of the analytical results is considered as good.

Annex 2 to QA/QC Discussion
Table 1 - SUMMARY OF 2007 SOIL AND GROUNDWATER DATA
QA/QC DATA

Sample #	Location	Laboratory	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Hg	PCBs	F1 C_6-C_{10}	F2 C_{10}-C_{16}	F3 C_{16}-C_{34}	TPH C_6-C_{34}
Soil			[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]
F4-5(soil) 40-50cm	F4-5	Bodycote	34	38	7	<0.9	<10	38	47	16.4	<0.04	<0.1	22	9440	818	10280
QAQC-1	F4-5	Bodycote	30	21	5	<0.9	<10	31	33	13.2	<0.04	<0.1	14	7010	843	7867
F4-5(soil) 40-50cm	F4-5	Maxxam	38	31	7.6	0.3	9	41	44	18	<0.05	0.05	160	11000	1500	12660
F4-21(soil)40-50cm	F4-21	Bodycote	--	--	--	--	--	--	--	--	--	--	142	6380	235	6757
QAQC-2	F4-21	Bodycote	14	10	3	<0.9	<10	24	25	9.7	<0.04	<0.1	105	8460	1000	9565
F4-21(soil)40-50cm	F4-21	Maxxam	18	14	4.1	<0.3	8	27	31	14	<0.05	0.03	750	12000	820	13570
F4-1(soil) 0-15cm	F4-1	Bodycote	15	16	4	<0.9	<10	24	26	8.5	<0.04	0.1	96	3660	128	3884
QAQC-3	F4-1	Bodycote	25	21	6	<0.9	<10	30	29	10.3	<0.04	<0.1	82	6280	227	6589
F4-1(soil) 0-15cm	F4-1	Maxxam	27	29	8.2	<0.3	4	37	39	17	<0.05	0.01	530	8300	380	9210
MW13(soil) 0-15cm	MW-13	Bodycote	8	8	2	<0.9	<10	17	18	5.4	<0.04	<0.1	<11	<20	28	28
QAQC-4	MW-13	Bodycote	12	8	2	<0.9	<10	18	18	5.4	<0.04	<0.1	<11	<20	<20	<20
MW13(soil) 0-15cm	MW-13	Maxxam	15	13	3.9	<0.3	5	26	28	9	<0.05	0.02	<10	<10	17	17
MW14(soil) 0-15cm	MW-14	Bodycote	10	8	2	<0.9	<10	20	19	5.9	<0.04	<0.1	<11	42	217	259
QAQC-5	MW-14	Bodycote	17	11	3	<0.9	<10	23	20	18.6	<0.04	<0.1	<11	44	208	252
MW14(soil) 0-15cm	MW-14	Maxxam	14	11	3.5	<0.3	8	24	26	47	<0.05	0.02	<10	86	300	386
F4-7(soil) 0-15cm	F4-7	Bodycote	8	5	2	<0.9	<10	14	14	6.5	<0.04	<0.1	<11	<20	<20	<20
QAQC-6	F4-7	Bodycote	6	6	2	<0.9	<10	16	16	6	<0.04	<0.1	<11	<20	<20	<20
F4-7(soil) 0-15cm	F4-7	Maxxam	7.2	7.2	2.4	<0.3	2	16	22	24	<0.05	<0.01	<10	<10	<10	<10
F4-6(soil) 0-15cm	F4-6	Bodycote	9	7	2	<0.9	<10	14	17	6.6	<0.04	<0.1	<11	<20	<20	<20
QAQC-7	F4-6	Bodycote	11	8	2	<0.9	<10	22	17	7.2	<0.04	<0.1	<11	<20	<20	<20
F4-6(soil) 0-15cm	F4-6	Maxxam	9.1	7.3	2.5	<0.3	2	16	21	10	<0.05	<0.01	<10	<10	<10	<10
Water			[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[mg/L]	[ug/L]	[ug/L]	[mg/L]	[mg/L]	[mg/L]
MW-10	MW-10	Bodycote	0.006	0.024	0.001	<0.001	0.008	0.46	0.099	0.004	<0.0001	--	<100	<100	<100	<100
QA/QC-1	MW-10	Bodycote	0.006	0.023	<0.001	<0.001	0.008	0.42	0.092	0.004	<0.0001	--	<100	<100	<100	<100
MW-10	MW-10	Maxxam	0.005	0.022	0.011	0.002	0.063	0.62	0.079	0.003	--	<0.05	<100	<100	<100	<100
MW-15	MW-15	Bodycote	0.007	0.011	0.001	<0.001	0.003	0.15	0.008	0.002	<0.0001	--	<100	<100	<100	<100
QAQC-2	MW-15	Bodycote	0.007	0.012	0.001	<0.001	0.004	0.16	0.011	0.003	<0.0001	--	<100	<100	<100	<100
MW-15	MW-16	Maxxam	0.006	0.008	0.014	<0.001	0.018	0.17	<0.005	0.001	--	<0.05	<100	<100	<100	<100

ANNEX 3

FIELD NOTES

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	3:18 pm
Names of Samplers:	RF		
Landfill Name:	Heli-pad		
Monitoring Well ID:	MW-1		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite swelled to find. Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	-	Acidification (Y/N):	-
Decontamination required (Y/N):	-	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):	-	from ground surface	
Length screened section (cm):	-		
Depth to top of screen (cm):	-	from ground surface	
Depth to water surface (cm):	-	Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52 0.470	from ground surface	
Depth to bottom (cm):	136 1.530	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:	5.46 / 5.84 / 5.9	/ 5.9 / 5.84	
Conductivity (µS/cm) :	143 / 141 / 144	/ 143 / 144	
Temperature (°C):	2.3 / 2.6 / 2.0	/ 2.0 / 2.0	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Purged 15 L, water clear, faint HC odour

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	12:00 noon
Names of Samplers:	RF		
Landfill Name:	Heli pad west		
Monitoring Well ID:	MW-2		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite surged to cap Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	cleaned at
Volume Purged Water (mL):		Purging (Y/N):	
Sampling Equipment:			
Filtration (Y/N):		Acidification (Y/N):	-
Decontamination required (Y/N):		Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):	—	from ground surface	—
Length screened section (cm):	—		
Depth to top of screen (cm):	—	from ground surface	—
Depth to water surface (cm):	—	Method (electric meter, steel tape, etc):	electric water
(from top of pipe)			
Static water level (cm):	~~52~~ 0.65m	from ground surface	0.53
Depth to bottom (cm):	~~183~~ 1.725m	Evidence of sludge etc:	none
		Evidence of freezing/siltation:	none
		(compare to installation record)	
Free product thickness (mm):	none	Method (electric meter, steel tape, etc):	paste
pH:	5.23/5.88/6.38/6.44	6.50/6.52/	
Conductivity (µS/cm) :	248/255/254/256	256/257/	
Temperature (°C):	2.8/2.6/2.5/2.3	/2.3/2.2/	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Purged 3L → clear, HC odour, sampled for all parameters

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	12:30 pm
Names of Samplers:	RF		
Landfill Name:	Heli pad		
Monitoring Well ID:	MW-3		
Well Sampling Event:	—	Sample Number:	
Condition of Well:	obstruction in well → silt on probe Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	
Sampling Equipment:			
Filtration (Y/N):		Acidification (Y/N):	-
Decontamination required (Y/N):		Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52	from ground surface	
Depth to bottom (cm):	133	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:			
Conductivity (µS/cm) :			
Temperature (°C):			
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	1130 am
Names of Samplers:	RF		
Landfill Name:	Heliport		
Monitoring Well ID:	MW-4		
Well Sampling Event:		Sample Number:	
Condition of Well:	Obstruction in Bottom of Bailer stock in the well. Not able to remove bailer and well to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	
Sampling Equipment:			
Filtration (Y/N):		Acidification (Y/N):	-
Decontamination required (Y/N):		Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52	from ground surface	
Depth to bottom (cm):	133	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:			
Conductivity (µS/cm) :			
Temperature (°C):			
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	10:45 am
Names of Samplers:	RF		
Landfill Name:	Helipad east		
Monitoring Well ID:	MW-5		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite heaved to cap. Bailer stock in the well. Not able to remove bailer and to sample. constraint in bottom of well	Procedure/Equipment:	Bailers
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailers		
Filtration (Y/N):	N	Acidification (Y/N):	N -
Decontamination required (Y/N):	N	Number washes and rinses:	N -

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):	—		
Depth to top of screen (cm):	—	from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52 0.987m	from ground surface	0.867
Depth to bottom (cm):	133 1.190m	Evidence of sludge etc:	N/A
		Evidence of freezing/siltation:	siltation
		(compare to installation record)	
Free product thickness (mm):	none	Method (electric meter, steel tape, etc):	
pH:	4.93 / 5.59 / 5.81 / 5.99	/ 6.04	
Conductivity (µS/cm) :	162 / 146 / 145 / 145	/ 146	
Temperature (°C):	3.0 / 1.6 / 1.6 / 1.5	/ 1.5	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

987
120
867

Purged 1 L → lots of water, good recovery
sampled all parameters

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	10:45
Names of Samplers:	RF		
Landfill Name:	Heli-pad		
Monitoring Well ID:	MW-6		
Well Sampling Event:		Sample Number:	—
Condition of Well:	Bentonite swelled to cap Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):	n/a	Purging (Y/N):	n/a
Sampling Equipment:	n/a		
Filtration (Y/N):	no	Acidification (Y/N):	-
Decontamination required (Y/N):	no	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12 n/a		
Diameter of well (cm):	5 n/a		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52	from ground surface	
Depth to bottom (cm):	133	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:			
Conductivity (µS/cm) :			
Temperature (°C):			
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

notes on Back

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	2:15
Names of Samplers:	RF		
Landfill Name:	Station		
Monitoring Well ID:	MW-7		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite expanded to lid Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	—
Decontamination required (Y/N):	—	Number washes and rinses:	—

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):	—	from ground surface	
Length screened section (cm):	—		
Depth to top of screen (cm):	—	from ground surface	
Depth to water surface (cm):	—	Method (electric meter, steel tape, etc):	electronic Meter
(from top of pipe)			
Static water level (cm):	~~52~~ 1.14	from ground surface	
Depth to bottom (cm):	~~133~~ 1.72	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	N/A	Method (electric meter, steel tape, etc):	Paste
pH:	5.09 / 5.26 / 5.31	/ 5.32 / 5.37	
Conductivity (µS/cm) :	61 / 60 / 60	/ 59 / 60	
Temperature (°C):	3.1 / 2.9 / 2.8	/ 2.8 / 2.7	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Purged 2L, water clear, no odour

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 23/07	Time:	1:30 pm
Names of Samplers:	RF		
Landfill Name:	Station		
Monitoring Well ID:	MW-9		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	
Sampling Equipment:			
Filtration (Y/N):		Acidification (Y/N):	-
Decontamination required (Y/N):		Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):	—	from ground surface	—
Length screened section (cm):	—		
Depth to top of screen (cm):	—	from ground surface	—
Depth to water surface (cm):	—	Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	~~52~~ 0.93m	from ground surface	0.81m
Depth to bottom (cm):	~~138~~ 1.20m	Evidence of sludge etc:	n/a
		Evidence of freezing/siltation:	none
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:	5.16 / 5.86 / 6.13	6.21 / 6.29 / 6.3 / 6.31 /	
Conductivity (µS/cm) :	131 / 127 / 117	117 / 115 / 114 / 113 /	
Temperature (°C):	2.5 / 1.7 / 1.7	1.4 / 1.7 / 1.2 / 1.3 /	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Purged 2.5L, water clear, HC odour

Development of Monitoring Wells

Site Name:	Fox-4		
ate of Sampling Event:	Aug 23/07	Time:	2:00pm
Names of Samplers:	RF		
Landfill Name:	Stratton		
Monitoring Well ID:	MW-9		
Well Sampling Event:		Sample Number:	
Condition of Well: Bentonite expanded to cap. Obstruction in Bottom	Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	—	Acidification (Y/N):	-
Decontamination required (Y/N):	—	Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52	from ground surface	
Depth to bottom (cm):	133	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	Paste
pH:			
Conductivity (µS/cm) :			
Temperature (°C):			
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 24/07	Time:	9:30 am
Names of Samplers:	RF		
Landfill Name:	Tier II		
Monitoring Well ID:	MW-10		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite swelled to cap — Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	cleaned out
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N -
Decontamination required (Y/N):	N	Number washes and rinses:	N -

Measured Data Purged 5.5 L, water started milky light grey, turning clear

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):	—	from ground surface	
Length screened section (cm):	—		
Depth to top of screen (cm):	—	from ground surface	
Depth to water surface (cm):	—	Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	~~52~~ 0.590	from ground surface	
Depth to bottom (cm):	~~183~~ 1.340	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:	5.23 / 6.06 / 6.47	6.56 / 6.69 / 6.81 / 6.81	
Conductivity (µS/cm) :	321 / 311 / 317	309 / 301 / 295 / 293	
Temperature (°C):	4.3 / 2.8 / 2.6 / 2	6 / 2.3 / 2.2 / 2.2	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Sampled for all parameters, QA/QC 1, Maxxam MW-10

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 24/07	Time:	
Names of Samplers:			
Landfill Name:	Tier II		
Monitoring Well ID:	MW-11		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite swelled to top Bailer stock in the well. Not able to remove bailer and to sample. Obstruction in well (bailer)	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	
Sampling Equipment:			
Filtration (Y/N):		Acidification (Y/N):	-
Decontamination required (Y/N):		Number washes and rinses:	-

Measured Data

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	52	from ground surface	
Depth to bottom (cm):	133	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:			
Conductivity (µS/cm) :			
Temperature (°C):			
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 25/07	Time:	
Names of Samplers:	RF		
Landfill Name:	Teir II		
Monitoring Well ID:	MW-12		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite swelled to lid Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N -
Decontamination required (Y/N):	N	Number washes and rinses:	N -

Measured Data Purged 6L, water clear, obstruction @ 0.590, no odour

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	92 0.120	from ground surface	
Depth to bottom (cm):	133 1.190	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:	6.63 / 6.56 / 6.43 /	6.34 / 6.67 / 6.76 / 6.70 /	6.71
Conductivity (µS/cm) :	247 / 232 / 229 /	233 / 240 / 244 / 240 /	240
Temperature (°C):	4.2 / 4.1 / 4.3 /	4.0 / 3.9 / 3.9 / 4.0 /	4.0
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 25/07	Time:	
Names of Samplers:	RF		
Landfill Name:	Tier II		
Monitoring Well ID:	MW-13		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bentonite swelled to 1.0d Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer		
Filtration (Y/N):	N	Acidification (Y/N):	N -
Decontamination required (Y/N):	N	Number washes and rinses:	N -

Measured Data Purged @ L, water started milky light grey, became clear

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	~~52~~ 0.020	from ground surface	
Depth to bottom (cm):	~~138~~ 1.050	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:	5.94/6.14/6.25/6.28	/6.28/6.38/6.38/6.36	/6.36/6.35/6.32
Conductivity (µS/cm) :	201/161/154/154	/161/152/131/151	/136/13.9/136
Temperature (°C):	3.2/3.0/2.8/2.8	/2.4/2.5/3.2/2.5	/3.1/3.1/3.2
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Sampled for all parameters

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 24/07	Time:	
Names of Samplers:	RF		
Landfill Name:			
Monitoring Well ID:	MW-14		
Well Sampling Event:		Sample Number:	
Condition of Well:	Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	N
Sampling Equipment:			
Filtration (Y/N):	N	Acidification (Y/N):	N
Decontamination required (Y/N):	N	Number washes and rinses:	—

Measured Data Purged 7L, water milky grey, faint odour

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	electric meter
(from top of pipe)			
Static water level (cm):	52 0.740	from ground surface	
Depth to bottom (cm):	133 1.665	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):		Method (electric meter, steel tape, etc):	
pH:	5.36 / 5.53 / 5.69	/ 5.7 / 5.66	
Conductivity (µS/cm) :	86 / 91 / 89	/ 90 / 89	
Temperature (°C):	5.0 / 3.2 / 3.5	/ 3.6 / 3.11	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

sampled for all parameters

Development of Monitoring Wells

Site Name:	Fox-4		
Date of Sampling Event:	Aug 24/07	Time:	
Names of Samplers:	RF		
Landfill Name:	Tier II		
Monitoring Well ID:	MW-15		
Well Sampling Event:		Sample Number:	
Condition of Well: Bentonite smelled to lid missing J-plug	Bailer stock in the well. Not able to remove bailer and to sample.	Procedure/Equipment:	
Volume Purged Water (mL):		Purging (Y/N):	
Sampling Equipment:			
Filtration (Y/N):		Acidification (Y/N):	-
Decontamination required (Y/N):		Number washes and rinses:	-

Measured Data Purged 5.5L, water clear; no odour

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):		from ground surface	
Length screened section (cm):			
Depth to top of screen (cm):		from ground surface	
Depth to water surface (cm):		Method (electric meter, steel tape, etc):	
(from top of pipe)			
Static water level (cm):	~~52~~ 0.103	from ground surface	
Depth to bottom (cm):	~~138~~	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	None	Method (electric meter, steel tape, etc):	
pH:	6.07 / 6.74 / 6.86	/ 6.88 / 6.84	
Conductivity (µS/cm) :	162 / 154 / 148	/ 150 / 150	
Temperature (°C):	5.5 / 4.4 / 4.1	/ 3.7 / 3.8	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Sampled all parameters, QA/QC 2, Maxxam MW-15

Development of Monitoring Wells

Cond in µs/cm

Site Name:	Fox-4		
Date of Sampling Event:	Aug 24/07	Time:	
Names of Samplers:	RF		
Landfill Name:			
Monitoring Well ID:	MW-16		
Well Sampling Event:		Sample Number:	—
Condition of Well:	Bentonite swelled to cap. Bailer stock in the well. Not able to remove bailer and to sample. obstruction @ water surface	Procedure/Equipment:	used auger to get down beside obstruction
Volume Purged Water (mL):		Purging (Y/N):	Y
Sampling Equipment:	Bailer Waterra		
Filtration (Y/N):	N	Acidification (Y/N):	N -
Decontamination required (Y/N):	N	Number washes and rinses:	N -

Measured Data

purged 2.5L, water clear, no odour

Well height above ground (cm):	12		
Diameter of well (cm):	5		
Depth of installation (cm):	—	from ground surface	—
Length screened section (cm):	—		
Depth to top of screen (cm):	—	from ground surface	—
Depth to water surface (cm):	—	Method (electric meter, steel tape, etc):	electric tape
(from top of pipe)			
Static water level (cm):	~~152~~ 0.610	from ground surface	
Depth to bottom (cm):	~~183~~ 1.390	Evidence of sludge etc:	
		Evidence of freezing/siltation:	
		(compare to installation record)	
Free product thickness (mm):	none	Method (electric meter, steel tape, etc):	Paste
pH:	4.56 / 5.28 / 5.59	5.67 / 5.81 / 5.85	
Conductivity (µS/cm) :	89 / 66 / 65	64 / 64 / 65	
Temperature (°C):	6.0 / 4.0 / 3.7	3.6 / 3.5 / 3.6	
Depth of water (cm):			
Well volume of water (mL):			
Length screen collecting water:			
Shape factor:			

Sampled for all parameters

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contarctor Name:	Franz / Kruetta	Inspection Date:	Aug 21/07
Prepared By:	K. Fletcher		

Thermistor Information

Site Name:	FOX-4		Thermistor Location	Tier II Disposal Facility			
Thermistor Number:	T1		Inclination	Vertical			
Install Date:	15-Aug-98		First Date Event	5-Jul-99	Last Date Event		15-Aug-05
Coordinates and Elevation	N	20050	E	20388	Elev	?	
Length of Cable	4.27	Cable Lead Above Ground	1.9	Nodal Points	5		
Datalogger Serial #	705043			Cable Serial Number	1	String #4	

Code FOX-4T1

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☒	☐	
Cover	☒	☐	
Data Logger	☒	☐	
Cable	☒	☐	
Beads	☒	☐	
Battery Installation Date	Aug 21/07		
Battery Levels	Main 11.34 V	Aux	12.77 V

Observations

- Memory used 21%
- changed battery
- reset data logger
- String 2 + 3 not working

Proposed Maintenance

None

→ replace strings 2+3

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contarctor Name:	Numaltta / France	Inspection Date:	August 22/07
Prepared By:	R. Fletcher		

Thermistor Information

Site Name:	FOX-4		Thermistor Location	Tier II Disposal Facility			
Thermistor Number:	T1 2		Inclination	Vertical			
Install Date:	15-Aug-98		First Date Event	5-Jul-99	Last Date Event		15-Aug-05
Coordinates and Elevation	N	20050	E	20388	Elev	?	
Length of Cable	4.27	Cable Lead Above Ground	1.9	Nodal Points	5		
Datalogger Serial #	705043			Cable Serial Number	String #4		

Code FOX-4T1

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☒	☐	
Cover	☒	☐	
Data Logger	☒	☐	
Cable	☒	☐	
Beads	☐	☐	
Battery Installation Date			
Battery Levels	Main 11.34 V 100% Best	Aux 13.26V 90% Best	

Observations

Memory used 21%
- changed battery
- reset datalogger

Proposed Maintenance

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contarctor Name:	Franz	Inspection Date:	Aug 22/07
Prepared By:	R. Fletcher		

Thermistor Information

Site Name:	FOX-4	Thermistor Location	Tier II Disposal Facility		
Thermistor Number:	TT3	Inclination	Vertical		
Install Date:	15-Aug-98	First Date Event	5-Jul-99	Last Date Event	15-Aug-05
Coordinates and Elevation	N 20050	E 20388	Elev ?		
Length of Cable	4.27	Cable Lead Above Ground	1.9	Nodal Points	5
Datalogger Serial #	705043			Cable Serial Number	String #4

Code FOX-4T1

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☐	☑	→ bent (Repaired onsite)
Cover	☐	☑	missing (found → blown away)
Data Logger	☒	☐	
Cable	☒	☐	
Beads	☒	☐	
Battery Installation Date	Aug 2/07		
Battery Levels	Main 11.34 Best 100%	Aux 13.87 Best 90%	

Observations

Memory bat best before Dec 06
Analog 1 - 5 → green
warm up time 0.035 → changed to 0.210
- reset datalogger
- changed battery

Proposed Maintenance

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contarctor Name: Nunatta / Franz	Inspection Date: August 22, 06
Prepared By: R. Fletcher	

Thermistor Information

Site Name:	FOX-4	Thermistor Location	Tier II Disposal Facility		
Thermistor Number:	T1	Inclination	Vertical		
Install Date:	15-Aug-98	First Date Event	5-Jul-99	Last Date Event	15-Aug-05
Coordinates and Elevation	N 20050	E 20388	Elev ?		
Length of Cable	4.27	Cable Lead Above Ground	1.9	Nodal Points	5
Datalogger Serial #	705043			Cable Serial Number	String #4

Code FOX-4T1

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☒	☐	
Cover	☒	☐	
Data Logger	☒	☐	
Cable	☒	☐	
Beads	☒	☐	
Battery Installation Date	Aug 24/05		
Battery Levels	Main 11.34 V 100% Best	Aux	13.02 V 90% Best

Observations

Memory 21% used
- changed battery
- reset datalogger

Proposed Maintenance

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contarctor Name: Nuvotta / Franz	Inspection Date: Aug 24/07
Prepared By: R. Fletcher	

Thermistor Information

Site Name:	FOX-4	Thermistor Location	Tier II Disposal Facility		
Thermistor Number:	T1 #25	Inclination	Vertical		
Install Date:	15-Aug-98	First Date Event	5-Jul-99	Last Date Event	15-Aug-05
Coordinates and Elevation	N 20050	E 20388	Elev ?		
Length of Cable	4.27	Cable Lead Above Ground	1.9	Nodal Points	5
Datalogger Serial #	705043			Cable Serial Number	String #4

Code FOX-4T1

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☒	☐	
Cover	☒	☐	
Data Logger	☒	☐	
Cable	☒	☐	
Beads	☐	☐	
Battery Installation Date	Aug 24/07		
Battery Levels	Main 11.3V 100% Best	Aux 13.3V 97% Best	

Observations

Memory 13% used
- Reset datta logger
- Downloaded data
- changed battery

Proposed Maintenance

Thermal Monitoring
Ground Temperature Annual Maintenance Report

Contarctor Name: Nunatta / Frontz	Inspection Date: August 22/07
Prepared By: R. Fletcher	

Thermistor Information

Site Name:	FOX-4	Thermistor Location	Tier II Disposal Facility		
Thermistor Number:	T1 #6	Inclination	Vertical		
Install Date:	15-Aug-98	First Date Event	5-Jul-99	Last Date Event	15-Aug-05
Coordinates and Elevation	N 20050	E	20388	Elev	?
Length of Cable	4.27	Cable Lead Above Ground 1.9	Nodal Points	5	
Datalogger Serial #	705043		Cable Serial Number	String #4	

Code FOX-4T1

Thermistor Inspection

	Good	Needs Maintenance	
Casing	☒	☐	
Cover	☒	☐	
Data Logger	☒	☐	
Cable	☒	☐	
Beads	☒	☐	

Battery Installation Date: Aug 24/07

Battery Levels: Main 11.34 (100% Best) Aux 12.65 (85% Good)

Observations

Memory 13% full
Warm up time 0.160 → changed to 0.210
-Changed battery
-reset datalogger

Proposed Maintenance

Aug 21/07 Fox-4 1/1

6:30am → prepping @ apartment

7:00am → packing plane

9:30am → leave Iqaluit for Fox-4

12:00 noon → Arrive @ Fox-4

↳ Set-up camp

→ Download T1, reset + charged battery

→ Took soil samples @ MW 11, 12, 15 around camp

→ labelled jars for upper side tomorrow

Done @ 8:45pm

LEVEL

Fox 4

Aug 22/07

8:30 am → off for upper site

↳ Objectives: Complete all soil sampling @ upper site

9:00 am → began sampling Heli-pad

MW-6 - Pic # 440, 441

MW-4 - Pic # 442, 443

F4-1 - Pic # 444, 445

→ Took Dup 3 (QA/QC 3)
Sampled extra for Kingston
Sampled for Maxxam

→ took Dup @ 0-15 cm

MW-5 - Pic # 446, 447

MW-3 - Pic # 448, 449

Took Panorama
Pic #'s 450, 451, 452, 453, 454, 455, 456, 457, 458,

MW-2 - Pic # 459, 460

F4-19 - Pic # 461, 462

F4-18 - Pic # 463, 464

MW-1 - Pic # 465, 466, 467

F4-17 - Pic # [illegible], 468, 469

F4-20 - Pic # 470, 471

Pic # 472 → looking west towards radar

MW-8 - Pic # 473, 474

MW-9 - Pic # 475, 476

MW-7 - Pic # 477, 478

F4-21 - pic # 479, 480

F4-22 - pic # 481, 482

F4-5 - pic # 483, 484

F4-3 - Pic# 485, 486

F4-23 Pic# 487, 488

F4-24 Pic# 489, 490

F4-4 - Pic# 491, 492

F4-2 - Pic # 493, 494

Dups @ Barrel Dump

Took Dups QA/QC 1 @ (Maxxam)
F4-5 (40-50cm)

Took Dup QA/QC 2 @
F4-21 (40-50cm) (Maxxam)

Dups included copies for Kingston, Maxxam + Duplicates

Done @ 9:30 pm

Aug 24/07

Took water samples from:

MW-10 → QA/QC 1 (Maxxam)
MW-11 → obstructed
MW-15 → QA/QC 2 (Maxxam)
MW-16 →

Took soil samples at Tanner Bay.

F4-11
F4-12
F4-13

Took soil samples @:

MW-13 (QA/QC-4) (Maxxam) 0-15cm
MW-14 (QA/QC-5) (Maxxam) 0-15cm
MW-16

Downloaded Temp data from

T-4, T-5, T-6, T-2,
→ changed all batteries
→ re-set all

LEVEL

Aug 23/07 Summary

Took water samples @:

MW - 7
- 8
- 9

} Station area

MW-9 → obstructed

MW - 1
- 2
- 6 (obstructed)
- 4 (obstructed)
- 5
- 3 (obstructed)

Kingston for archive

F4-5 (40-50)
F4-1 (0-15)
F4-13 (0-15)
F4-14 (0-15)

F4-21 (40-50)
F4-7 (0-15)
F4-7 (40-50)

LEVEL

Aug 25

F4 - 6 (QA/QC - 7)
F4 - 7 (QA/QC - 6)
F4 - 25
F4 - 8

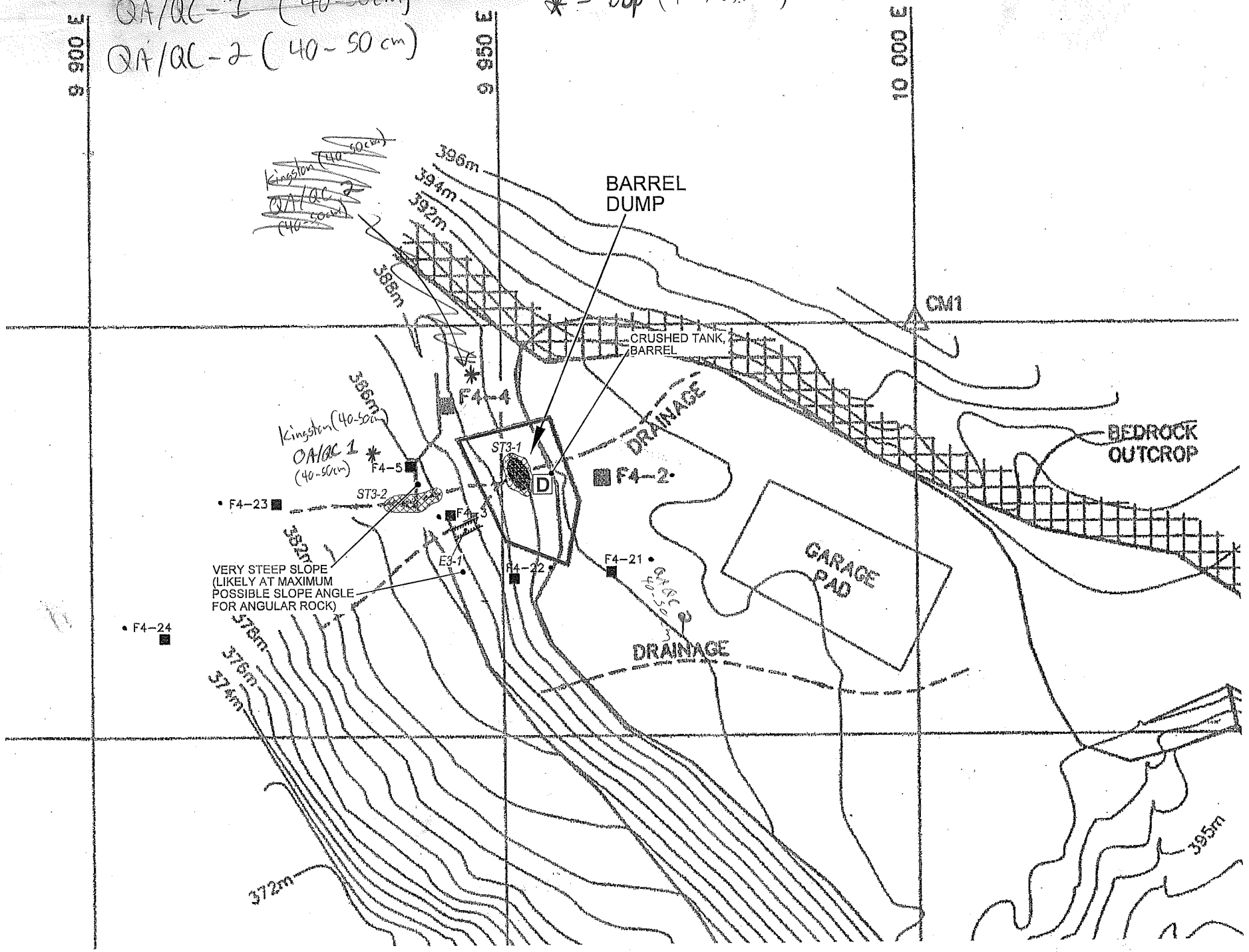
MW - 12

MW - 13

R. DEGENHARDT LTD., MADE IN VANCOUVER, CANADA
RITEBAK WATERPROOF

LEVEL

QA/QC-1 (40-50cm)
QA/QC-2 (40-50 cm)
* - Dup (+ Maxxam) ~ soil



2006 C

ST3-1

E3-1

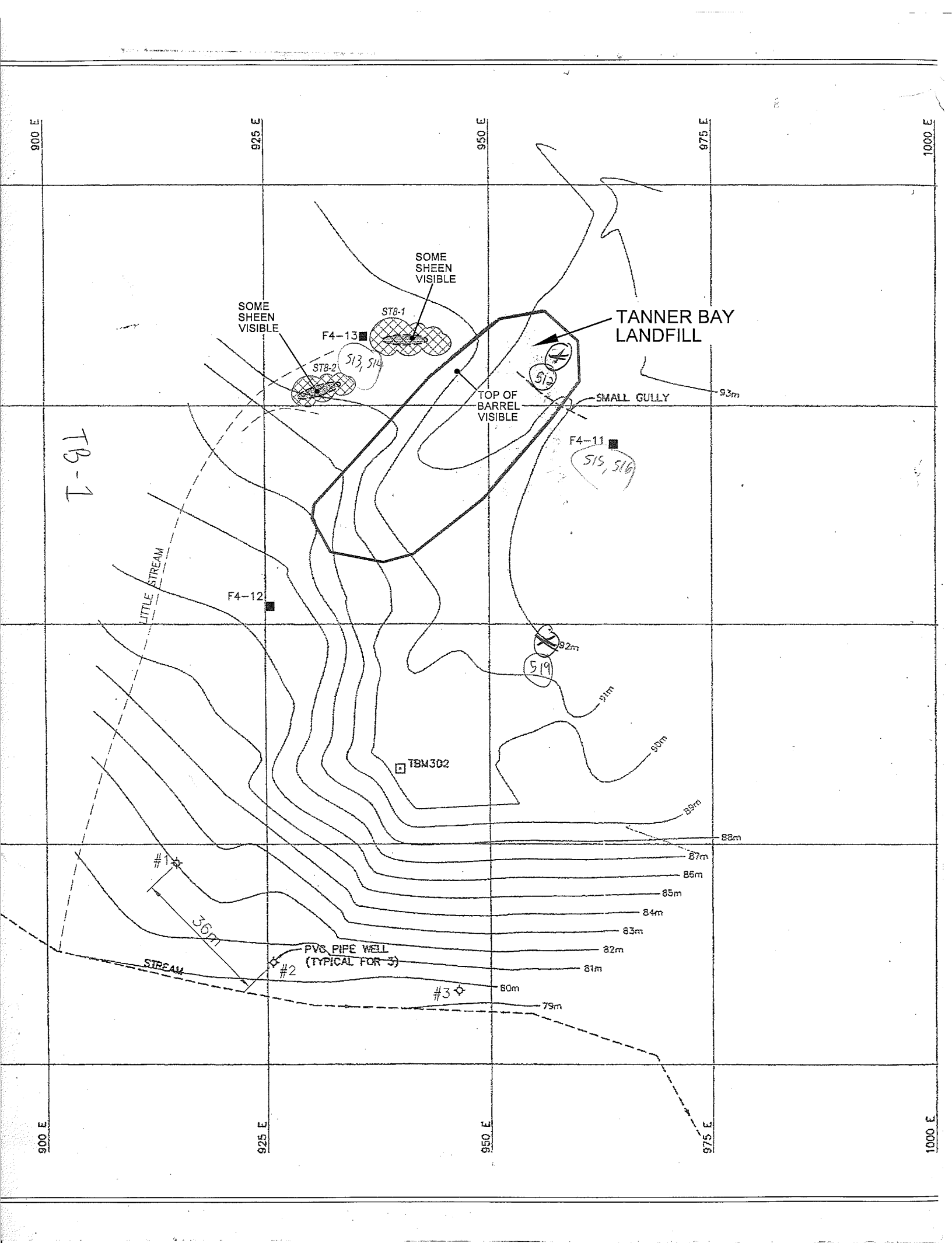
NO.	NORTH
5	9 938
7	9 873

NO.	NORTH
CM1	10 000

NOTE:
THE RESURGENCES
TO APPROXIMATE
THEY ARE HIGHL

NO.	DIMENSIO
R-1	2,5 x
R-2	2,5 x
R-3	2,5 x
R-4	1,5 x
R-5	1,0 x

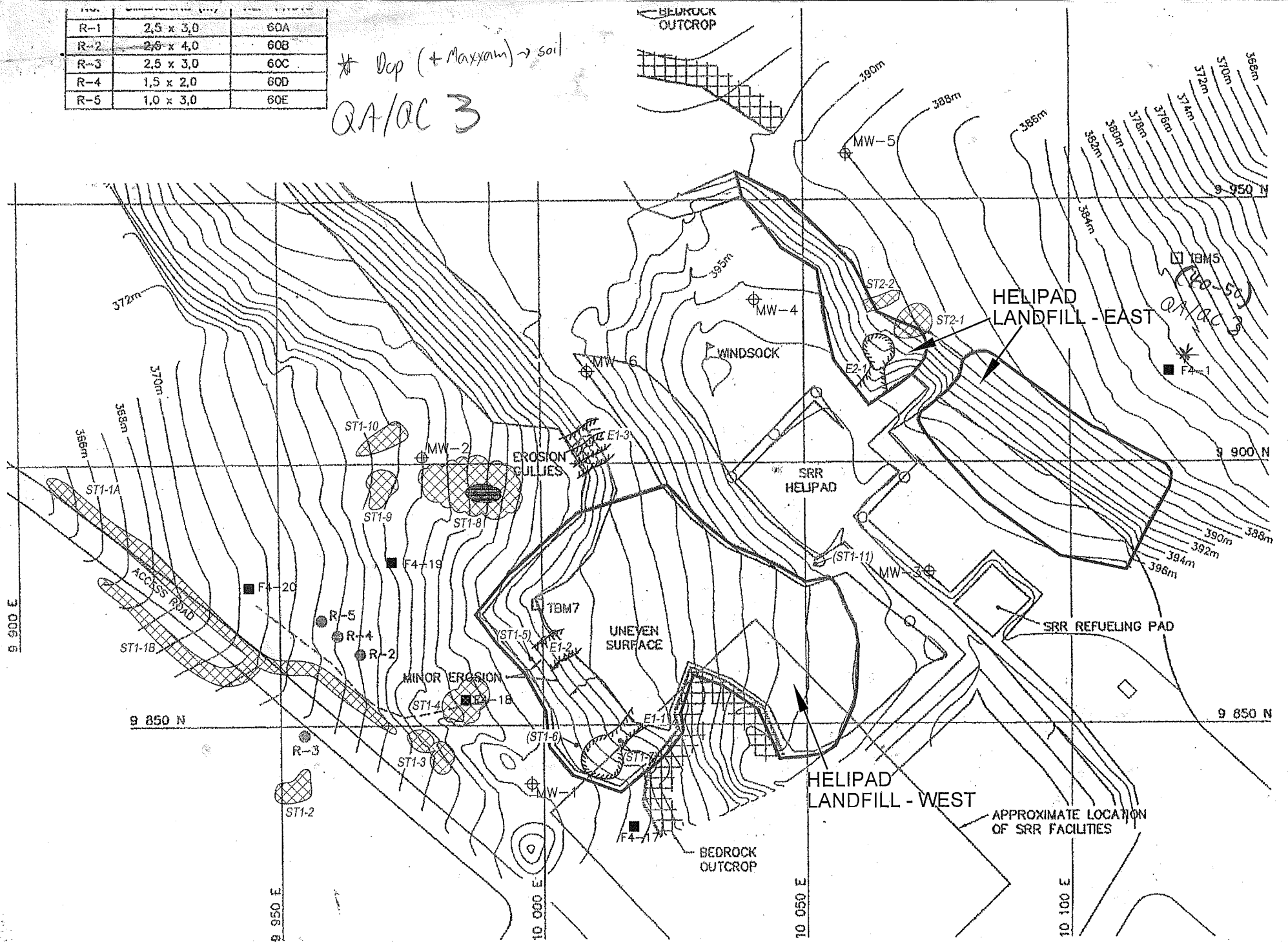
BA-1


900 E
925 E
950 E
975 E
1000 E
SOME SHEEN VISIBLE
SOME SHEEN VISIBLE
ST8-1
ST8-2
F4-13
S13, S14
S12
TANNER BAY LANDFILL
TOP OF BARREL VISIBLE
SMALL GULLY
93m
F4-11
S15, S16
TB-1
LITTLE STREAM
F4-12
92m
S19
91m
90m
TBM302
89m
88m
87m
86m
85m
84m
83m
82m
81m
80m
79m
#1
36m
PVC PIPE WELL (TYPICAL FOR 3)
#2
#3
STREAM

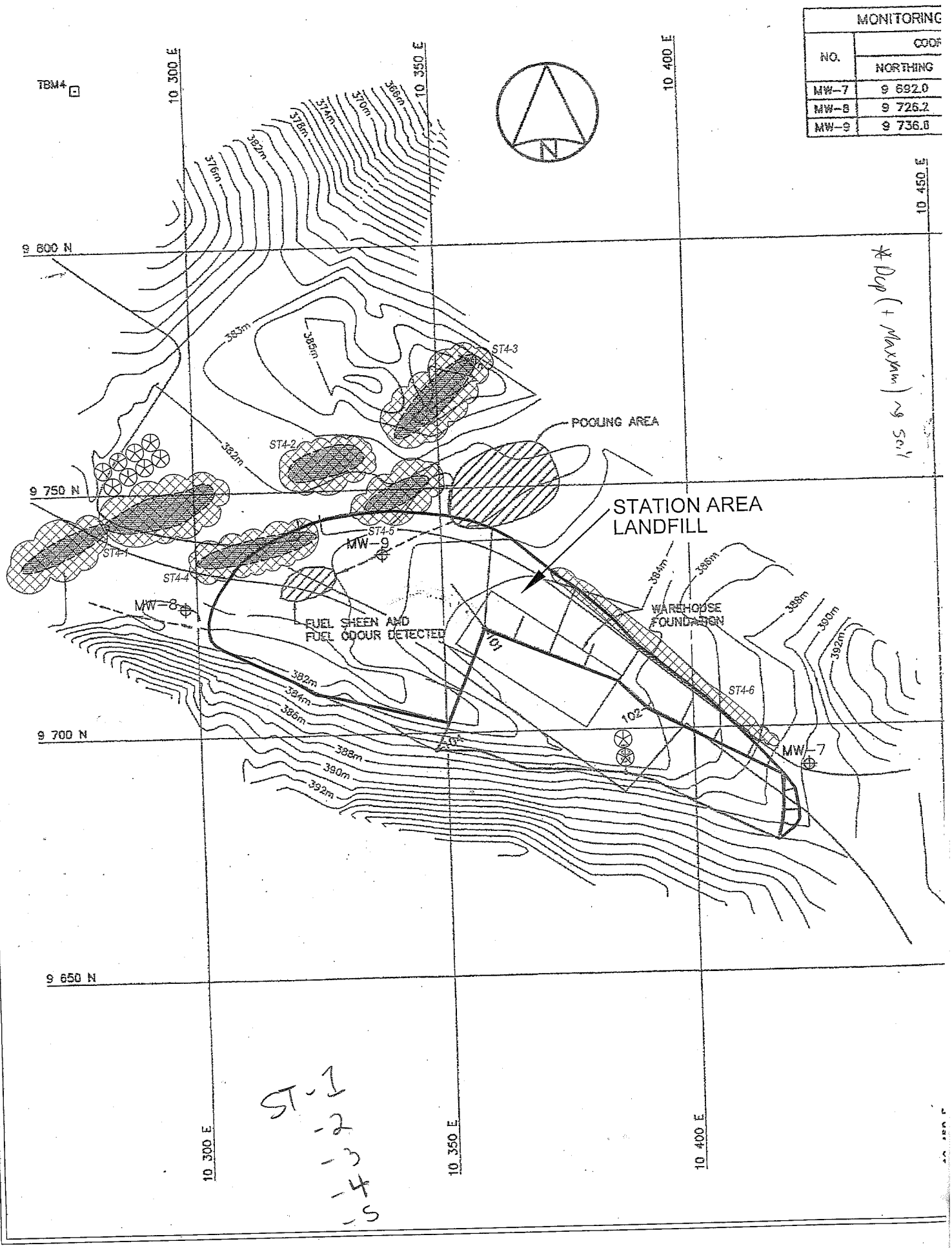
R-1	2,5 x 3,0	60A
R-2	2,5 x 4,0	60B
R-3	2,5 x 3,0	60C
R-4	1,5 x 2,0	60D
R-5	1,0 x 3,0	60E

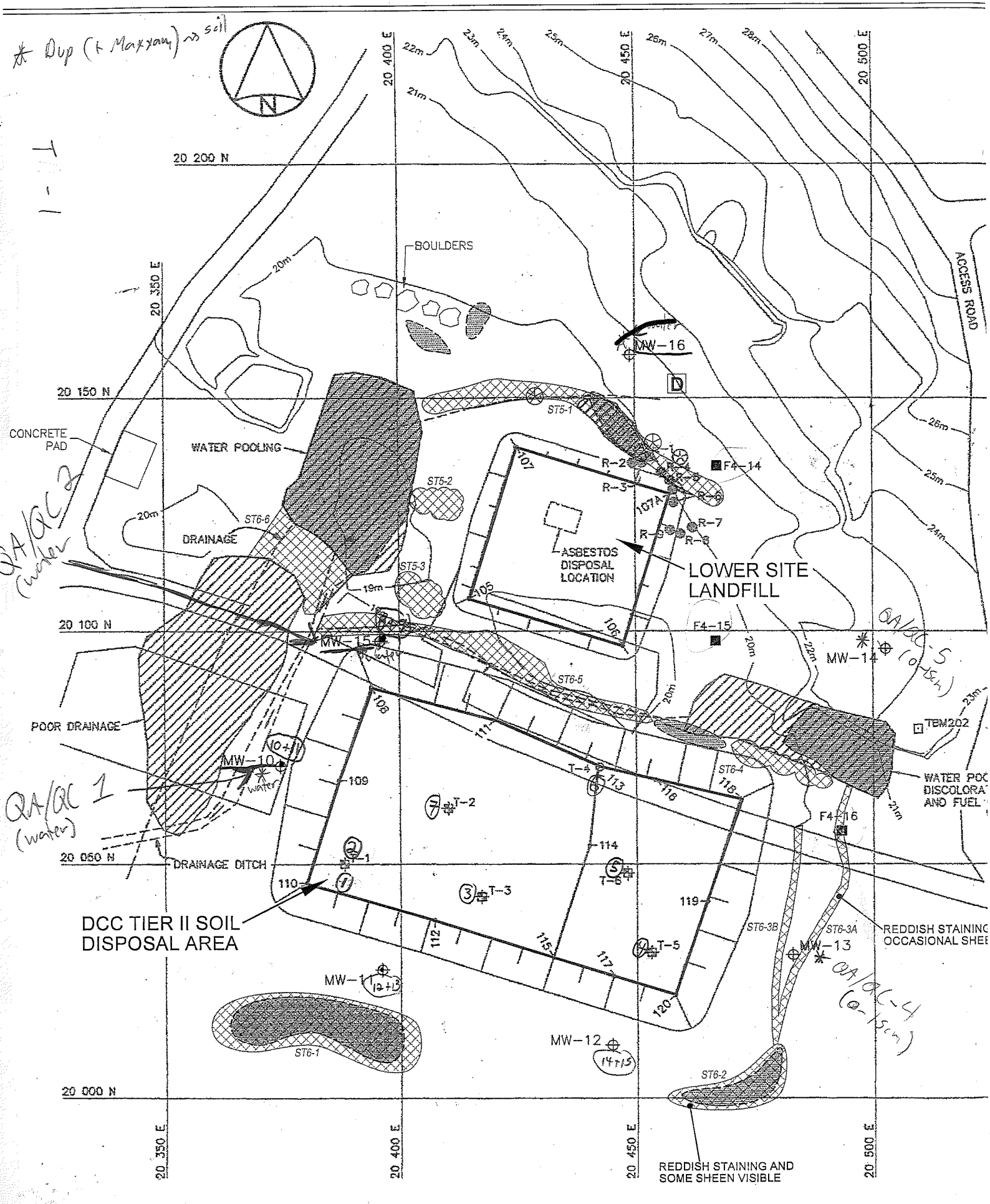
* Dap (+ Maxxam) → soil

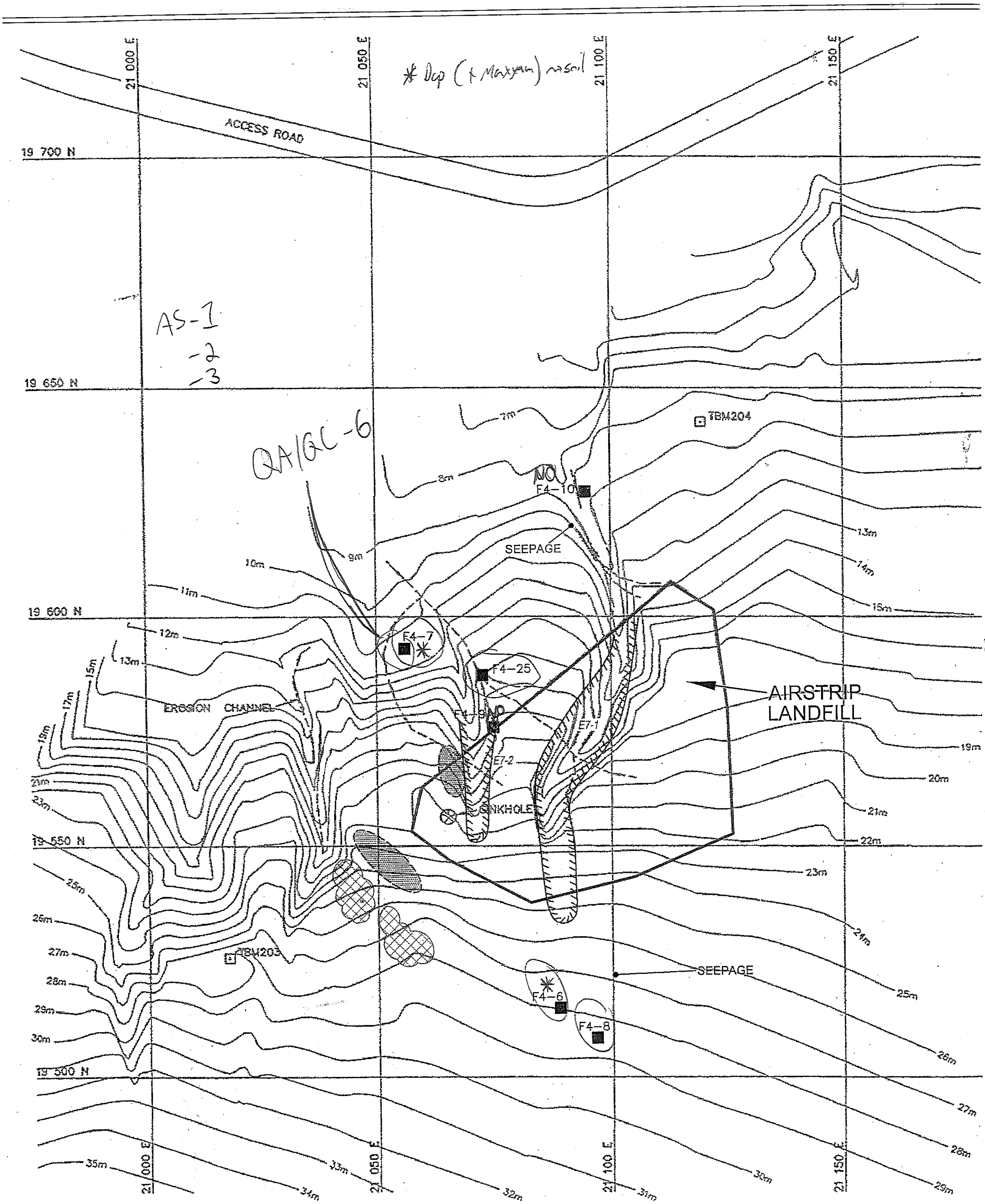
QA/QC 3



HP-1 -3
-2 -4


MONITORING
NO.
COOR
NORTHING
MW-7 9 692.0
MW-8 9 726.2
MW-9 9 736.8
TBM4
10 300 E
10 350 E
10 400 E
10 450 E
9 600 N
9 750 N
9 700 N
9 650 N
N
370m
374m
378m
382m
376m
385m
385m
382m
ST4-3
ST4-2
ST4-1
ST4-4
ST4-5
ST4-6
POOLING AREA
STATION AREA
LANDFILL
MW-9
MW-8
MW-7
FUEL SHEEN AND
FUEL ODOUR DETECTED
101
102
WAREHOUSE
FOUNDATION
384m
386m
388m
390m
392m
382m
384m
386m
388m
390m
392m
* Dep (+ Maximum) ~9 Sept
ST-1
-2
-3
-4
-5


* Dup (+ Maxxam) → soil
N
20 200 N
20 150 N
20 100 N
20 050 N
20 000 N
20 350 E
20 400 E
20 450 E
20 500 E
BOULDERS
ACCESS ROAD
CONCRETE PAD
WATER POOLING
DRAINAGE
ST6-6
ST5-1
ST5-2
ST5-3
ST6-5
ST6-4
ST6-3B
ST6-3A
ST6-2
ST6-1
MW-16
MW-15
MW-14
MW-13
MW-12
MW-11
MW-10
F4-14
F4-15
F4-16
R-2
R-3
R-4
R-5
R-6
R-7
R-8
ASBESTOS DISPOSAL LOCATION
LOWER SITE LANDFILL
DCC TIER II SOIL DISPOSAL AREA
POOR DRAINAGE
DRAINAGE DITCH
TEM202
T-2
T-3
T-4
T-5
QA/QC 2 (water)
QA/QC 1 (water)
QA/QC-5 (0-15cm)
QA/QC-4 (0-15cm)
REDDISH STAINING OCCASIONAL SHEE
REDDISH STAINING AND SOME SHEEN VISIBLE
WATER POO DISCOLORA AND FUEL


ACCESS ROAD
AIRSTRIP LANDFILL
EROSION CHANNEL
SEEPAGE
SINKHOLE
TBM203
TBM204
F4-6
F4-7
F4-8
F4-10
F4-25
E7-1
E7-2
AS-1
-2
-3
QA/QC-6
NO
19 700 N
19 650 N
19 600 N
19 550 N
19 500 N
21 000 E
21 050 E
21 100 E
21 150 E