

**THE COLLECTION OF LANDFILL
MONITORING DATA AT THE FORMER
CAM-4 DEW LINE SITE**

Kugaaruk, Nunavut

FINAL REPORT – 2011 SEASON

(O/Ref.: CD9229) (Y/Ref.: DLC MON (Kitik 09)

DEFENCE CONSTRUCTION CANADA

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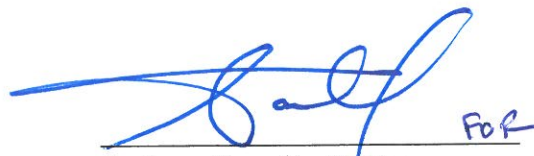
DEFENCE CONSTRUCTION CANADA

March 2012

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1 INTRODUCTION

1.1 LOCATION AND SITE FEATURES

The CAM-4 Pelly Bay DEW Line site is located on the Simpson Peninsula at 68° 27' N and 89° 45' W. The station is inland, approximately 14 km southeast of the community of Kugaaruk (formerly Pelly Bay).

CAM-4 was originally a location station within the original DEW Line system that was decommissioned in the late 1980's. A remotely operated North Warning System (NWS) Short Range Radar (SRR) Station was constructed in its vicinity. The environmental clean-up and demolition of facilities not required for the SRR site operations commenced in 2001 and were completed during the summer of 2006.

The clean-up included the closure and remediation of two existing landfills, the construction of three landfills for the disposal of non-hazardous wastes generated from demolition and collection of site debris at the upper and lower sites as well as the construction of one facility to contain Tier II soils at the upper site. Monitoring activities were carried out at the following landfill areas, as shown on Figure CAM-4.1:

- Station Area Non-Hazardous Waste Landfill (SA NHWLF)
- Tier II Disposal Facility
- Upper Site Landfill
- Lower Site Non-Hazardous Waste Landfill (LS NHWLF)
- Lower Site Landfill (Main and East Lobes)

In accordance with the NTI-DND Cooperation Agreement, landfill monitoring is carried out following the site clean-up. Table I hereafter provides a synopsis of field activities performed during the 2011 Landfill Monitoring Program at CAM-4.

Table I: 2011 Monitoring Requirements for the CAM-4 Landfills

Landfill	Visual Inspection	Soil Sampling	Groundwater Sampling	Thermal Monitoring
SA NHWLF	✓	✓	✓	
Tier II Disposal Facility	✓	✓	✓	✓
Upper Site Landfill	✓	✓	✓	✓
LS NHWLF	✓	✓	✓	
Lower Site Landfill	✓	✓	✓	✓

1.2 OBJECTIVES AND SCOPE OF WORK

The objective of the DCC Landfill Monitoring Program is to collect sufficient information to assess landfill performances from geotechnical and environmental perspectives. DCC has specified the requirements for the Landfill Monitoring Program in the document *Terms of Reference (ToR) – Consulting Services for the Collection of Landfill Monitoring Data – PIN-3 Lady Franklin Point, PIN-4 Byron Bay, CAM-1 Jenny Lind Island, CAM-2 Gladman Point, CAM-3 Shepherd Bay, and CAM-4 Pelly Bay DEW LINE SITES, NUNAVUT TERRITORY, KITIKMEOT REGION DCC PROJECT #: DLC MON*, October 7, 2008. (ToR, reference B).

The scope of work for the Landfill Monitoring Program is defined in the ToR and in Biogenie's accepted proposal dated April 2008 (reference C) that was submitted to DCC. The scope of work generally includes the following activities:

- Landfill monitoring for each of the CAM-4 landfills
- Visual inspection
- Soil and groundwater sampling
- Thermal monitoring (DCC Tier II Disposal Facility, Upper Site Landfill and Lower Site Landfill)
- Create photographic record
- Draft and final reports

1.3 REPORT FORMAT

This report describes the work carried out in August 2011 at five landfill sites at CAM-4. Results from soil and groundwater sampling, thermal monitoring, and visual inspection of the sites are also presented in the formats described in the ToR. An electronic version of the report and its component tables, figures and data files is included in an Addendum DVD-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 gathered for that landfill during the 2011 Landfill Monitoring Program. The following information is provided for each landfill:

- Visual inspection check-list
- Visual inspection drawing mark-up
- A selection of visual inspection photos
- Thermal monitoring summary (where applicable)
- Summary of 2011 soil analytical data
- Summary of 2011 groundwater analytical data
- Monitoring well development/sampling reports (where applicable)

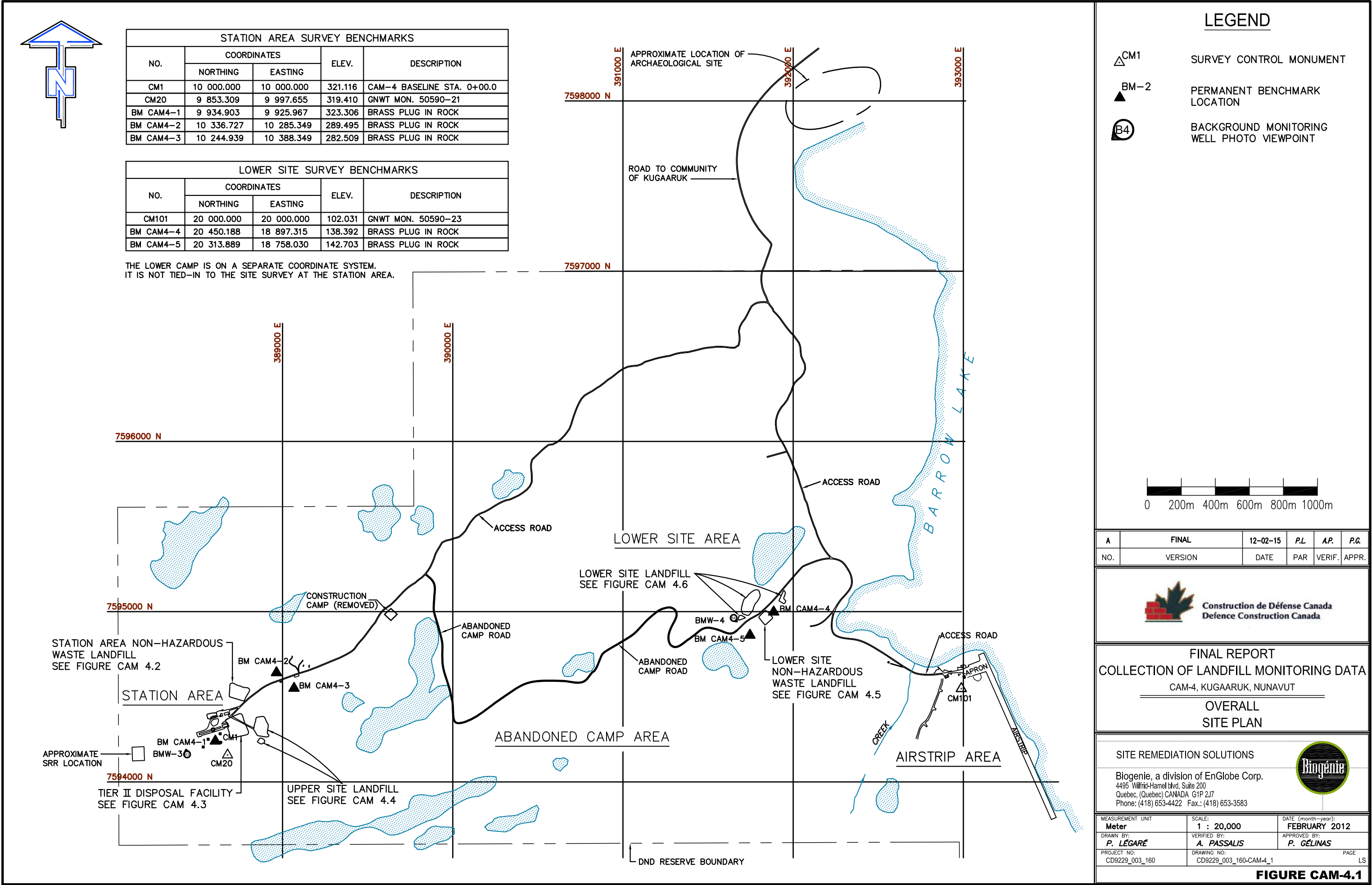
The printed copy of the report's photographic record includes only an index and thumbnail image of photos for each of the landfill areas. The actual photos are included in electronic format in the DVD-ROM attached to the report. Certificates of Analysis, QA/QC analytical results and field notes are attached in appendices.

1.4 PROJECT REFERENCES

The following references are specifically relevant to the 2011 Landfill Monitoring activities:

- A. *Request for Abbreviated Proposal – Consultant Services – Collection of Landfill Monitoring Data for the DEW Line Sites: PIN-3 Lady Franklin Point, PIN-4 Byron Bay, CAM-1 Jenny Lind Island, CAM-2 Gladman Point, CAM-3 Shepherd Bay, and CAM-4 Pelly Bay, Nunavut Territory - Kitikmeot Region. DCC Project # DLC MON (Kitik 09), February 19, 2009.*
- B. *Terms of Reference – Consulting Services for the Collection of Landfill Monitoring Data – PIN-3 Lady Franklin Point, PIN-4 Byron Bay, CAM-1 Jenny Lind Island, CAM-2 Gladman Point, CAM-3 Shepherd Bay, and CAM-4 Pelly Bay DEW LINE SITES, NUNAVUT TERRITORY, KITIKMEOT REGION DCC PROJECT #: DLC MON, October 7, 2008.*
- C. *Technical Proposal – The Collection of Landfill Monitoring Data for the DEW Line Sites: PIN-3 Lady Franklin Point, PIN-4 Byron Bay, CAM-1 Jenny Lind Island, CAM-2 Gladman Point, CAM-3 Shepherd Bay, and CAM-4 Pelly Bay DEW LINE SITES, Kitikmeot Region, Nunavut. Project Ref 6121-060, April 2008.*
- D. *Post-Field Progress Report, CAM-4 Landfill Monitoring 2011, August 29, 2011.*

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2 OUTLINE AND METHODOLOGY

2.1 FIELD PROGRAM STAFF

The 2011 on-site field program at CAM-4 took place from August 17 to 21, 2011. Biogenie subcontracted Sila Remediation Inc. from Igloolik, Nunavut to perform the fieldwork. The Sila field program was executed by Mr. Andrew Passalis and four (4) local Inuit representatives.

The team was made up of the following individuals:

- Andrew Passalis, Project Engineer
- Ronald Inutuinaq, Field Technician
- Barney Konana, Field Technician
- Rick Anguti, Field Technician
- Randy Inutuinaq, Wildlife Monitor

2.2 WEATHER CONDITIONS

Seasonally warm weather conditions were observed during the CAM-4 monitoring event, consisting of daily temperatures between 8-11 °C (early morning lows) and 11-15 °C (daytime highs) during the four days on site. Skies were mainly clear during the first two days with variable cloud cover on August 19th and 20th. Winds were generally from the east to the southeast, moderate and ranging between 10-30 km/h over the first three days and decreasing to 10-20 km/h from the west on the final day on site.

2.3 VISUAL INSPECTION

Data and information collected during the visual inspection of the CAM-4 landfills are included in the visual inspection datasheets. These datasheets include such inspection data as the location of settlement, erosion, frost action, sloughing and cracking, animal burrows, vegetation cover and stress, staining, seepage points, exposed debris, and any other features of note.

Each feature was identified with an alphabetical tag to be used consistently each year in an effort to track changes in condition for each specific feature. New features are added to the checklist and are noted as new observations. This letter is shown on the figures for each landfill along with the symbol for the particular feature. Some photos are provided for supplemental purposes only and do not warrant placement on the Figures (i.e., they are not specifically referenced in the report or within the tables).

Digital 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.

The photos were taken with a Sony DSC-TX5 10.2 megapixel (MP) digital camera. Full resolution digital jpg copies are furnished on a DVD-ROM appended with the final report. The photo log, including the local coordinates from where the photo was taken, orientation (relative to map north), feature of note and picture numbers are included with each landfill report.

2.4 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
- CCME Subsurface Assessment Handbook for Contaminated Sites, March 1994, EPC-NCSRP-48E (http://www.ccme.ca/publications/ceqg_rcqe.html)

For the 2011 monitoring event, 19 soil-sampling stations were visited. One surface sample (0-15 cm depth below surface) and one subsurface sample (40-50 cm depth below surface) were taken at each sampling station. No frozen ground or frost was encountered at the soil locations during the August 2011 sampling survey.

As specified in the ToR, the following soil sampling procedures were adhered to:

- Where required, the soil samples were collected from locations between 2-4 m 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
- An additional 10 % of the 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 requested parameters (TPH (F1-F3), total metals and PCBs) as specified by DCC. Table II below summarizes the soil sampling at CAM-4 during the August, 2011 field program.

Table II: Summary of Soil Sampling at CAM-4 – August 2011

Landfill Site	Soil Sample Locations						
SA NHWLF	BMW-1	MW-1	MW-2	MW-3	MW-4A/B	MW-6A/B	MW-7A/B
Tier II Disposal Facility	MW-5	MW-8	MW-9	MW-14A/B	MW-15	MW-16	
Upper Site Landfill	MW-10	MW-11	MW-12	MW-13			
LS NHWLF	MW-21	MW-22	MW-23				
Lower Site Landfill	MW-17	MW-18	MW-19	MW-20	C4-1	C4-2	C4-3
Background	BMW-3	BMW-4					

Notes:

Soil samples annotated as "MW" were collected as per the ToR between 2-4 metres from monitoring wells.

All soil samples were collected from two depths (0-15 cm and 40-50 cm). For 2011 sampling, total no. of soil samples = 73 samples (29 samples x 2 depths + 5 QA/QC + 5 (Inter-laboratory comparison) + 5 for Owner's Representative (ESG Archives)).

2.5 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)
- 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 were stabilized. Turbidity readings were also collected at each location. The samples were not acidified and were not filtered (as directed in ToR).

The 2011 field program included sampling only 14 of the 16 monitoring wells at CAM-4. Two (2) well (MW-10 and MW-13) locations at the Upper Site Landfill were dry at the time of monitoring and consequently could not be sampled. A summary of the status of the monitoring wells and the attempts made are summarized in Table III.

Monitoring Well Development and Sampling Record forms are included in appropriate sections in this report.

Table III: Summary of Groundwater Sampling at CAM-4 – August 2011

Landfill Site	Groundwater Sample Locations					
SA NHWLF	MW-1	MW-2	MW-6B	MW-7B		
Tier II Disposal Facility	MW-5	MW-8	MW-9	MW-14A	MW-15	BMW-1
Upper Site Landfill	MW-11	MW-12				
LS NHWLF	MW-21	MW-22	MW-23			
Lower Site Landfill	MW-17	MW-18	MW-19	MW-20		
Background	BMW-3	BMW-4				

Notes:

All monitoring wells were inspected and found to be in good condition with no significant concerns identified.

For 2011 sampling, total no. of water samples = 27 samples (21 monitoring well samples + 2 blind duplicate + 2 inter-laboratory duplicate + 1 field blank) + 1 travel blank.

The Detection Limits were raised for select metals due interference in the sample that made it difficult/impossible to see a specific metal at the usual calibration range. In order to differentiate between the interference and the analytes of interest, a dilution was necessary (see notes on Certificates of Analysis).

2.6 THERMAL MONITORING

All thermistors at the Tier II Disposal Facility, Upper Site Landfill and Lower Site Landfill were inspected and found to be in good physical condition with no significant concerns identified. With the exception of anomalous resistivity readings at VT-2 (bead #2) all accessible analogues/thermocouples were observed to be functioning properly. Battery levels in dataloggers VT-1, VT-6, VT-8 and VT-10 were noted to be below operating levels and consequently communication and data retrieval could not be completed from these locations. Battery levels in VT-2 and VT-3 were also noted to be “fair” with levels at the remaining

thermistors (VT-4, VT-5, VT-7, VT-9, VT-11 and VT-12) noted as being excellent. Internal memories were reset and clocks were synchronized in the functioning units using the Prolog software.

Specific detailed information regarding temperature data is contained in the report section on the Tier II Disposal Facility, Upper Site Landfill and Lower Site Landfill. Raw data retrieved directly from the dataloggers were provided to DCC with the field progress report on August 29, 2011. The manual thermal monitoring data is presented in tabular form on the thermistor inspection sheet for each landfill.

2.7 FIELD NOTES AND DATA

Field notes from the 2011 landfill monitoring program, including soil and water sampling are included in Appendix B for reference. Notes were written on waterproof field sheets and in field books and were scanned to an Adobe pdf document for future reference and back up. The locations of all observations and features for the visual inspection were recorded using a hand-held Garmin Oregon 300 GPS device which included a combination of continuous tracks and discrete waypoints. Data packages collected from the individual vertical thermistors were downloaded directly to a field laptop computer.

2.8 QUALITY CONTROL

Sila implemented standard sample collection techniques to decrease the likelihood of compromising collected samples. The methods used for sample collection are summarized in Sections 2.4 and 2.5 of this report. The following measures were taken to minimize sample cross-contamination:

- All samples were placed directly into the appropriate laboratory-supplied containers (for the particular analysis)
- Soil samples were collected with the use of decontaminated sampling equipment and/or single-use nitrile gloves
- Water samples were collected through the use of dedicated Waterra foot valves and tubing
- All samples were stored in chilled coolers/refrigerators throughout the field program and chilled coolers during subsequent transfer to the commercial airlines and respective laboratories.

Chain of Custody (COC) forms were completed by the Project Engineer after sample collection. The samples were refrigerated prior to off-site shipment by First Air Cargo to Maxxam (via Yellowknife), Exova in Edmonton and ESG, via Ottawa to Kingston, Ontario where they were checked in by laboratory representatives. All analysis was completed as specified on COC forms.

2.9 QA/QC PROCEDURES

Sila used standard QA/QC procedures as specified in the ToR and CCME Guidance Documents for this project. The following is a summary of the analytical QA/QC samples collected:

- 10 % Blind Duplicate Samples of soil and water were sent to Maxxam
- 10 % Interlab Duplicate Samples were sent to Exova (looking for variation in procedures causing significant difference in analytical results). Results for both the blind duplicates and the interlab duplicates can be found in Appendix C, as actual values and relative percent differences
- 10 % Archival Samples of soil to ESG (soils)

Maxxam has QA/QC measures for sample analysis. Maxxam QC samples will typically be introduced into the analytical stream on a batch basis, normally comprising 20 % - 30 % of the total sample throughput. A batch size of 15 - 20 typically includes one of each control standard, reference standard, surrogate spike, duplicate sample, and method blank. A control sample is a blank matrix fortified with analyte of interest and carried through all analytical steps to monitor lab performance (recovery & basis) on clean matrix. A reference sample is a sample with predetermined certified characteristics that undergoes the same processing as samples used to evaluate accuracy of procedure. A surrogate spike is an organic compound with similar chemical composition and behaviour in the analytical process used to monitor recovery in each sample. A duplicate sample occurs when client samples are analyzed in duplicate to monitor reproducibility in analysis and preparation. Finally, a method blank is a blank sample matrix carried through the same procedure as the samples and is used to monitor for process contamination.

Exova follows similar in-house QA/QC procedures. Maxxam and Exova QA/QC reports can be found in Appendix C.

3 STATION AREA NON-HAZARDOUS WASTE LANDFILL

3.1 BACKGROUND AND MONITORING PROGRAM

The Station Area Non-Hazardous Waste Landfill (SA NHWLF) is located approximately 200 m northeast of the former module train location and immediately north of the Tier II disposal facility. The landfill, including granular cover, encompasses a footprint of approximately 9,000 m² with the final cover extending between 2.5 to 6.0 m above the surrounding grade. This landfill was constructed for the disposal of non-hazardous wastes, site debris and DCC Tier I and Type A hydrocarbon-impacted soil. Landfill materials are contained by a granular perimeter berm and cover. Ten groundwater monitoring wells are installed at the landfill perimeter to monitor long-term performance, including one located upgradient (MW-16) and nine located downgradient of the landfill (MW1, MW2, MW3, MW4A, MW4B, MW6A, MW6B, MW7A and MW7B).

The long-term monitoring plan consists of visual monitoring and periodic collection of soil and groundwater samples. The 2011 monitoring of this landfill includes visual inspection to assess landfill performance and the collection of soil and groundwater samples to monitor for the presence of leachate. Locations of groundwater monitoring wells and soil samples are identified on Figure CAM-4.2.

3.2 VISUAL INSPECTION REPORT

The visual inspection of the SA NHWLF was conducted on August 20, 2011. The Visual Inspection Checklist/Report has been completed as per the ToR and is included as Table IV of this report.

Settlement

Minor settlement was noted at two locations on the landfill surface, including relatively small localized depressions extending parallel to the top of the southwest facing slope (Feature A) and located on the north side slope (Feature B). The Feature A depressions on the southwest crest area appear consistent with observations made during the 2010 assessment, whereas Feature B depressions were not noted during the previous 2010 assessment. These features have an acceptable severity rating.

Erosion

Evidence of erosion was noted at one location on the northwest corner slope/toe of the landfill (Feature C). The erosion was limited to a relatively small area where washing of fines from the more resistant cover material has occurred. Discontinuous areas of orange (rust) coloured staining was also noted on the north slope and within the erosion feature. This feature has an acceptable severity rating, and was not noted during the previous assessment.

Frost Action

No evidence of frost action was noted.

Evidence of Burrowing Animals

No indications of burrowing animals were noted.

Re-establishment of Vegetation

No evidence of vegetation was noted.

Staining

As noted above, discontinuous areas of orange (rust) coloured staining were noted on the northwest corner slope of the landfill, extending from approximately 2/3 upslope to the toe of the landfill cover.

This feature (Feature C) also appears to be associated with more concentrated staining along an erosion path that appears near the toe of the slope. This feature appears consistent with previous observations during the 2010 inspection and has an acceptable severity rating.

Seepage Points

A suspected seepage path was noted below the stained areas on the northwest corner of the landfill cover. There was no visible seepage water at the time of the inspection; however, the soil was heavily stained along the drainage path that extended perpendicular to the slope near the toe of the landfill. The seepage/erosion path is included under Feature C, along with the discontinuous stained areas upslope. This feature appears consistent with observations made during the previous 2010 assessment.

Debris

Evidence of surface debris was noted at one location on the crest on the southwest side of the landfill (Feature D). The debris consisted of a partially exposed steel bar 2 cm in diameter and exposed 6 cm above the landfill's surface. This feature was not noted during the previous assessment.

Presence/Condition of Monitoring Instruments

All monitoring well installations were observed to be in good condition at the landfill. Free-phase hydrocarbon product was noted at the bottom of MW-3, extending between 4.04 m and 4.32 m below ground surface. In addition, strong hydrocarbon odours were also noted in MW-16 located upgradient of the landfill.

Other Features of Note

Surface runoff from the station area is directed in a northeast direction along the main access road that borders the southeast side of the landfill. Minor to moderate erosion was observed along the drainage path (Feature E), extending up to 20 cm deep at the downgradient end east of the landfill. The erosion appears consistent with observations made during the previous 2010 assessments and is currently not in contact with the landfill cover.

Two small pieces of black geotextile material were noted in an isolated area immediately south of the landfill (Feature F). This feature was not noted during the previous 2010 assessment.

Erosion resistant cover material was noted missing from a 5 m x 1 m-wide area along the northwest crest of the landfill (Feature G).

Discussion

The SA NHWLF performance with respect to containment of the debris within the landfill is rated as acceptable. A visual inspection report, including supporting photos and drawing, is presented in the following pages.

Table IV: Visual Inspection Checklist / Inspection Report – SA NHWLF

DEW LINE CLEANUP: POST-CONSTRUCTION – LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 of 2

SITE NAME: CAM-4 PELLY BAY
LANDFILL DESIGNATION: SA NHWLF
DATE OF INSPECTION: AUGUST 20, 2011
DATE OF PREVIOUS INSPECTION: AUGUST 22, 2010
INSPECTED BY: A. PASSALIS
REPORT PREPARED BY: A. PASSALIS
The inspector/reporter represents to the best of his/her knowledge that 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.

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT**LANDFILL VISUAL INSPECTION**

Site Name: CAM-4 - Pelly Bay
 Landfill: Station Area Non-Hazardous Waste Landfill
 Designation: New Landfill
 Date Inspected: August 22, 2010
 Inspected by: Andrew Passalis, P.Eng.
 Sila Remediation Inc.

Signature:


STATION AREA NON-HAZARDOUS WASTE LANDFILL

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE A See Figure CAM-4.2 (southwest crest)	2-3 m	0.5-1 m	0.15 m	Occasional	Minor depressions	SNH-20-22	Acceptable	Minor linear depression parallel at top of southwest slope.
		FEATURE B See Figure CAM-4.2 (north side slope) NEW OBS.	0.3 - 0.5 m	0.15 - 0.3 m	0.05 - 0.1 m		Minor depressions	SNH-8, 9	Acceptable	Minor depressions on north side slope.
Erosion	Yes	FEATURE C See Figure CAM-4.2 (northwest corner slope / toe) NEW OBS.	4 m	0.5 m	0.05 - 0.1 m	Isolated	Minor erosion	SNH-10, 11	Acceptable	Associated with rust coloured staining.
Frost Action	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Animal Burrows	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Staining	Yes	FEATURE C See Figure CAM-4.2 (northwest corner slope)	5-10 m	4-5 m	N/A	Isolated (<1%)	Discontinuous areas of rust-coloured staining	SNH-7, 10, 11	Acceptable	Stained areas on northwest sideslope. No seepage noted at time of inspection.
Vegetation Stress	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Seepage Points	No	FEATURE C See Figure CAM-4.2 (northwest corner slope)	N/A	N/A	N/A	N/A	Invisible seepage water	SNH-7, 10, 11	Acceptable	Isolated.
Debris Exposed	Yes	FEATURE D See Figure CAM-4.2 (southwest crest) NEW OBS.	0.06 m	0.02 m	Unknown	Isolated	Partially exposed steel bar	SNH-23	Acceptable	Vertical bar exposed at crest.
Presence/Condition of Monitoring Instruments	Yes	See Figure CAM-4.2	N/A	N/A	N/A	None	BMW-1, MW-1, -2, -3, -4A/B, -6A/B and -7A/B	SNH-B1, 1W, 2W, 3W, 4W, 6W, 7W	N/A	All monitoring wells in good condition.
Other Features of Note:	Yes	FEATURE E See Figure CAM-4.2 (south along road)	100 m	1.0 - 1.5 m	5 - 20 cm	N/A	Runoff / drainage along south side of landfill	SNH-1	Acceptable	Erosion not in contact with landfill.
		FEATURE F See Figure CAM-4.2 (southwest crest) NEW OBS.	0.15 - 0.3 m	0.1 - 0.3 m	Unknown	N/A	Two areas of exposed geotextile material	SNH-28	N/A	Located south of landfill toe.
		FEATURE G See Figure CAM-4.2 (northwest crest) NEW OBS.	5 m	1 m	0.03 m	Isolated	Missing erosion resistant cover material	SNH-15	Acceptable	Located on northwest crest.
Additional Photos	Yes	See Figure CAM-4.2 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	Not Observable	General photos for documentation. No features of note.
Overall Landfill Performance:		Acceptable								

3.3 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for the SA NHWLF has been completed as per the ToR and is included as Table V hereafter.

Table V: Preliminary Stability Assessment – SA NHWLF

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

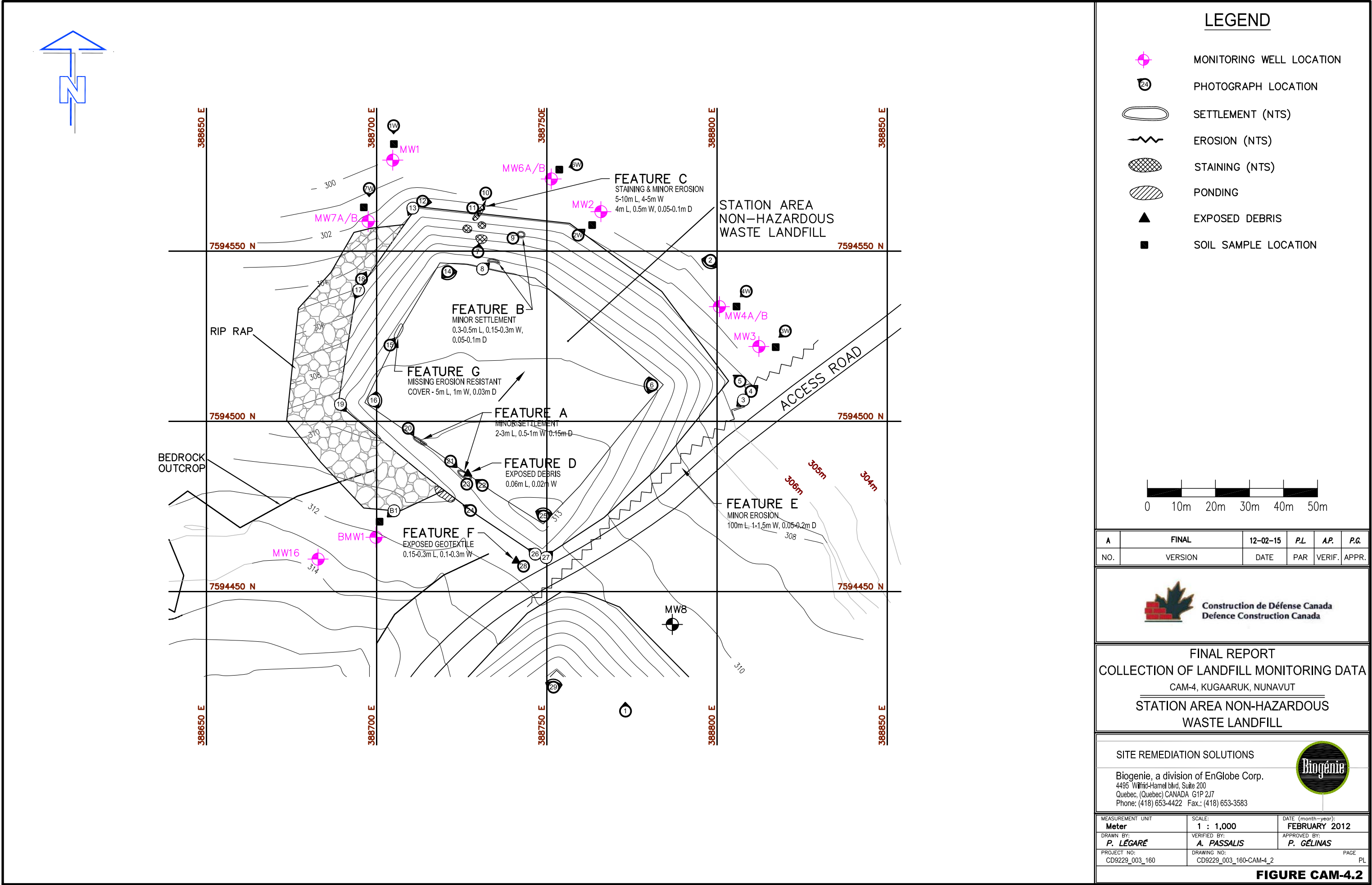
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears 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

3.4 LOCATION PLAN

The Location Plan for the SA NHWLF has been completed as per the ToR and is included in the following page as Figure CAM-4.2.

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3.5 PHOTOGRAPHIC RECORDS

The Photographic Record for the SA NHWLF has been completed as per the ToR and is included in Table VI hereafter. The Photographic Record contains an index and “thumbnail” photographs only. Full-sized photographs are contained in the Addendum DVD-ROM.

Table VI: Landfill Visual Inspection Photo Log – SA NHWLF

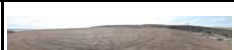
(SNH-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
1		C411_4765	18/08/2011	388772.9	7594415	View looking looking N at SA NHWLF from top of Tier II Disposal Facility
2		C411_4805	18/08/2011	388797.5	7594548	Panoramic view looking SW to WNW from east of SA NHWLF
3		C411_4888	20/08/2011	388807.8	7594506	View looking SW along drainage feature extending along southeast side of landfill - FEATURE D
4		C411_4889	20/08/2011	388809.5	7594508	View looking NE along southeast toe from south corner of landfill
5		C411_4890	20/08/2011	388807.5	7594510	View looking NW along northeast toe from east corner of landfill
6		C411_4891	20/08/2011	388780.8	7594511	Panoramic view looking NW to SW across surface from east corner of landfill
7		C411_4894	20/08/2011	388729.9	7594549	View looking N at rust-coloured staining on northeast side slope, discontinuous/patchy starting 5m below crest to toe. - FEATURE C
8		C411_4895	20/08/2011	388731.7	7594545	View looking NE at minor settlement below crest on northeast side slope (0.5m L, 0.15m W, 0.051m D) - FEATURE B
9		C411_4896	20/08/2011	388740.7	7594553	View looking NE at minor settlement on northeast side slope (0.3m L, 0.3m W, 0.1m D) - FEATURE B
10		C411_4897	20/08/2011	388732	7594567	View looking SW at rust-coloured staining at seepage point near north toe of landfill (staining 4m wide at base) - FEATURE C
11		C411_4898	20/08/2011	388729.6	7594563	Rust-coloured staining at seepage point near north toe of landfill. - FEATURE C
12		C411_4899	20/08/2011	388714	7594564	View looking E along north toe of landfill
13		C411_4900	20/08/2011	388711.2	7594563	View looking SW along northwest toe of landfill
14		C411_4901	20/08/2011	388721	7594544	Panoramic view looking E to SW across surface from north corner of landfill
15		C411_4902	20/08/2011	388703.9	7594522	View looking NE at area of missing erosion resistant cover material on west crest of landfill - FEATURE G

Table VI: Landfill Visual Inspection Photo Log – SA NHWLF (Continued)

(SNH-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
16		C411_4903	20/08/2011	388699.1	7594507	Panoramic view looking NE to SE across surface from west corner of landfill
17		C411_4904	20/08/2011	388694.8	7594539	View looking SSW along northwest toe of landfill
18		C411_4905	20/08/2011	388695.3	7594541	View looking NNE along northwest toe of landfill
19		C411_4906	20/08/2011	388689.3	7594505	View looking SE along southwest toe from west corner of landfill
20		C411_4907	20/08/2011	388709.9	7594497	View looking SE at linear depression located along southwest crest of landfill (3m L, 0.5m W, 15cm D) - FEATURE A
21		C411_4908	20/08/2011	388722	7594488	View looking SE at linear depression located along southwest crest of landfill (2m L, 1m W, 15cm D) - FEATURE A
22		C411_4909	20/08/2011	388730.3	7594480	View looking NW at linear depression located along southwest crest of landfill (2m L, 1m W, 15cm D) - FEATURE A
23		C411_4910	20/08/2011	388727.5	7594484	View of exposed steel bar on southwest crest of landfill (6cm L, 2cm dia.) - FEATURE D
24		C411_4911	20/08/2011	388727.2	7594474	View looking NW at minor ponding along southwest toe of landfill
25		C411_4912	20/08/2011	388750	7594472	Panoramic view looking NW to NE across surface from south corner of landfill
26		C411_4913	20/08/2011	388746.8	7594460	View looking NW along southwest toe from south corner of landfill
27		C411_4914	20/08/2011	388749.4	7594460	View looking NE along southeast toe from south corner of landfill
28		C411_4915	20/08/2011	388743.3	7594458	Partially exposed geotextile located near south corner of landfill
29		C411_4943	20/08/2011	388752	7594422	Panoramic view looking NW to NE at SA NHWLF from north corner of Tier II Disposal Facility

Table VI: Landfill Visual Inspection Photo Log – SA NHWLF (Continued)

(SNH-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Soil Sampling						
MW-3		C411_4801	18/08/2011	388816.8	7594522	Sampling location C4-3W located downgradient of SA NHWLF
3W		C411_4802	18/08/2011	388820.2	7594526	View looking looking SW at C4-3W soil sample location
MW-4		C411_4803	18/08/2011	388806	7594534	Sampling location C4-4W located downgradient of SA NHWLF
4W		C411_4804	18/08/2011	388808.9	7594538	View looking looking SW at C4-4W soil sample location
MW-2		C411_4806	18/08/2011	388763.7	7594558	Sampling location C4-2W located downgradient of SA NHWLF
2W		C411_4807	18/08/2011	388759.3	7594555	View looking looking NE at C4-2W soil sample location
MW-6		C411_4808	18/08/2011	388753.1	7594574	Sampling location C4-6W located downgradient of SA NHWLF
6W		C411_4809	18/08/2011	388759.5	7594575	View looking looking WSW at C4-6W soil sample location
MW-1		C411_4810	18/08/2011	388705.1	7594581	Sampling location C4-1W located downgradient of SA NHWLF
1W		C411_4811	18/08/2011	388705	7594586	View looking looking S at C4-1W soil sample location
MW-7		C411_4812	18/08/2011	388696.4	7594563	Sampling location C4-7W located downgradient of SA NHWLF
7W		C411_4813	18/08/2011	388697.7	7594568	View looking looking S at C4-7W soil sample location
BMW-1		C411_4814	18/08/2011	388700.9	7594471	Sampling location C4-BMW1 located upgradient of SA NHWLF
B1		C411_4815	18/08/2011	388704.6	7594474	View looking looking SW at C4-BMW1 soil sample location

3.6 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results and the evaluation of analytical data for the 2011 SA NHWLF samples are presented in Tables VII and VIII below. Field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Appendix C at the end of this report.

Table VII: Soil Chemical Analysis Results –
Metals and PCBs – SA NHWLF

Sample Name	Location	Depth [cm]	As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Hg [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	PCBs [mg/kg]
C4 11- 1WA	MW-1	0-15	2	0.3	41	6	8	5	0.05	20	31	<0.010
C4 11- 1WB		40-50	2	0.2	28	6	9	6	<0.05	14	36	<0.010
C4 11- 2WA	MW-2	0-15	1	0.2	21	5	7	5	<0.05	12	31	<0.010
C4 11- 2WB		40-50	2	0.2	25	6	8	6	<0.05	13	33	<0.010
C4 11- 3WA	MW-3	0-15	2	0.2	23	5	7	8	<0.05	12	33	<0.010
C4 11- 3WB		40-50	2	0.2	24	6	9	6	<0.05	12	31	<0.010
C4 11- 4WA	MW4-A MW4-B	0-15	1	0.2	14	4	<5	5	<0.05	8	22	<0.010
C4 11- 4WB		40-50	1	<0.1	38	4	<5	4	<0.05	17	20	<0.010
C4 11- 6WA	MW6-A MW6-B	0-15	1	<0.1	20	4	8	4	<0.05	12	29	<0.010
C4 11- 6WB		40-50	<1	<0.1	20	4	<5	3	<0.05	9	22	<0.010
C4 11- 7WA	MW7-A MW7-B	0-15	1	<0.1	25	6	8	5	<0.05	13	31	<0.010
C4 11- BD2		0-15	<1	0.1	29	5	6	4	<0.05	13	26	<0.010
C4 11- 7WB		40-50	<1	<0.1	29	5	<5	4	<0.05	14	22	<0.010
C4 11- 16WA	MW-16	0-15	2	<0.1	23	6	11	5	<0.05	12	35	<0.010
C4 -11 16WB		40-50	2	<0.1	29	7	11	8	<0.05	16	41	<0.010
C4 11- BMW1A	BMW-1	0-15	2	<0.1	18	5	6	4	<0.05	10	31	<0.010
C4 11- BMW1B		40-50	3	<0.1	46	8	13	8	<0.05	20	46	<0.010

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Table VIII: Soil Chemical Analysis Results – PHCs and BTEX –
SA NHWLF

Sample Name	Location	Depth Below Grade [cm]	Parameters						
			Benzene [mg/kg]	Toluene [mg/kg]	Ethylbenzene [mg/kg]	Xylenes [mg/kg]	PHC(F1) [mg/kg]	PHC(F2) [mg/kg]	PHC(F3) [mg/kg]
C4 11- 1WA	MW-1	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 1WB		40-50	0.0060	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 2WA	MW-2	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	23
C4 11- 2WB		40-50	0.0067	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 3WA	MW-3	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 3WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 4WA	MW4-A MW4-B	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	20
C4 11- 4WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 6WA	MW6-A MW6-B	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 6WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	78	30
C4 11- 7WA	MW7-A MW7-B	0-15	<0.0050	<0.020	<0.010	<0.040	<12	11	72
C4 11- BD2		0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 7WB		40-50	0.0060	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 16WA	MW-16	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 -11 16WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- BMW1A	BMW-1	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- BMW1B		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀; does not include BTEX fractionsPHC (F2): Petroleum hydrocarbon C_{>10} to C₁₆PHC (F3): Petroleum hydrocarbon C_{>16} to C₃₄

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Table IX: Evaluation of 2011 Soil Analytical Data – SA NHWLF

Parameter	2011
Copper	Concentrations ranged between <5-13 mg/kg with detectable concentrations noted in all but four sample locations (MW-4, surface and depth; MW-6, depth and MW-7 - depth) with an overall mean concentration of 6.9 mg/kg. The highest concentrations were observed at upgradient location MW-16 (11 mg/kg, surface and depth) and downgradient locations MW-1 and MW-3 (9 mg/kg - depth).
Nickel	Concentrations ranged between 8-20 mg/kg with detectable concentrations at all sample locations and a mean concentration of 13.1 mg/kg. The most elevated concentrations were observed at MW-16 (16 mg/kg - depth) located upgradient and MW-4 (17 mg/kg - depth) and MW-1 (20 mg/kg - surface) both at downgradient locations. The lowest concentrations were observed at MW-4 (8 mg/kg - surface) and MW-6 (9 mg/kg - depth), both located at downgradient locations.
Cobalt	Concentrations ranged between 4-7 mg/kg with a mean of 5.3 with detectable concentrations noted at all locations. The highest concentration was observed at depth in MW-16 (upgradient location).
Cadmium	Concentrations ranged between <0.1-0.3 mg/kg with detectable concentrations noted at surface and depth at MW-1, MW-2, MW-3 and MW-4 (surface only). The highest concentration was observed at surface in MW-1 (downgradient location).
Lead	Concentrations ranged between 3-8 mg/kg with a mean of 5.3. Trace concentrations were observed at all locations with the highest concentration noted at depth at MW-16 (upgradient location) and surface at MW-3 (downgradient location). Concentrations of 6 mg/kg were also noted at depth at each MW-1, MW-2 and MW-3.
Zinc	Concentrations ranged between 20-41 mg/kg with a mean of 29.8 mg/kg. The most elevated concentrations were noted at upgradient location MW-16 (35 mg/kg, surface and 41 mg/kg - depth) and downgradient location MW-1 (36 mg/kg - depth). The lowest concentrations were noted at MW-4 (downgradient location).
Chromium	Concentrations ranged between 14-41 mg/kg with a mean of 25.7 mg/kg. Elevated concentrations were observed at MW-1 (41 mg/kg - surface) and MW-4 (38 mg/kg - depth) both situated downgradient of the landfill. Elevated concentrations were also noted downgradient at MW-7 and MW-16 (29 mg/kg - depth).
Arsenic	Concentrations ranged between <1-2 mg/kg with detectable concentrations noted at all but two sample locations (MW-6 and MW-7 - depth).
Mercury	Concentrations ranged between <0.05-0.05 mg/kg with detectable concentrations noted one surface location, MW-1 located downgradient of the landfill. All other samples reported concentrations less than the method detection limit (0.05 mg/kg).
PCBs	All reported concentrations were less than the method detection limit (0.01 mg/kg).
TPH	Concentrations ranged between <10-108 mg/kg with detectable F2 and/or F3 concentrations noted at four downgradient locations, including: MW-2 (23 mg/kg - surface), MW-4 (20 mg/kg - surface), MW-6 (108 mg/kg - depth) and MW-7 (83 mg/kg - surface).

3.7 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results and evaluation of analytical data for the 2011 SA NHWLF samples are presented in Tables X and XI. Installations MW-16 (upgradient location) and MW-3, MW-4A and 4B, MW-6A and MW-7A (downgradient locations) were dry or contained insufficient sample volume at the time of monitoring to collect groundwater samples for analysis. Similarly, minimal sample volumes at MW-1 and MW-2 permitted only the collection of a single 125 mL bottle for metals analysis. Groundwater samples collected as part of the QA/QC program are presented in Appendix C at the end of this report.

Table X: Groundwater Chemical Analysis Results – SA NHWLF

Sample Name	Location	As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Hg [ug/L]	Ni [mg/L]	Zn [mg/L]	PCBs [mg/L]	TPH [mg/L]
C4 11-1W	MW-1	0.003	0.0003	0.70	0.012	0.15	0.0086	0.010 ⁽²⁾	0.72	0.13		
C4 11-2W	MW-2	<0.001	0.0002	0.068	0.0024	0.023	0.0020	0.012 ⁽²⁾	0.14	0.093		
C4 11-6W	MW-6	0.005	<0.0002	0.021	0.0040	0.026	0.020	0.029 ⁽²⁾	0.028	0.24	<0.000050	17
C4 11-7W	MW-7	0.004	0.0004	0.023	0.017	0.045	0.056	0.072 ⁽²⁾	0.047	27 ⁽¹⁾	<0.000050	<2
C4 11-BMW1	BMW-1	<0.01	<0.002	0.13	0.010	0.054	0.008	0.016 ⁽²⁾	0.11	0.11	<0.0017	

(1): Detection limits raised due to dilution to bring analyte within the calibrated range

(2): Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Table XI: Evaluation of 2011 Groundwater Analytical Data – SA NHWLF

Parameter	2011
Copper	Concentrations ranged between 0.023-0.15 mg/L, with the highest concentration noted at MW-1, approximately 6 times higher than the lowest concentrations noted at MW-2 (0.023 mg/kg) and MW-6B (0.026 mg/kg).
Nickel	Concentrations ranged between 0.028-0.72 mg/L, with the highest and lowest concentrations noted at downgradient locations MW-1 and MW-6B, respectively.
Cobalt	Concentrations ranged between 0.0024-0.017 mg/L, with the highest concentration noted at the downgradient location MW-7B. Concentrations at the remaining downgradient sample locations ranged between 1.4 to 7 times lower than that of the MW-7B concentration.
Cadmium	Concentrations ranged between <0.0002-0.0004 mg/L. The highest and lowest concentrations were noted at MW-7B and MW-6B, respectively.
Lead	Concentrations ranged between 0.0020-0.056 mg/L, with the highest concentrations noted at downgradient locations MW-7B (0.056 mg/L) and MW-6B (0.020 mg/L), whereas the lowest concentration was MW-1.
Zinc	Concentrations ranged between 0.093-27 mg/L. The most elevated concentration was noted at downgradient location MW-7B, approximately three orders of magnitude higher than the other three downgradient sample locations.
Chromium	Concentrations ranged between 0.021-0.70 mg/L, with the highest concentrations observed at downgradient locations MW-1 (0.70 mg/L) and MW-2 (0.068 mg/L). The lowest concentrations were noted at downgradient locations MW-6B (0.021 mg/L) and MW-7B (0.023 mg/L).
Arsenic	Concentrations ranged between <0.001-0.005 mg/L, with the highest and lowest concentrations noted at MW-6B and MW-2, respectively.
Mercury	Concentrations ranged between 0.00001-0.000072 mg/L, with the highest concentrations observed at MW-6B (0.000029 mg/L) and MW-7B (0.000072 mg/kg). Concentrations at MW-1 and MW-2 were approximately 6-7 times lower than that of MW-7B.
PCBs (2 wells sampled)	All reported concentrations were less than the method detection limit (0.00005 mg/L).
TPH (2 wells sampled)	Concentrations ranged between <2-17 mg/L with the highest levels detected at MW-6B located downgradient of the landfill. Free product was not detected at this location, however a strong hydrocarbon odour was noted at the time of sampling.

3.8 MONITORING WELL SAMPLING/INSPECTION LOGS

The monitoring well sampling and inspection logs for MW-1, MW-2, MW-3, MW-4A, MW-4B, MW-6A, MW-6B, MW-7A and MW-7B are presented in this section.

2011 Monitoring Well Sampling Log (MW-1)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-1					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.50					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	1.50					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	2.21		
Well height above ground (m):	0.54		Depth to bottom (m):	2.29		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	0.09		Evidence of sludge:	-		
Well volume of water (L):	0.17		Evidence of freezing/siltation:	-		
Static water level* (m):	1.67		Field parameters not measured due to limited sample volume.			
Length of screen collecting water (m):	0.09					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	18-Aug-11			Date and Time Collected:	18-Aug-11	
Sample Number - Water:	C411-1W			Sample Number - Soil:	C411-1WA	
					C411-1WB	
Sample Containers:	1x25mL plastic			Sample Containers:	3x125mL glass	
	Limited sample volume				3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Light brown sand, f-m grained, some gravel and cobbles, dry-damp	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-2)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-2					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.50					
Length of screened section (m):	2.00					
Depth to top of screen* (m):	1.50					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	2.08		
Well height above ground (m):	0.60		Depth to bottom (m):	2.19		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	0.11		Evidence of sludge:	-		
Well volume of water (L):	0.22		Evidence of freezing/siltation:	-		
Static water level* (m):	1.48		Field parameters not measured due to limited sample volume.			
Length of screen collecting water (m):	0.09					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling			Soil Sampling			
Date & Time Collected:	29-Aug-09		Date and Time Collected:	29-Aug-09		
Sample Number - Water:	C411-2W		Sample Number - Soil:	C411-2WA		
				C411-2WB		
Sample Containers:	1x25mL plastic		Sample Containers:	3x125mL glass		
	Limited sample volume			3x125mL glass		
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:	C&C, HC odour		Soil Description:	Brown sand, f-med.gr. trace gravel, dry-damp		
Sampling Equipment Decontamination (Y/N):	N, dedicated		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	0		Number Washes:	1		
Number Rinses:	0		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-3)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-3					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.50					
Length of screened section (m):	2.00					
Depth to top of screen* (m):	1.50					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	- (dry)		
Well height above ground (m):	0.69		Depth to bottom (m):	5.17		
Diameter of well (m):	0.05		Free product thickness (mm):	28.5		
Calculations						
Depth of water (m):	-		Evidence of sludge:	-		
Well volume of water (L):	-		Evidence of freezing/siltation:	-		
Static water level* (m):	-		Well not sampled due to presence of free product.			
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:				Date and Time Collected:	18-Aug-11	
Sample Number - Water:				Sample Number - Soil:	C411-3WA	
					C411-3WB	
Sample Containers:				Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:				Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:				Soil Description:	Brown sand and silt, trace gravel	
Sampling Equipment Decontamination (Y/N):	n/a			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	-			Number Washes:	1	
Number Rinses:	-			Number Rinses:	1	

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N/O = No Odour

2011 Monitoring Well Sampling Log (MW-4A)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-4A					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.00					
Length of screened section (m):	1.38					
Depth to top of screen* (m):	2.58					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	- (dry)		
Well height above ground (m):	0.49		Depth to bottom (m):	4.09		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	-		Evidence of sludge:	-		
Well volume of water (L):	-		Evidence of freezing/siltation:	-		
Static water level* (m):	-					
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:	n/a					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	-		Date and Time Collected:	18-Aug-11		
Sample Number - Water:			Sample Number - Soil:	C411-4WA		
				C411-4WB		
Sample Containers:			Sample Containers:	3x125mL glass		
				3x125mL glass		
Procedure/Equipment:			Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:			Soil Description:	Light brown sand, some silt and gravel		
Sampling Equipment Decontamination (Y/N):	n/a		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	-		Number Washes:	1		
Number Rinses:	-		Number Rinses:	1		

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2011 Monitoring Well Sampling Log (MW-4B)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-4B					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	2.80					
Length of screened section (m):	2.28					
Depth to top of screen* (m):	0.48					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	- (dry)		
Well height above ground (m):	0.54		Depth to bottom (m):	2.14		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations				Notes		
Depth of water (m):	-		Evidence of sludge:	-		
Well volume of water (L):	-		Evidence of freezing/siltation:	-		
Static water level* (m):	-					
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:	n/a					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	-		Date and Time Collected:	18-Aug-11		
Sample Number - Water:			Sample Number - Soil:	C411-4WA		
				C411-4WB		
Sample Containers:			Sample Containers:	3x125mL glass		
				3x125mL glass		
Procedure/Equipment:			Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:			Soil Description:	Light brown sand, some silt and gravel		
Sampling Equipment Decontamination (Y/N):	n/a		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	-		Number Washes:	1		
Number Rinses:	-		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

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C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-6A)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-6A					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.27					
Length of screened section (m):	2.26					
Depth to top of screen* (m):	0.50					
Measured Data						
Condition of well:	Good, padlock broken		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	- (dry)		
Well height above ground (m):	0.58		Depth to bottom (m):	5.17		
Diameter of well (m):	0.05		Free product thickness (mm):	1.91		
Calculations						
Depth of water (m):	-		Evidence of sludge:	-		
Well volume of water (L):	-		Evidence of freezing/siltation:	-		
Static water level* (m):	-					
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:	n/a					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	-		Date and Time Collected:	18-Aug-11		
Sample Number - Water:			Sample Number - Soil:	C411-6WA		
				C411-6WB		
Sample Containers:			Sample Containers:	3x125mL glass		
				3x125mL glass		
Procedure/Equipment:			Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:			Soil Description:	Brown sand, f-med gr. some gravel		
Sampling Equipment Decontamination (Y/N):	n/a		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	-		Number Washes:	1		
Number Rinses:	-		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

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C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-6B)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-6B					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.27					
Length of screened section (m):	2.26					
Depth to top of screen* (m):	0.50					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	1.57	
Well height above ground (m):	0.62			Depth to bottom (m):	2.28	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations				Notes		
Depth of water (m):	0.71			Evidence of sludge:	-	
Well volume of water (L):	1.39			Evidence of freezing/siltation:	-	
Static water level* (m):	0.95					
Length of screen collecting water (m):	0.71					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	1.5	2.7	6.8	442	132	C&C, HC odour
Water Sampling				Soil Sampling		
Date & Time Collected:	18-Aug-11			Date and Time Collected:	18-Aug-11	
Sample Number - Water:	C411-6W			Sample Number - Soil:	C411-6WA	
					C411-6WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, HC odour			Soil Description:	Brown sand, f-med gr. some gravel	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

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C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-7A)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-7A					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.57					
Length of screened section (m):	1.00					
Depth to top of screen* (m):	3.45					
Measured Data						
Condition of well:	Good, padlock broken		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	- (dry)		
Well height above ground (m):	0.59		Depth to bottom (m):	5.06		
Diameter of well (m):	0.05		Free product thickness (mm):	2.7		
Calculations				Notes		
Depth of water (m):	-		Evidence of sludge:	-		
Well volume of water (L):	-		Evidence of freezing/siltation:	-		
Static water level* (m):	-		Well not sampled due to presence of free product.			
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:	n/a					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	-		Date and Time Collected:	18-Aug-11		
Sample Number - Water:			Sample Number - Soil:	C411-7WA + inter QA		
				C411-BD2		
				C411-7WB		
Sample Containers:			Sample Containers:	8x125mL glass		
				3x125mL glass		
				3x125mL glass		
Procedure/Equipment:			Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:			Soil Description:	Brown sand, with gravel, well graded damp, wet at 50		
Sampling Equipment Decontamination (Y/N):	n/a		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	-		Number Washes:	1		
Number Rinses:	-		Number Rinses:	1		

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N/O = No Odour

2011 Monitoring Well Sampling Log (MW-7B)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-7B					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	2.74					
Length of screened section (m):	1.95					
Depth to top of screen* (m):	0.71					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	0.90		
Well height above ground (m):	0.71		Depth to bottom (m):	1.92		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	1.03		Evidence of sludge:	-		
Well volume of water (L):	2.01		Evidence of freezing/siltation:	Siltation		
Static water level* (m):	0.19					
Length of screen collecting water (m):	0.50					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	2.1	3.4	8.9	660	>1000	Brown, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	18-Aug-11			Date and Time Collected:	18-Aug-11	
Sample Number - Water:	C411-7W			Sample Number - Soil:	C411-7WA + inter QA	
					C411-BD2	
					C411-7WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	8x125mL glass	
					3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbiditymeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	Brown, N/O			Soil Description:	Brown sand, with gravel, well graded damp, wet at 50	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

4 TIER II DISPOSAL FACILITY

4.1 BACKGROUND AND MONITORING PROGRAM

The Tier II Disposal Facility was constructed on the east side of the station pad, east of the former warehouse and immediately upgradient of the Upper Site Landfill. The landfill was constructed with a double containment system consisting of a geomembrane liner system and the placement of sufficient surface fill to promote freezing of the landfill contents.

The facility encompasses a footprint of approximately 13,400 m² with the final cover extending between 2-6 m above the surrounding grade. Seven (7) groundwater monitoring wells are installed at the landfill perimeter, and 4 thermistors are installed within the landfill footprint to monitor freeze-back conditions.

The long-term monitoring plan consists of visual monitoring, collecting of soil and groundwater samples and monitoring of subsurface ground temperatures.

The 2011 monitoring of this landfill includes visual inspection to verify for evidence of settlement or erosion, collection of soil and groundwater samples to monitor for the presence of leachate and retrieval of data from the thermistors. The locations of groundwater monitoring wells, soil samples and thermistor installations are identified on Figure CAM-4.3.

Soil at all stations was sampled as specified. Groundwater from each of the monitoring wells was sampled as per the ToR, with the exception of MW-14B which was dry at the time of sampling.

4.2 VISUAL INSPECTION REPORT

The visual inspection of the Tier II Disposal Facility was conducted on August 20, 2011. The Visual Inspection Checklist/Report has been completed as per the ToR and is included as Table VII of this report.

Settlement

Evidence of minor settlement was noted at one location (Feature A), consisting of a small linear depression situated mid-slope on the northeast side of the facility. The depression is located upslope from one of the seepage points observed along the northeast toe. This feature was not observed during the previous 2010 assessment.

Erosion

Evidence of minor surface erosion was noted at three locations, including features extending along the southwest (Feature B) and north (Feature C) sides/toe, and one newly observed area on the northeast side slope of the facility (Feature D). Features B and C consist of shallow surface erosion (washing of fines) associated with drainage and minor ponding along the southwest and north margins of the facility. Similar erosion features were noted along the margins of the facility in the 2010 assessment with no further evidence of additional erosion occurring. These affected areas are currently not in direct contact with the landfill cover, however additional erosion may continue to develop along the margins of the facility until the drainage paths stabilize.

Feature D consists of minor surface (2-5 cm) erosion extending immediately below a settlement feature on the northeast crest of the facility. The noted erosion feature extended from top to toe down the northeast side slope and has an acceptable severity rating.

Frost Action

No evidence of frost action was observed.

Evidence of Burrowing Animals

No indication of burrowing animals was noted.

Re-establishment of Vegetation

No indication of vegetation was noted.

Staining

Two relatively small areas of rust-coloured staining were noted within the roadway and along the northwest slope toe of the facility (Feature E). The larger stained area was situated within the seepage path extending along the slope toe, whereas the smaller stained area appeared localized within the roadway to the north. The stained area on the north corner of the facility appeared to be associated with minor seepage occurring along the toe in the immediate area. This feature appears less pronounced than previously observed in the 2010 assessment.

Seepage Points

Three areas of active seepage were noted during the 2011 inspection, including numerous discrete seepage points along the northeast toe and above the stained area on the north corner of the facility (Feature F); a single point of seepage emanating from the east toe of the facility (Feature G); and a newly observed single point of seepage extending from the southwest toe of the Facility (Feature H). With the exception of Feature H, all seepage areas appear consistent with the 2010 findings.

Debris

No evidence of exposed debris was noted.

Presence/Condition of Monitoring Instruments

All monitoring well and thermistor installations were found to be in good condition at the facility.

Other Features of Note

Discontinuous areas of ponded water were present in the surrounding area along all sides of the facility. Most ponded areas along the northwest and southwest sides of the facility were associated with active surface runoff from the surrounding areas, whereas ponded areas along the northeast and southeast sides appeared to be in part from minor seepage along the toe and/or localized depressions (heavy equipment tracks) adjacent to the facility. These features appear consistent with observations made during the previous 2010 assessment.

Discussion

The Tier II Disposal Facility performance with respect to containment of the soil within the landfill is rated as acceptable. A visual inspection report, including supporting photos and drawing, is presented in the following pages.

Table XII: Visual Inspection Checklist / Inspection Report – Tier II Disposal Facility

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 of 2

SITE NAME: CAM-4 PELLY BAY
LANDFILL DESIGNATION: TIER II DISPOSAL FACILITY
DATE OF INSPECTION: AUGUST 17-20, 2011
DATE OF PREVIOUS INSPECTION: AUGUST 21-22, 2010
INSPECTED BY: A. PASSALIS
REPORT PREPARED BY: A. PASSALIS
The inspector/reporter represents to the best of his/her knowledge that 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.

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT

LANDFILL VISUAL INSPECTION

Site Name: CAM-4 - Pelly Bay
Landfill: DCC Tier II Soil Disposal Facility
Designation: New Landfill
Date Inspected: August 21-22, 2010
Inspected by: Andrew Passalis, P.Eng.
Sila Remediation Inc.

Signature:



DCC TIER II SOIL DISPOSAL FACILITY

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE A See Figure CAM-4.3 (northeast crest) (NEW OBS.)	4 m	0.1-0.3 m	5 - 10 cm	Isolated	Minor depression	TII-29, 30	Acceptable	Minor linear depression parallel to crest.
Erosion	Yes	FEATURE B See Figure CAM-4.3 (southwest toe)	20 - 40 m	1 - 3 m	5 - 10 cm	N/A	Minor erosion along southwest toe	TII-17-19, 21-23	Acceptable	Not in contact with landfill cover.
		FEATURE C See Figure CAM-4.3 (northwest toe)	50 m	0.5 - 1 m	2 - 5 cm	N/A	Minor erosion along northwest toe	TII-24, 25	Acceptable	Not in contact with landfill cover.
		FEATURE D See Figure CAM-4.3 (northwest slope) (NEW OBS.)	25 m	0.1-0.15 m	2 - 5 cm	Isolated	Minor erosion on side slope	TII-38	Acceptable	Two locations. Self armouring.
Frost Action	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Animal Burrows	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Staining	Yes	FEATURE E See Figure CAM-4.3 (northwest toe)	1-15 m	0.15-1 m	Unknown	Isolated	Minor staining and sheen noted in roadway and along seepage path	TII-8-11, 32	Acceptable	Minor rust-coloured staining associated with seepage point along northwest toe of facility. Sheen associated with staining in majority of locations.
Vegetation Stress	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Seepage Points	Yes	FEATURE F See Figure CAM-4.3 (northwest and northeast toes)	0.5 m	0.1 - 0.5 m	N/A	Isolated	Discrete points of seepage along toe of slopes	TII-8, 12, 32, 34-37	Acceptable	Localized ponding associated with seepage along toe of slope. Wetted area and minor seepage observed on lower slope.
		FEATURE G See Figure CAM-4.3 (east toe)	0.5 - 1.0 m	0.2 m	N/A	Isolated	Seepage along toe of slope	TII-39, 40	Acceptable	Localized seepage. No staining observed.
		FEATURE H See Figure CAM-4.3 (southwest toe) (NEW OBS.)	0.5 m	0.15 m	N/A	Isolated	Minor seepage along toe of slope	TII-20	Acceptable	Localized seepage. Rust coloured staining and sheen noted for 10 m downgradient.
Debris Exposed	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Presence/Condition of Monitoring Instruments	Yes	See Figure CAM-4.3 and Photographic Record	N/A	N/A	N/A	None	MW-5, 8, 9, 14A/B, 15 VT-5, 6, 7, 8	TII-5W, 8W, 9W, 14W, 15W, 16W TII-4, 3, 2, 5	N/A	All monitoring wells and thermistors in good condition.
Other Features of Note:	Yes	Localized water ponded along toe of all sides of landfill	5 - 20 m	2 - 10 m	2 - 10 cm	N/A	Minor ponding of water and drainage along toe.	TII-1, 5, 8, 11, 12, 17-19, 21-23, 27, 28, 33, 40, 41	Acceptable	Not in contact with landfill cover. Localized ponding in low lying and rutted areas.
Additional Photos	Yes	See Figure CAM-4.3 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	Not Observable	General photos for documentation. No features of note.
Overall Landfill Performance:		Acceptable								

4.3 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for the Tier II Disposal Facility has been completed as per the ToR and is included as Table XIII hereafter.

Table XIII: Preliminary Stability Assessment – Tier II Disposal Facility

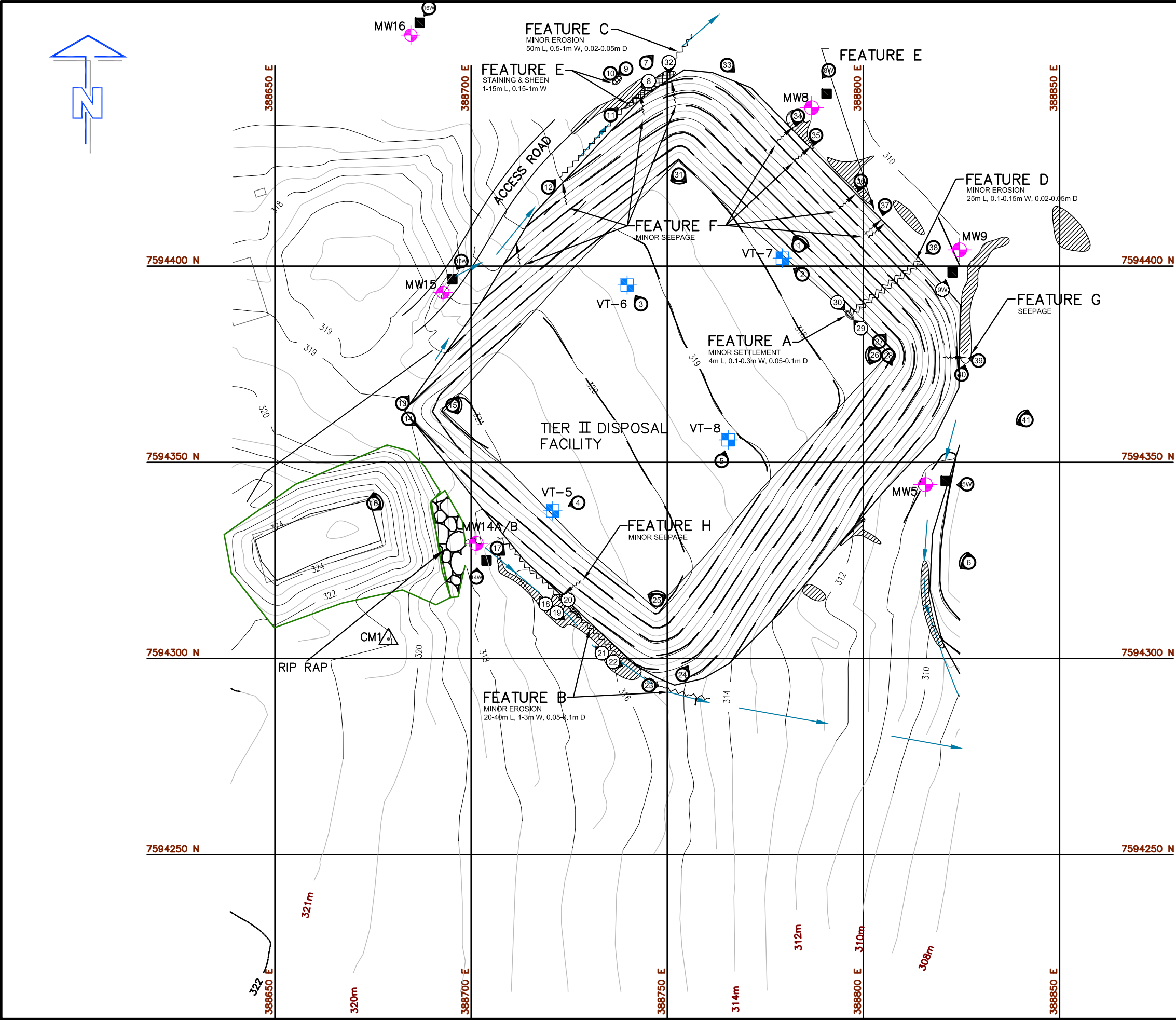
Feature	Severity Rating	Extent
Settlement	Acceptable	Isolated
Erosion	Acceptable	Isolated
Frost Action	Not observed	None
Staining	Acceptable	Isolated
Vegetation Stress	Not observed	None
Seepage/Ponded Water	Acceptable	Occasional
Debris exposure	Not observed	None
Overall Landfill Performance	Acceptable	

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

4.4 LOCATION PLAN

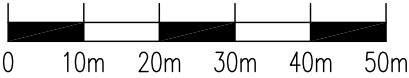
The Location Plan for the Tier II Disposal Facility has been completed as per the ToR and is included in the following page as Figure CAM-4.3.

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LEGEND

- CM1 SURVEY CONTROL MONUMENT
- SOIL SAMPLE LOCATION
- MONITORING WELL LOCATION
- VERTICAL THERMISTOR LOCATION
- PHOTOGRAPH LOCATION
- MINOR SETTLEMENT (NTS)
- MINOR EROSION (NTS)
- STAINING (NTS)
- PONDING
- SEEPAGE (NTS)



A	FINAL	12-02-15	P.L.	A.P.	P.G.
NO.	VERSION	DATE	PAR	VERIF.	APPR.



FINAL REPORT COLLECTION OF LANDFILL MONITORING DATA CAM-4, KUGAARUK, NUNAVUT TIER II DISPOSAL FACILITY

SITE REMEDIATION SOLUTIONS

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MEASUREMENT UNIT Meter	SCALE: 1 : 1,000	DATE (month-year): FEBRUARY 2012
DRAWN BY: P. LÉGARÉ	VERIFIED BY: A. PASSALIS	APPROVED BY: P. GÉLINAS
PROJECT NO: CD9229_003_160	DRAWING NO: CD9229_003_160-CAM-4_3	PAGE PL

FIGURE CAM-4.3

4.5 PHOTOGRAPHIC RECORDS

The Photographic Record for the Tier II Disposal Facility has been completed as per the ToR and is included in Table XIV hereafter. The Photographic Record contains an index and “thumbnail” photographs only. Full-sized photographs are contained in the Addendum DVD-ROM.

Table XIV: Landfill Visual Inspection Photo Log – Tier II Disposal Facility

Photo (TII-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
1		C411_4764	11/11/2011	388783	7594405	Panoramic view looking NNW to E from northeast crest of Tier II DF. Note MW-8 on left and MW-9 on right
2		C411_4766	17/08/2011	388784	7594398	View looking NW at VT-7 on northeast crest of Tier II DF
3		C411_4767	17/08/2011	388743	7594391	View looking NW at VT-6 on north cover area of Tier II DF
4		C411_4768	17/08/2011	388727	7594339	View looking WSW at VT-5 located on southwest crest of Tier II DF
5		C411_4769	17/08/2011	388764	7594351	View looking NE at VT-8 located on southeast side of facility. VT-7 in background
6		C411_4774	11/11/2011	388827	7594324	Panoramic view looking N to SW of southeast side of Tier II DF from Upper Site Landfill
7		C411_4916	20/08/2011	388745	7594452	View looking NE at minor erosion extending along roadway to SA NHWLF north of Tier II DF - FEATURE C
8		C411_4917	20/08/2011	388745	7594447	View looking SW along northwest toe of Tier II DF. Note points of seepage along toe. - FEATURE F
9		C411_4918	20/08/2011	388739	7594450	View looking SW at rust coloured staining and sheen in roadway north of Tier II DF - FEATURE E
10		C411_4919	20/08/2011	388736	7594448	View of rust coloured staining and sheen in roadway north of Tier II DF - FEATURE E
11		C411_4920	20/08/2011	388736	7594438	View looking NE at seepage point and surface drainage along northwest toe of the facility - FEATURE C
12		C411_4921	20/08/2011	388720	7594420	View looking NE at seepage point and surface drainage along northwest toe of the facility - FEATURE C
13		C411_4923	20/08/2011	388683	7594364	View looking NE along northwest toe of the facility
14		C411_4924	20/08/2011	388684	7594363	View looking SE along southwest toe from west end of facility

Table XIV: Landfill Visual Inspection Photo Log – Tier II Disposal Facility (Continued)

Photo (TII-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
16		C411_4926	11/11/2011	388675	7594340	Panoramic view looking N to SE from former operational pad southwest of facility
17		C411_4927	20/08/2011	388706	7594328	View looking SE along southwest toe from MW-14A/B. Note minor erosion and ponding in area
18		C411_4928	20/08/2011	388720	7594314	View looking NW at ponded water and drainage along southwest toe of facility. MW-14A/B visible in background - FEATURE B
19		C411_4929	20/08/2011	388721	7594313	View looking SE at ponded water and drainage along southwest toe of facility - FEATURE B
20		C411_4930	20/08/2011	388723	7594315	View of rust coloured staining at seepage point on southwest toe of Tier II DF
21		C411_4931	20/08/2011	388734	7594301	View looking NW at ponded water and drainage along southwest toe of facility. MW-14A/B visible in FEATURE B
22		C411_4932	20/08/2011	388735	7594300	View looking SE at ponded water and drainage along south end of facility
23		C411_4933	20/08/2011	388745	7594293	View looking E at minor erosion along south toe of facility (0.05-0.15m D). MW-11 visible in background
24		C411_4934	20/08/2011	388753	7594296	View looking NE along southeast side slope of Tier II DF
25		C411_4935	11/11/2011	388748	7594314	Panoramic view looking NW to NE across surface from south corner of facility
26		C411_4936	11/11/2011	388803	7594378	Panoramic view looking SW to NW across surface from east corner of facility
27		C411_4937	20/08/2011	388804	7594380	View looking NE at MW-9 from east corner of facility. Note isolated ponding in downgradient areas
28		C411_4938	20/08/2011	388806	7594378	View looking SSE at MW-5 from east corner of facility
29		C411_4939	20/08/2011	388799	7594384	View looking NW at linear depression extending parallel to crest on northeast side of facility (4m L, 0.1-0.3m W, 0.05-0.1m D) - FEATURE A

Table XIV: Landfill Visual Inspection Photo Log – Tier II Disposal Facility (Continued)

Photo (TII-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
30		C411_4941	40775	388794	7594391	View looking SE at linear depression extending parallel to crest on northeast side of facility (4m L, 0.1-0.3m W, 0.05-0.1m D) - FEATURE A
31		C411_4942	11/11/2011	388753	7594423	Panoramic view looking SE to SW across surface from north corner of facility
32		C411_4944	20/08/2011	388750	7594452	View looking S at minor seepage at north toe of facility - FEATURE F
33		C411_4945	20/08/2011	388765	7594451	View looking SE along northeast toe from north end of facility
34		C411_4946	20/08/2011	388783	7594438	View looking SSW at seepage point along northeast toe of facility - FEATURE F
35		C411_4947	20/08/2011	388788	7594434	View looking SSW at seepage point with sheen along northeast toe of facility - FEATURE F
36		C411_4948	20/08/2011	388799	7594422	View looking SSW at seepage point along northeast toe of facility - FEATURE F
37		C411_4949	20/08/2011	388806	7594416	View looking SSW at seepage point along northeast toe of facility - FEATURE F
38		C411_4951	20/08/2011	388818	7594405	View looking SW at two areas of minor erosion extending from top to toe near east corner of facility (25m L, 0.1-0.15m W, 2-5cm D) - FEATURE D
39		C411_4952	20/08/2011	388829	7594376	View looking W at point of minor seepage on east toe of facility - FEATURE F
40		C411_4953	20/08/2011	388825	7594373	View looking NNE at minor seepage point on east toe of facility. Note ponding in downgradient areas - FEATURE F
41		C411_4988	11/11/2011	388842	7594361	Panoramic view looking SW to N at east side of Tier II DF from northwest corner Upper Site Landfill

Table XIV: Landfill Visual Inspection Photo Log – Tier II Disposal Facility (Continued)

Photo (TII-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Soil Sampling						
MW-5		C411_4786	18/08/2011	388821	7594345	Sampling location C4-5W located downgradient of Tier II Disposal Facility
5W		C411_4787	18/08/2011	388826	7594344	View looking W at C4-5W soil sample location
MW-8		C411_4782	18/08/2011	388791	7594444	Sampling location C4-8W located downgradient of Tier II Disposal Facility
8W		C411_4783	18/08/2011	388790	7594449	View looking SW at C4-8W soil sample location
MW-9		C411_4784	18/08/2011	388822	7594399	Sampling location C4-9W located downgradient of Tier II Disposal Facility
9W		C411_4785	18/08/2011	388821	7594395	View looking NNE at C4-9W soil sample location
MW-14A/B		C411_4830	19/08/2011	388703	7594324	Sampling location C4-14W located downgradient of Tier II Disposal Facility
14W		C411_4831	19/08/2011	388701	7594321	View looking N at C4-14W soil sample location
MW-15		C411_4827	19/08/2011	388695	7594397	Sampling location C4-15W located downgradient of Tier II Disposal Facility
15W		C411_4828	19/08/2011	388697	7594401	View looking SW at C4-15W soil sample location
MW-16		C411_4825	19/08/2011	388687	7594462	Sampling location C4-16W located upgradient of SA NHWLF
16W		C411_4826	19/08/2011	388689	7594465	View looking SW at C4-16W soil sample location

4.6 THERMAL MONITORING DATA

All thermistors at the Tier II Disposal Facility were inspected and found to be in good physical condition with no significant concerns identified. All accessible analogues/thermocouples were observed to be functioning properly. Battery levels in dataloggers VT-6 and VT-8 were noted to be below operating levels and consequently communication and data retrieval could not be completed from these locations. Battery levels at the remaining thermistors (VT-5 and VT-7) were noted as being excellent. Internal memories were reset and clocks were synchronized in the functioning units using the Prolog software.

4.7 LANDFILL TEMPERATURE DATA FROM DATALOGGERS

Manual resistive and temperature data readings were collected from the thermistor strings as per the ToR. Short thermistor cable lengths at VT-5 and VT-8 prohibited disconnection of the datalogger and manual resistivity readings to be taken. Inspection results for each thermistor are presented on the Thermistor Annual Maintenance Reports included in this report. A complete datalogger RAW data set for the 2010-2011 period has been forwarded to DCC as per the ToR.

4.8 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results and evaluation of the analytical data for the 2011 Tier II Disposal Facility samples are presented in Tables XV and XVI below. Field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Appendix C at the end of this report.

Table XV: Soil Chemical Analysis Results – Metals and PCBs –
Tier II Disposal Facility

Sample Name	Location	Depth [cm]	As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Hg [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	PCBs [mg/kg]
C4 11- 5WA	MW-5	0-15	2	<0.1	21	6	8	5	<0.05	11	32	<0.010
C4 11- 5WB		40-50	2	<0.1	20	7	20	5	<0.05	10	30	<0.010
C4 11- 8WA	MW-8	0-15	2	<0.1	40	5	7	6	<0.05	20	33	0.013
C4 11- 8WB		40-50	2	<0.1	33	7	17	7	<0.05	17	44	<0.020
C4 11- 9WA	MW-9	0-15	2	<0.1	49	7	9	8	<0.05	24	40	0.013
C4 11- 9WB		40-50	2	<0.1	29	7	12	7	<0.05	15	43	<0.010
C4 11- 14WA	MW-14A	0-15	4	<0.1	37	8	13	12	<0.05	19	51	0.034
C4 11- 14WB	MW-14B	40-50	3	<0.1	42	9	16	9	<0.05	23	56	<0.010
C4 11- 15WA	MW-15A	0-15	2	<0.1	26	7	12	11	<0.05	13	46	0.035
C4 11- 15WB	MW-15B	40-50	2	<0.1	44	7	9	6	<0.05	22	42	<0.010

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Table XVI: Soil Chemical Analysis Results – PHCs and BTEX –
Tier II Disposal Facility

Sample Name	Sample Location	Depth Below Grade [cm]	Parameters						
			Benzene [mg/kg]	Toluene [mg/kg]	Ethylbenzene [mg/kg]	Xylenes [mg/kg]	PHC(F1) [mg/kg]	PHC(F2) [mg/kg]	PHC(F3) [mg/kg]
C4 11- 5WA	MW-5	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 5WB		40-50	0.0074	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 8WA	MW-8	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 8WB		40-50	0.0084	<0.020	<0.010	<0.040	510	5900	820
C4 11- 9WA	MW-9	0-15	0.0063	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 9WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 14WA	MW-14A	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	120
C4 11- 14WB	MW-14B	40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 15WA	MW-15A	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	49
C4 11- 15WB	MW-15B	40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀, does not include BTEX fractionsPHC (F2): Petroleum hydrocarbon C_{>10} to C₁₆PHC (F3): Petroleum hydrocarbon C_{>16} to C₃₄

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Table XVII: Evaluation of 2011 Soil Analytical Data – Tier II Disposal Facility

Parameter	2011
Copper	Concentrations ranged between 6-20 mg/kg with a mean concentration of 11.8 mg/kg. The highest concentrations were observed at depth at downgradient locations MW-14 (16 mg/kg), MW-5 (20 mg/kg) and MW-8 (17 mg/kg). Lower concentrations were generally noted at surface at each sample location, including upgradient location BMW-1 (6 mg/kg) and downgradient locations MW-5 (8 mg/kg), MW-8 (7 mg/kg) and MW-9 (9 mg/kg).
Nickel	Concentrations ranged between 10-24 mg/kg with detectable concentrations at all sample locations and a mean concentration of 17 mg/kg. The most elevated concentrations were observed at upgradient location MW-15 (22 mg/kg - depth) and downgradient locations MW-14 (23 mg/kg - depth) and MW-9 (24 mg/kg - surface). The lowest concentration was observed at upgradient location BMW-1 (surface) and downgradient location MW-5 (depth).
Cobalt	Concentrations ranged between 5-9 mg/kg with a mean of 6.9 mg/kg with detectable concentrations noted at all locations. The highest concentrations were noted at upgradient location BMW-1 (8 mg/kg - depth) and downgradient location MW-14 (8 mg/kg, surface and 9 mg/kg - depth). The lowest concentration (5 mg/kg) was observed at surface at upgradient location BMW-1 and downgradient location MW-8. All other sample locations reported concentrations between 6-8 mg/kg.
Cadmium	All reported concentrations were less than the method detection limit (0.1 mg/kg).
Lead	Concentrations ranged between 4-12 mg/kg with a mean of 7.3. Trace concentrations were observed at the majority of locations, with slightly elevated levels noted at surface at upgradient location MW-15 (11 mg/kg) and downgradient location MW-14 (12 mg/kg). The lowest concentrations were noted at downgradient location BMW-1 (4 mg/kg - surface) and downgradient location MW-5 (5 mg/kg, surface and depth).
Zinc	Concentrations ranged between 30-56 mg/kg with a mean of 41.2 mg/kg. The most elevated concentrations were noted at upgradient locations MW-15 (46 mg/kg - surface) and BMW-1 (46 mg/kg - depth) and downgradient location MW-14 (51 mg/kg, surface and 56 mg/kg - depth). The lowest concentrations were noted at downgradient location MW-5 (32 mg/kg, surface and 30 mg/kg - depth) and upgradient location BMW-1 (31 mg/kg - surface).
Chromium	Concentrations ranged between 18-49 mg/kg with a mean of 33.8 mg/kg. The highest concentrations were observed at upgradient location BMW-1 (46 mg/kg - depth) and downgradient location MW-9 (49 mg/kg - surface). The lowest concentrations were noted at downgradient location MW-9 (10-11 mg/kg).
Arsenic	Concentrations ranged between 2-4 mg/kg with detectable concentrations at all sample locations with a mean concentration of 2.3 mg/kg. The highest concentration was noted at surface at MW-14 (upgradient location).
Mercury	All reported concentrations were less than the method detection limit (0.05 mg/kg).
PCBs	Detectable concentrations were observed at surface at upgradient location MW-15 (0.035 mg/kg) and downgradient locations MW-8 (0.013 mg/kg), MW-9 (0.013 mg/kg) and MW-14 (0.034 mg/kg). All other reported concentrations were less than the method detection limit (0.01-0.02 mg/kg).
TPH	Concentrations ranged between <10-7,230 mg/kg with detectable TPH concentrations noted at downgradient sample location MW-8 (7,230 mg/kg - depth) and upgradient locations MW-14 (120 mg/kg - surface) and MW-15 (49 mg/kg - surface). The depth sample at MW-8 contained F2-F4 concentrations, whereas the samples at MW-14 and MW-15 contained only F4 concentrations.

4.9 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results and evaluation of analytical data for the 2011 Tier II Disposal Facility samples are presented in Tables XVIII and XIX respectively. MW-14B (upgradient location) was dry at the time of monitoring and consequently no groundwater samples were collected at this location. Groundwater samples collected as part of the QA/QC program are presented in Appendix C at the end of the report.

Table XVIII: Groundwater Chemical Analysis Results – Tier II Disposal Facility

Sample Name	Location	As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Hg [ug/L]	Ni [mg/L]	Zn [mg/L]	PCBs [mg/L]	TPH [mg/L]
C4 11-5W	MW-5	<0.001	<0.0002	0.036	0.0011	0.011	0.0042	0.011 ⁽¹⁾	0.032	0.082	<0.000050	<2
C4 11-8W	MW-8	0.002	0.0003	0.022	0.0042	0.0090	0.0058	<0.006 ⁽¹⁾	0.058	0.047	<0.000050	3
C4 11-9W	MW-9	0.006	<0.0002	0.074	0.0028	0.014	0.0056	0.008 ⁽¹⁾	0.039	0.020	<0.000050	3
C4 11-14W	MW-14	0.002	<0.0002	0.016	0.0039	0.075	0.0071	0.021 ⁽¹⁾	0.020	2.5	<0.000050	<2
C4 11-15W	MW-15	0.002	<0.0002	0.008	0.0033	0.0048	0.0019	0.012 ⁽¹⁾	0.014	0.11	<0.000050	10
C4 11-BMW1	BMW-1	<0.01	<0.002	0.13	0.010	0.054	0.008	0.016 ⁽¹⁾	0.11	0.11	<0.0017	-

(1): Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Table XIX: Evaluation of 2011 Groundwater Analytical Data –
Tier II Disposal Facility

Parameter	2011
Copper	Concentrations ranged between 0.0048-0.075 mg/L, with the highest concentrations noted at upgradient location BMW-1 (0.054 mg/L) and downgradient location MW-14A (0.075 mg/L). The lowest concentration was noted upgradient at MW-15 (0.0048 mg/L), at approximately 2-15 times lower than the four downgradient sample locations.
Nickel	Concentrations ranged between 0.014-0.11 mg/L, with the highest concentrations noted at upgradient location BMW-1 (0.11 mg/L) and downgradient location MW-8 (0.058 mg/L), with slightly lower concentrations noted at downgradient locations MW-5, MW-9 and MW-14A (0.032 mg/L, 0.039 mg/L and 0.020 mg/L, respectively). The lowest concentration was noted at upgradient location MW-15 (0.014 mg/L).
Cobalt	Concentrations ranged between 0.0011-0.010 mg/L, with the highest concentration noted at upgradient location BMW-1 (0.010 mg/L) approximately 2-9 times higher than the four downgradient sample locations and one other upgradient sample location.
Cadmium	Detectable concentrations were noted at one downgradient sample location, MW-8 (0.0003 mg/L). All remaining sample locations reported concentrations less than the method detection limit (0.0002 mg/L).
Lead	Concentrations ranged between 0.0019-0.008 mg/L. The lowest and highest concentrations were noted upgradient at MW-15 and BMW-1, respectively.
Zinc	Concentrations ranged between 0.020-2.5 mg/L, with the highest concentration noted at downgradient location MW-14A and approximately 23 times greater than the next highest concentration (0.11 mg/L at MW-15 and BMW-1). The lowest concentration was noted at downgradient at MW-9.
Chromium	Concentrations ranged between 0.008-0.13 mg/L. The lowest and highest concentrations were noted at upgradient locations MW-15 and BMW-1, respectively. The highest (upgradient) concentration was 2-8 times higher than the four downgradient sample locations.
Arsenic	Concentrations ranged between <0.001-0.006 mg/L, with the highest concentration noted at MW-9 (downgradient) and lowest concentration at MW-5 (downgradient). Two locations reported concentrations less than the method detection limit.
Mercury	Concentrations ranged between <0.000006-0.000021 mg/L. The highest concentration was noted downgradient at MW-14A, with relatively similar concentrations between 0.000011-0.000016 mg/L noted at the two upgradient locations and MW-5 (downgradient). It should be noted that all samples were diluted due to sample matrix interference.
PCBs	All reported concentrations were less than the method detection limit (0.00005-0.0017 mg/L).
TPH	Concentrations ranged between <2–10 mg/L with the highest levels detected at MW-15 located upgradient of the landfill. A layer of free product measuring 0.196 m thick was detected in BMW-1, however there was insufficient sample volume to collect a sample for TPH analysis at this location. Elevated TPH concentrations were noted at upgradient location MW-15 (10 mg/L) and to a lesser degree at downgradient locations MW-8 and MW-9 (3 mg/L). Non-detect levels were noted at MW-5 and MW-14A (downgradient locations).

4.10 THERMISTOR ANNUAL MAINTENANCE REPORTS

The thermistor annual maintenance reports for VT-5 to VT-8 are presented in this section.

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT05	Inclination Vertical
Install Date: 13-Aug-06	First Date Event 27-Aug-07 Last Date Event 22-Aug-10
Coordinates and Elevation N	E Elev 320.975
Length of Cable (m) 7.7	Cable Lead Above Ground (m) 1.2 Nodal Points 13
Datalogger Serial # 111092	Cable Serial Number 1616

Code CAM-4VT05

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☒	☐
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	22-Aug-10	
Battery Levels	Main 11.34 V	Aux 13.26 V

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1		11.2715
2		14.8694
3		3.7340
4		1.3116
5		-0.5117
6		-2.0081
7		-2.9933
8		-3.8365

Bead	ohms	Temp. (°C)
9		-4.7780
10		-5.5271
11		-6.2433
12		-6.9096
13		-7.0464

Observations and Proposed Maintenance

Cable too short to disconnect datalogger and complete manual readings.

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT06	Inclination Vertical
Install Date: 13-Aug-06	First Date Event 27-Aug-07 Last Date Event 22-Aug-10
Coordinates and Elevation N	E Elev 319.3
Length of Cable (m) 6.2	Cable Lead Above Ground (m) 1.2 Nodal Points 10
Datalogger Serial # 111102	Cable Serial Number 1620

Code CAM-4VT06

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☐	☒ Batteries should be replaced in 2012.
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	26-Aug-07	
Battery Levels	Main	Aux

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	7.619	
2	9.258	
3	13.107	
4	15.024	
5	16.745	
6	17.869	
7	19.227	
8	20.32	

Bead	ohms	Temp. (°C)
9	21.43	
10	21.66	

Observations and Proposed Maintenance

Unable to communicate with datalogger. Batteries below operating level.
Recommend battery replacement during next inspection period (2012).

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT07	Inclination Vertical
Install Date: 13-Aug-06	First Date Event 27-Aug-07 Last Date Event 22-Aug-10
Coordinates and Elevation N	E Elev 317.825
Length of Cable (m) 9.2	Cable Lead Above Ground (m) 1.2 Nodal Points 16
Datalogger Serial # 209067	Cable Serial Number 1624

Code CAM-4VT07

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☒	☐
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	28-Aug-09	
Battery Levels	Main 11.34 V	Aux 13.14 V

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	13.020	4.5278
2	14.954	1.8896
3	16.805	-0.3947
4	17.998	-1.8177
5	19.242	-3.0427
6	20.290	-4.1018
7	21.30	-5.0171
8	22.40	-5.9624

Bead	ohms	Temp. (°C)
9	23.41	-6.8004
10	24.27	-7.4615
11	24.95	-7.9933
12	25.64	-8.5018
13	26.16	-8.8707
14	26.62	-9.2051
15	26.33	-9.0009
16	25.82	-8.6224

Observations and Proposed Maintenance

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-août-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT08	Inclination Vertical
Install Date: 13-août-06	First Date Event 27-août-07 Last Date Event 22-août-10
Coordinates and Elevation N	E Elev 319,18
Length of Cable (m) 6,2	Cable Lead Above Ground (m) 1,1 Nodal Points 10
Datalogger Serial # 108038	Cable Serial Number 1622

Code CAM-4VT08

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☐	☒ Batteries should be replaced in 2012.
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	26-août-07	
Battery Levels	Main _____	Aux _____

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1		
2		
3		
4		
5		
6		
7		
8		

Bead	ohms	Temp. (°C)
9		
10		

Observations and Proposed Maintenance

Cable too short to disconnect datalogger and complete manual readings.
Unable to communicate with datalogger. Batteries below operating level.
Recommend battery replacement during next inspection period (2012).

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT08	Inclination Vertical
Install Date: 13-Aug-06	First Date Event 27-Aug-07 Last Date Event 22-Aug-10
Coordinates and Elevation N	E Elev 319.18
Length of Cable (m) 6.2	Cable Lead Above Ground (m) 1.1 Nodal Points 10
Datalogger Serial # 108038	Cable Serial Number 1622

Code CAM-4VT08

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☐	☒ Batteries should be replaced in 2012.
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	26-Aug-07	
Battery Levels	Main _____	Aux _____

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1		
2		
3		
4		
5		
6		
7		
8		

Bead	ohms	Temp. (°C)
9		
10		

Observations and Proposed Maintenance

Cable too short to disconnect datalogger and complete manual readings.
Unable to communicate with datalogger. Batteries below operating level.
Recommend battery replacement during next inspection period (2012).

4.11 MONITORING WELL SAMPLING/INSPECTION LOGS

The monitoring well sampling and inspection logs for MW-5, MW-8, MW-9, MW-14A, MW-14B, MW-15, MW-16 and BMW-1 are presented in this section.

2011 Monitoring Well Sampling Log (MW-5)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-5					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	3.60					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	0.60					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	1.29		
Well height above ground (m):	0.98		Depth to bottom (m):	3.13		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	1.85		Evidence of sludge:	-		
Well volume of water (L):	3.62		Evidence of freezing/siltation:	-		
Static water level* (m):	0.31					
Length of screen collecting water (m):	1.55					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	4.0	2.9	8.0	772	35	C&C, N/O
Water Sampling			Soil Sampling			
Date & Time Collected:	18-Aug-11		Date and Time Collected:	18-Aug-11		
Sample Number - Water:	C411-5W		Sample Number - Soil:	C411-5WA		
				C411-5WB		
Sample Containers:	3x500mL, 1x25mL plastic		Sample Containers:	3x125mL glass		
				3x125mL glass		
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:	C&C, N/O		Soil Description:	Brown sand and gravel, well graded, wet at 40		
Sampling Equipment Decontamination (Y/N):	N, dedicated		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	0		Number Washes:	1		
Number Rinses:	0		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

LDPE=Low Density Polyethylene

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-8)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-8					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	4.08					
Length of screened section (m):	2.01					
Depth to top of screen* (m):	0.97					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	1.04		
Well height above ground (m):	1.02		Depth to bottom (m):	2.18		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	1.15		Evidence of sludge:	-		
Well volume of water (L):	2.25		Evidence of freezing/siltation:	-		
Static water level* (m):	0.01					
Length of screen collecting water (m):	0.19					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	2.5	4.3	8.2	481	30	C&C, sl.HC odour
Water Sampling			Soil Sampling			
Date & Time Collected:	18-Aug-11		Date and Time Collected:	18-Aug-11		
Sample Number - Water:	C411-8W + inter dup		Sample Number - Soil:	C411-8WA		
	C411-BDW1			C411-8WB		
Sample Containers:	3x500mL, 2x25mL plastic		Sample Containers:	3x125mL glass		
	3x1L, 3x40mL			3x125mL glass		
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:	C&C, sl.HC odour		Soil Description:	Brown sand, with gravel, wet at 40		
Sampling Equipment Decontamination (Y/N):	N, dedicated		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	0		Number Washes:	1		
Number Rinses:	0		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

LDPE=Low Density Polyethylene

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-9)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-9					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	3.32					
Length of screened section (m):	2.01					
Depth to top of screen* (m):	0.40					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	0.69	
Well height above ground (m):	0.32			Depth to bottom (m):	2.11	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations						
Depth of water (m):	1.42			Evidence of sludge:	-	
Well volume of water (L):	2.79			Evidence of freezing/siltation:	-	
Static water level* (m):	0.37					
Length of screen collecting water (m):	1.39					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	3.0	3.4	12.3	958	57	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	18-Aug-11			Date and Time Collected:	18-Aug-11	
Sample Number - Water:	C411-9W			Sample Number - Soil:	C411-9WA	
					C411-9WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Brown sand, with gravel, damp	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurments are assumed to be from the top of the casing.

n/a=not applicable

LDPE=Low Density Polyethylene

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-14-A)

Site name:	CAM-4					
Date of sampling event:	19-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-14-A					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	4.66					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	1.67					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	0.92	
Well height above ground (m):	0.47			Depth to bottom (m):	2.12	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations						
Depth of water (m):	1.20			Evidence of sludge:	-	
Well volume of water (L):	2.36			Evidence of freezing/siltation:	-	
Static water level* (m):	0.45					
Length of screen collecting water (m):	-0.02					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	2.4	1.4	7.7	1.2	14	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	19-Aug-11			Date and Time Collected:	19-Aug-11	
Sample Number - Water:	C411-14AW			Sample Number - Soil:	C411-14WA	
					C411-14WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Brown/grey sand, with silt and gravel	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

LDPE=Low Density Polyethylene

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-14B)

Site name:	CAM-4					
Date of sampling event:	19-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-14B					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	3.62					
Length of screened section (m):	2.00**					
Depth to top of screen* (m):	0.50					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	(dry)	
Well height above ground (m):	0.52			Depth to bottom (m):	4.30	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations						
Depth of water (m):	-			Evidence of sludge:	-	
Well volume of water (L):	-			Evidence of freezing/siltation:	-	
Static water level* (m):	-					
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:				Date and Time Collected:	19-Aug-11	
Sample Number - Water:				Sample Number - Soil:	C411-14WA	
					C411-14WB	
Sample Containers:				Sample Containers:	3x125mL glass/bag	
					3x125mL glass/bag	
Procedure/Equipment:				Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:				Soil Description:	Brown/grey sand, with silt and gravel	
Sampling Equipment Decontamination (Y/N):	n/a			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	-			Number Washes:	1	
Number Rinses:	-			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

** Based on site specifications. Not recorded on original installation log.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-15)

Site name:	CAM-4					
Date of sampling event:	19-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-15					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	3.25					
Length of screened section (m):	1.97					
Depth to top of screen* (m):	0.33					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	0.47	
Well height above ground (m):	0.55			Depth to bottom (m):	2.08	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations						
Depth of water (m):	1.61			Evidence of sludge:	-	
Well volume of water (L):	3.16			Evidence of freezing/siltation:	-	
Static water level* (m):	-0.08					
Length of screen collecting water (m):	1.20					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	2.5	2.9	7.4	0.6	7.8	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	19-Aug-11			Date and Time Collected:	19-Aug-11	
Sample Number - Water:	C411-15W			Sample Number - Soil:	C411-15WA	
					C411-15WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Light brown sand, some silt, trace cobbles	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

LDPE=Low Density Polyethylene

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-16)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-16					
Facility:	Tier II Soil Disposal Facility					
Known Data						
Depth of installation* (m):	Data not available					
Length of screened section (m):						
Depth to top of screen* (m):						
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	1.32		
Well height above ground (m):	0.60		Depth to bottom (m):	2.52		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	1.20		Evidence of sludge:	-		
Well volume of water (L):	3.30		Evidence of freezing/siltation:	-		
Static water level* (m):	0.72					
Length of screen collecting water (m):						
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Development/Purging Information						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	2.8	1.8	6.5	0.7	25	C&C, SI HC odour
Water Sampling			Soil Sampling			
Date & Time Collected:	19-Aug-11		Date and Time Collected:	19-Aug-11		
Sample Number - Water:	C411-16W		Sample Number - Soil:	C411-16WA		
				C411-16WB		
Sample Containers:	3x500mL, 1x25mL plastic		Sample Containers:	3x125mL glass		
				3x125mL glass		
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:	C&C, SI HC odour		Soil Description:	Brown sand, with gravel, some silt		
Sampling Equipment Decontamination (Y/N):	N, dedicated		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	0		Number Washes:	1		
Number Rinses:	0		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

LDPE=Low Density Polyethylene

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (BMW-1)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	BMW-1					
Facility:	SA NHWLF					
Known Data						
Depth of installation* (m):	4.46					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	1.47					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	2.70		
Well height above ground (m):	0.67		Depth to bottom (m):	2.89		
Diameter of well (m):	0.05		Free product thickness (mm):	19.6		
Calculations						
Depth of water (m):	0.19		Evidence of sludge:	-		
Well volume of water (L):	0.37		Evidence of freezing/siltation:	-		
Static water level* (m):	2.03		Field parameters not measured due to limited sample volume and presence of free product.			
Length of screen collecting water (m):	0.19					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Water Sampling Data						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	Free phase product present
Water Sampling				Soil Sampling		
Date & Time Collected:	18-Aug-11			Date and Time Collected:	18-Aug-11	
Sample Number - Water:	C409-BMW1W			Sample Number - Soil:	C411-BMW1A	
					C411-BMW1B	
Sample Containers:	1x500mL, 1x25mL plastic Limited sample volume			Sample Containers:	3x125mL glass 3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	clear, sl. yellow strong HC odour			Soil Description:	Light brown sand and gravel, well graded, dry	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

5 UPPER SITE LANDFILL

5.1 BACKGROUND AND MONITORING PROGRAM

The Upper Site Landfill is located approximately 200 m east of the former module train on the eastern margin of the upper site. The Upper Site Landfill is bound by the Tier II Disposal Facility on the west and moderately sloping boulder fields to the north, east and south. The landfill consists of two lobes: a Main Lobe with engineered cover encompassing a footprint of approximately 12,500 m² and a final cover extending approximately 3.5 m to 5.0 m above the surrounding grade; and a South Lobe encompassing a footprint of approximately 1,000 m² and final cover extending approximately 0.75 m above the surrounding grade. Based on existing information regarding this landfill as a source of contamination, its potential migration pathways and receptors, the landfill was classified as a high potential environmental risk. The remediation consisted of complete excavation of the former north lobe, partial excavation and installation of a leachate containment system on the main lobe, and regrading of the south lobe. The containment system design consisted of the installation of a synthetic liner system anchored in the permafrost around the toe of the landfill and regraded with sufficient granular fill at the surface to cause aggradation of permafrost through the landfill's contents.

Four (4) groundwater monitoring wells are installed at the landfill perimeter, and 4 thermistors are installed within the landfill footprint to monitor freeze-back conditions.

The long-term monitoring plan consists of visual monitoring, collection of soil and groundwater samples and monitoring of subsurface ground temperatures. The 2011 monitoring of this landfill includes a visual inspection to verify for evidence of settlement or erosion, collection of soil and groundwater samples to monitor for the presence of leachate and collection of ground temperature data from the thermistors. Locations of groundwater monitoring wells, soil samples and thermistor installations are identified on Figure CAM-4.4.

Soil at all stations was sampled as specified. Groundwater from each of the monitoring wells was sampled for all parameters as per the ToR, with the exception of MW-10 and MW-13 which were dry and subsequently could not be sampled at the time of the assessment.

5.2 VISUAL INSPECTION REPORT

The visual inspection of the Upper Site Landfill was conducted on August 20, 2011. The Visual Inspection Checklist/Report has been completed as per the ToR and is included as Table XX of this report.

Settlement

Indications of localized settlement were noted at three locations and consisted of intersecting linear depressions along the crest of the west side of the Main Lobe (Feature A); a small oval-shaped depression on the north crest of the Main Lobe (Feature B); and an oval and irregular depression on the east side slope and southeast crest of the South Lobe (Feature C). With the exception of Feature B, all features appear consistent with the previous 2010 assessment and have an acceptable severity rating. Feature I is associated with an erosion feature extending along the north side of the lobe and is not in direct contact with the South Lobe.

Localized sink holes of up to 30 cm deep were also noted amongst the uncompacted bouldery fill placed along the margin of the South Lobe regrade area (Feature I). Minor erosion was also

evident in this area (Feature G), likely contributing to localized settlement and soil washing between the boulders.

Erosion

Four areas of erosion were noted along the margins of the Main and South lobes, including: minor surface erosion within seasonal drainage features that extend along the southwest toe of the Main Lobe (Feature D); moderate erosion and settlement (see above) along the north side of the South Lobe (Feature G); shallow erosion in the vicinity of VT-2 on the east crest of the Main Lobe (Feature E) and three areas of minor erosion on the east and west sides of the South Lobe (Feature F). Both features D and G are not in direct contact with the lobes and appear to be consistent with findings from the 2010 assessment, whereas Features E and F were not noted during the previous assessment. All features have an acceptable severity rating.

Frost Action

No indications of frost action were noted.

Evidence of Burrowing Animals

No indications of burrowing animals were noted.

Re-establishment of Vegetation

No evidence of vegetation was noted on the landfill.

Staining

No evidence of staining was noted on or adjacent to the landfill.

Seepage Points

No evidence of specific seepage points was noted.

Debris

There is one area of partially buried cloth debris on the west side of the South Lobe (Feature H). The debris appears to be isolated within the shallow landfill cover materials. No other indications of debris were noted at the landfill. Observations appear consistent with findings from the previous 2010 assessment.

Presence/Condition of Monitoring Instruments

All monitoring well and thermistor installations were found to be in good condition at the landfill.

Other Features of Note

As noted above, localized settlement was noted within the bouldery fill placed along the north margins of the South Lobe (Feature I). This feature appears to be associated with overland drainage that extends between the lobes. Observations appear consistent with findings from the previous 2010 assessment.

Relatively small and discontinuous areas of ponded water were present along a drainage path that extends along the southwest toe of the Main Lobe. These ponded areas appear to be associated with overland runoff originating from upgradient areas (i.e. the Tier II Disposal Facility).

Discussion

The Upper Site Landfill performance with respect to containment of the debris within the landfill is rated as acceptable. A visual inspection report, including supporting photos and a drawing, is presented in the following pages.

Table XX: Visual Inspection Checklist / Inspection Report – Upper Site Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 of 2

SITE NAME: CAM-4 PELLY BAY
LANDFILL DESIGNATION: UPPER SITE LANDFILL
DATE OF INSPECTION: AUGUST 20, 2011
DATE OF PREVIOUS INSPECTION: AUGUST 21-22, 2010
INSPECTED BY: A. PASSALIS
REPORT PREPARED BY: A. PASSALIS
The inspector/reporter represents to the best of his/her knowledge that 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.

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT**LANDFILL VISUAL INSPECTION**

Site Name: CAM-4 - Pelly Bay
 Landfill: Upper Site Landfill
 Designation: Leachate Containment
 Date Inspected: August 17 - 20, 2011
 Inspected by: Andrew Passalis, P.Eng.
 Sila Remediation Inc.

Signature:


UPPER SITE LANDFILL

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE A See Figure CAM-4.4 (west crest of Main Lobe)	1 m	0.1 - 0.3 m	5 cm	Isolated	Minor linear depressions	USLF-32, 33	Acceptable	Depressions oriented parallel and perpendicular to crest.
		FEATURE B See Figure CAM-4.4 (north crest of Main Lobe) (NEW OBS.)	1.5 m	1 m	5 - 7 cm	Isolated	Minor depression	USLF-9, 10	Acceptable	Localized settlement on crest.
		FEATURE C See Figure CAM-4.4 (south end of South Lobe)	2.5 - 3 m	0.3 - 1.5 m	10 - 15 cm	Isolated	Minor depressions	USLF-24, 26	Acceptable	Localized settlement on east and southeast crest of lobe.
Erosion	Yes	FEATURE D See Figure CAM-4.4 (SW toe of Main Lobe)	25 m	0.3 - 1.0 m	2 - 5 cm	N/A	Minor surficial erosion	USLF-35	Acceptable	Minor erosion along drainage feature extending along southwest toe. Not in contact with landfill cover.
		FEATURE E See Figure CAM-4.4 (E crest of Main Lobe) (NEW OBS.)	8 m	5 m	5 - 10 cm	Isolated	Minor surficial erosion	USLF-15	Acceptable	Minor erosion (washing) of fines in vicinity of VT-2.
		FEATURE F See Figure CAM-4.4 (N of South Lobe) (NEW OBS.)	0.8 - 7 m	0.2 - 0.3 m	5 - 15 cm	Isolated	Minor surficial erosion	USLF-22, 27	Acceptable	Minor erosion on east and southeast crests. Self armoring.
		FEATURE G See Figure CAM-4.4 (N of South Lobe)	25 m	0.5 m	5 - 15 cm	N/A	Minor surficial erosion	USLF-19, 30	Acceptable	Minor erosion along drainage feature extending along north side of lobe. Not in contact with landfill cover. Localized settlement between boulders.
Frost Action	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Animal Burrows	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Staining	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation Stress	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Seepage Points	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Acceptable	Isolated (not in contact with landfill)
Debris Exposed	Yes	FEATURE H See Figure CAM-4.4 (South Lobe)	0.3 m	0.2 m	Unknown	Isolated	Cloth debris	USLF-29	Acceptable	Partially buried cloth debris in landfill cover.
Presence/Condition of Monitoring Instruments	Yes	See Figure CAM-4.4 and Photographic Record	N/A	N/A	N/A	None	MW-10, 11, 12, 13 VT-1, 2, 3, 4	USLF-10W, 11W, 12W, 13W USLF-5, 4, 3, 2	N/A	All monitoring wells and thermistors in good condition.
Other Features of Note:	Yes	FEATURE I See Figure CAM-4.4 (N of South Lobe)	4 m	2 m	10 - 30 cm	Isolated	Localized settlement	USLF-41	Acceptable	Not in direct contact with landfill. Settlement of fines between cobbles and boulders resulting from drainage through area.
		Localized water ponded along southwest toe of Main Lobe - associated with Feature D.	1 - 16 m	0.5 - 1 m	5 cm	N/A	Localized ponding of water along drainage course.	USLF-34, 35	Acceptable	Not in contact with landfill cover.
Additional Photos	Yes	See Figure CAM-4.4 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	Not Observable	General photos for documentation. No features of note.
Overall Landfill Performance:	Acceptable									

5.3 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for the Upper Site Landfill has been completed as per the ToR and is included as Table XXI hereafter.

Table XXI: Preliminary Stability Assessment – Upper Site Landfill

Feature	Severity Rating	Extent
Settlement	Acceptable	Isolated
Erosion	Acceptable	Isolated
Frost Action	Not observed	None
Staining	Not observed	None
Vegetation Stress	Not observed	None
Seepage/Ponded Water	Acceptable	Isolated (not in contact with landfill)
Debris Exposure	Acceptable	Isolated
Overall Landfill Performance	Acceptable	

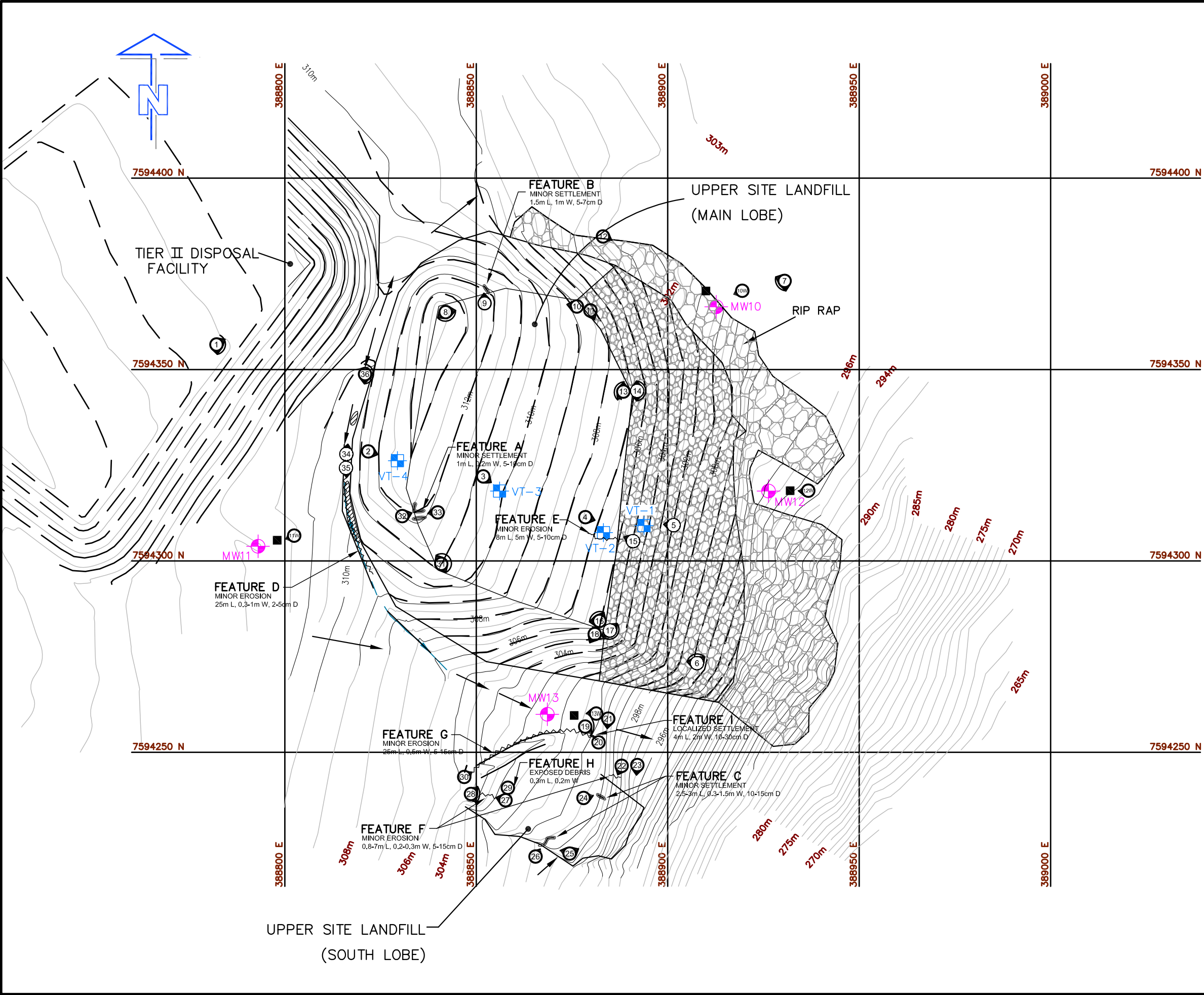
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears 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

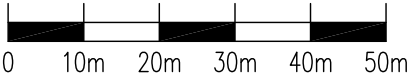
The Location Plan for the Upper Site Landfill has been completed as per the ToR and is presented in Figure CAM-4.4.

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LEGEND

- SOIL SAMPLE LOCATION
- MONITORING WELL LOCATION
- VERTICAL THERMISTOR LOCATION
- PHOTOGRAPH LOCATION
- SETTLEMENT (NTS)
- EROSION (NTS)
- PONDING



A	FINAL	12-02-15	P.L.	A.P.	P.G.
NO.	VERSION	DATE	PAR	VERIF.	APPR.



FINAL REPORT
COLLECTION OF LANDFILL MONITORING DATA
CAM-4, KUGAARUK, NUNAVUT
UPPER SITE LANDFILL

SITE REMEDIATION SOLUTIONS

Biogenie, a division of EnGlobe Corp.
4495 Wilfrid-Hamel Blvd, Suite 200
Quebec, (Quebec) CANADA G1P 2J7
Phone: (418) 653-4422 Fax: (418) 653-3583



MEASUREMENT UNIT Meter	SCALE: 1 : 1,000	DATE (month-year): FEBRUARY 2012
DRAWN BY: P. LÉGARE	VERIFIED BY: A. PASSALIS	APPROVED BY: P. GÉLINAS
PROJECT NO: CD9229_003_160	DRAWING NO: CD9229_003_160-CAM-4_4	PAGE PL

FIGURE CAM-4.4

5.5 PHOTOGRAPHIC RECORDS

The Photographic Record for the Upper Site Landfill has been completed as per the ToR and is included as Table XXII hereafter. The Photographic Record contains an index and “thumbnail” photographs only. Full-sized photographs can be found in the Addendum DVD-ROM.

Table XXII: Landfill Visual Inspection Photo Log – Upper Site Landfill

Photo (USLF-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
1		C411_4762	17/08/2011	388782	7594357	Panoramic view looking NE to S of west side of landfill from Tier II DF
2		C411_4770	17/08/2011	388822	7594328	View looking ESE at VT-4 on west side of landfill. VT-3 visible in background.
3		C411_4771	17/08/2011	388852	7594322	View looking SE at VT-3 located on west cover area of landfill
4		C411_4772	17/08/2011	388879	7594311	View looking ESE at VT-2 located on east crest of landfill. VT-1 in background.
5		C411_4773	17/08/2011	388902	7594309	View looking W at VT-1 located on east side slope of landfill. VT-2 in background.
6		C411_4793	18/08/2011	388908	7594273	Panoramic view looking W to NE of southeast side slope from southeast toe of landfill
7		C411_4798	18/08/2011	388930	7594373	Panoramic view looking S to WNW at northeast side slope from northeast toe of landfill.
8		C411_4955	20/08/2011	388842	7594365	Panoramic view looking SW to E across surface from northwest corner of landfill
9		C411_4956	20/08/2011	388852	7594367	View looking N at minor depression on north side slope of landfill (1.5m L, 1m W, 5-7cm D) - FEATURE B
10		C411_4957	20/08/2011	388877	7594366	View looking NW along northeast crest of landfill
11		C411_4958	20/08/2011	388879	7594366	View looking SE along northeast crest of landfill
12		C411_4959	20/08/2011	388884	7594385	View looking ESE along toe of Type I rip rap on northeast corner of landfill
13		C411_4960	20/08/2011	388889	7594344	Panoramic view looking SW to N across surface from northeast crest of landfill (VT-3 and VT-4 visible in background)
14		C411_4961	20/08/2011	388891	7594344	Panoramic view looking N to S across Type 1 rip rap placed on east (downgradient) slope of landfill

Table XXII: Landfill Visual Inspection Photo Log – Upper Site Landfill (Continued)

Photo (USLF-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
15		C411_4963	20/08/2011	388890	7594305	View looking WNW at minor erosion (washing) of fines near VT-2 on east crest of landfill (8m L, 5m W, 5-10 cm D) - FEATURE E
16		C411_4965	20/08/2011	388882	7594284	Panoramic view looking W to NNE across cover from southeast crest of landfill. Thermistors VT-1 through 4 are visible right to left
17		C411_4966	20/08/2011	388884	7594282	Panoramic view looking NE to SW across Type I rip rap on southeast crest of landfill. South Lobe visible on right.
18		C411_4967	20/08/2011	388882	7594282	View looking SW at South Lobe area and MW-13 from southeast crest of landfill
32		C411_4982	20/08/2011	388831	7594312	View looking NE at linear depressions on southwest crest of landfill (1m L, 0.2m W, 5-10cm D) - FEATURE A
33		C411_4983	20/08/2011	388839	7594313	View looking NW at parallel linear depressions on southwest crest of landfill (1m L, 0.2m W, 5-10cm D) - FEATURE A
34		C411_4985	20/08/2011	388816	7594327	View looking N at drainage and minor ponding along southwest toe of landfill. MW-5 visible in background. - FEATURE D
35		C411_4986	20/08/2011	388816	7594325	View looking SE at drainage and minor ponding along southwest toe of landfill. - FEATURE D
36		C411_4987	20/08/2011	388821	7594348	View looking S along at minor ponding along west toe of landfill
South Lobe						
19		C411_4968	20/08/2011	388879	7594256	View looking SE at erosion channel extending along the north side of South Lobe - FEATURE I
20		C411_4969	20/08/2011	388882	7594253	Settlement between boulders in drainage path north of South Lobe - FEATURE I
21		C411_4970	20/08/2011	388884	7594258	View looking S at north slope of South Lobe
22		C411_4971	20/08/2011	388887	7594247	View looking SSW at minor erosion on east side slope of South Lobe (0.8m L, 0.2m W, 15cm D) FEATURE F
23		C411_4972	20/08/2011	388891	7594247	View looking S along east side slope of South Lobe

Table XXII: Landfill Visual Inspection Photo Log – Upper Site Landfill (Continued)

Photo (USLF-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
24		C411_4973	20/08/2011	388878	7594239	View looking E at minor depression on/below crest on east side of South Lobe (2.5m L, 1.5m W, 10-15cm D) - FEATURE C
25		C411_4974	20/08/2011	388875	7594224	Panoramic view looking NW to NE across surface from south end of South Lobe
26		C411_4975	20/08/2011	388865	7594224	View looking NE at minor erosion on southeast corner of South Lobe (3m L, 0.3m W, 10-15cm D) - FEATURE C
27		C411_4976	20/08/2011	388857	7594238	View looking E at minor erosion on southwest corner of South Lobe (7m L, 0.3m W, 5cm D) - FEATURE F
28		C411_4977	20/08/2011	388849	7594239	Panoramic view looking NE to SE across surface from west end of South Lobe
29		C411_4978	20/08/2011	388858	7594241	Piece of black fabric exposed on northwest surface of lobe (0.3m L, 0.2m W) - FEATURE H
30		C411_4980	20/08/2011	388847	7594244	View looking NE at erosion channel extending along the north side of lobe (25m L, 0.5m W, 5-15cm D) - FEATURE G
31		C411_4981	20/08/2011	388841	7594300	Panoramic view looking NW to SE across surface from southwest crest of landfill.
Soil Sampling						
MW-10		C411_4796	18/08/2011	388910	7594371	Sampling location C4-10W located downgradient of Upper Site Landfill
10W		C411_4797	18/08/2011	388919	7594370	View looking SW at C4-10W soil sample location
MW-11		C411_4788	18/08/2011	388798	7594305	Sampling location C4-11W located upgradient of Upper Site Landfill
11W		C411_4789	18/08/2011	388803	7594307	View looking WSW at C4-11W soil sample location
MW-12		C411_4794	18/08/2011	388932	7594318	Sampling location C4-12W located downgradient of Upper Site Landfill
12W		C411_4795	18/08/2011	388937	7594319	View looking W at C4-12W soil sample location

Table XXII: Landfill Visual Inspection Photo Log – Upper Site Landfill (Continued)

Photo (USLF-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
MW-13		C411_4790	18/08/2011	388876	7594260	Sampling location C4-13W located downgradient of Upper Site Landfill
13W		C411_4791	18/08/2011	388881	7594260	View looking W at C4-13W soil sample location

5.6 THERMAL MONITORING DATA

All thermistors at the Upper Site Landfill were inspected and found to be in good condition, with the exception of the datalogger at VT-1 (Serial # 111071) which would not communicate with the field computer. On-site troubleshooting indicated the datalogger batteries had likely failed in addition to a possible hardware failure and would require off-site repair. The VT-1 unit was consequently disconnected and shipped south for repair. In addition, the dataloggers at VT-2 and VT-3 indicated power interruption or time encode errors during communication, suggesting battery levels may have dropped below normal operating conditions.

As noted above, battery levels in datalogger VT-1 was noted to be below operating levels and consequently communication and data retrieval could not be completed from this location. Battery levels in VT-2 and VT-3 were also noted to be fair to weak and should undergo replacement during the next scheduled monitoring period.

With the exception of anomalous resistivity readings at VT-2 (bead #2) all accessible analogues/thermocouples were observed to be functioning properly. Internal memories were reset and clocks were synchronized in the functioning units using the Prolog software.

5.7 LANDFILL TEMPERATURE DATA FROM DATALOGGERS

Manual resistive and temperature data readings were collected from the thermistor strings as per the ToR. Manual readings and inspection results for each thermistor are presented on the Thermistor Annual Maintenance Reports included in this report. A complete datalogger RAW data set for the 2010-2011 period has been forwarded to DCC as per the ToR.

5.8 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results and evaluation of the analytical data for the 2011 Upper Site Landfill samples are presented in Tables XXIII and XXIV hereafter. Field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Appendix C at the end of this report.

Table XXIII: Soil Chemical Analysis Results – Metals and PCBs –
Upper Site Landfill

Sample Name	Location	Depth [cm]	As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Hg [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	PCBs [mg/kg]
C4 11- 10WA	MW-10	0-15	1	<0.1	29	4	6	4	<0.05	14	22	<0.010
C4 11- 10WB		40-50	1	<0.1	16	4	<5	4	<0.05	7	18	<0.010
C4 11- 11WA	MW-11	0-15	2	<0.1	33	7	10	8	<0.05	16	42	<0.10
C4 11- BD1		0-15	2	<0.1	60	7	9	9	<0.05	32	46	<0.050
C4 11- 11WB		40-50	2	<0.1	28	7	11	7	<0.05	15	38	<0.50
C4 11- 12WA	MW-12	0-15	1	0.5	30	6	13	21	<0.05	13	94	<0.10
C4 11- 12WB		40-50	1	<0.1	26	5	6	5	<0.05	13	26	<0.050
C4 11- 13WA	MW-13	0-15	1	<0.1	22	4	<5	5	<0.05	9	34	<0.020
C4 11- 13WB		40-50	<1	<0.1	24	3	<5	3	<0.05	12	18	<0.010

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Table XXIV: Soil Chemical Analysis Results – PHCs and BTEX –
Upper Site Landfill

Sample Name	Sample Location	Depth Below Grade [cm]	Parameters						
			Benzene [mg/kg]	Toluene [mg/kg]	Ethylbenzene [mg/kg]	Xylenes [mg/kg]	PHC(F1) [mg/kg]	PHC(F2) [mg/kg]	PHC(F3) [mg/kg]
C4 11- 10WA	MW-10	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 10WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 11WA	MW-11	0-15	<0.0050	<0.020	<0.010	<0.040	<12	140	11,000
C4 11- BD1		0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	2,900
C4 11- 11WB		40-50	<0.0050	<0.020	<0.010	<0.040	24	170	10,000
C4 11- 12WA	MW-12	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	160
C4 11- 12WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	400	99
C4 11- 13WA	MW-13	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	11
C4 11- 13WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀, does not include BTEX fractionsPHC (F2): Petroleum hydrocarbon C_{>10} to C₁₆PHC (F3): Petroleum hydrocarbon C_{>16} to C₃₄

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Table XXV: Evaluation of 2011 Soil Analytical Data – Upper Site Landfill

Parameter	2011
Copper	Concentrations ranged between <5-13 mg/kg with a mean concentration of 6.7 mg/kg. The highest concentrations were observed at the upgradient location MW-11 (10 mg/kg, surface 11 mg/kg - depth) and downgradient location MW-12 (13 mg/kg - surface). The lowest concentrations were observed at downgradient locations MW-10 (depth) and MW-13 (surface and depth).
Nickel	Concentrations ranged between 7-16 mg/kg with detectable concentrations at all sample locations and a mean concentration of 12.4 mg/kg. The most elevated concentration was observed at upgradient location MW-11 (16 mg/kg, surface and 15 mg/kg - depth), whereas the lowest concentrations were observed at downgradient locations MW-10 (7 mg/kg - depth) and MW-13 (9 mg/kg - surface).
Cobalt	Concentrations ranged between 3-7 mg/kg with a mean of 5.0 and detectable concentrations noted at all locations. The highest concentration was observed at upgradient location MW-11 (7 mg/kg, surface and depth) and downgradient locations MW-12 (6 mg/kg - surface), whereas the lowest concentration was noted at downgradient locations MW-10 and MW-13 (3-4 mg/kg).
Cadmium	Trace concentrations were noted at downgradient location MW-12 (0.5 mg/kg, surface). All other sample locations reported concentrations less than the method detection limit (0.1 mg/kg).
Lead	Concentrations ranged between 3-21 mg/kg with a mean of 7.1 with detectable concentrations noted at all locations. The highest and lowest concentrations were observed at downgradient locations MW-12 (surface) and MW-13 (depth), respectively. Slightly elevated concentrations were also noted at upgradient location MW-11 (7-8 mg/kg).
Zinc	Concentrations ranged between 18-94 mg/kg with a mean of 6.5 mg/kg. The most elevated concentrations were noted at downgradient location MW-12 (94 mg/kg - surface) and upgradient location MW-11 (42 mg/kg, surface and 38 mg/kg - depth), whereas the lowest concentration was noted at depth at downgradient location MW-10 and MW-13.
Chromium	Concentrations ranged between 16-33 mg/kg with a mean of 26.0 mg/kg. Slightly elevated concentrations were observed at surface at upgradient location MW-11 (33 mg/kg) and downgradient locations MW-10 (29 mg/kg) and MW-12 (30 mg/kg). The lowest concentration was noted at depth at downgradient location MW-10.
Arsenic	Concentrations ranged between 1-2 mg/kg with detectable concentrations noted at all but one sample location (MW-13- depth). The highest concentration was observed at upgradient location MW-11 (surface and depth).
Mercury	All reported concentrations were less than the method detection limit (0.05 mg/kg).
PCBs	All reported concentrations were less than the method detection limits (0.01-0.5 mg/kg).
TPH	Concentrations ranged between <12-11,140 mg/kg with elevated Fraction F3 concentrations noted at upgradient sample location MW-11 (11,000 mg/kg, surface and 10,000 mg/kg - depth). Slightly elevated Fraction F3 concentrations were also noted at downgradient locations MW-12 (160 mg/kg, surface and 99 mg/kg - depth). Detectable Fraction F2 concentrations between 140-400 mg/kg were also noted at these locations. The highest TPH concentrations were noted at surface and depth at upgradient location MW-11. MW-11 (1,300 mg/kg). MW-11 is located within a disturbed area upgradient of the Upper Site Landfill and downgradient of the Tier II Disposal Facility.

5.9 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results and evaluation of analytical data for the 2011 Upper Site Landfill samples are presented in Tables XXIII and XXIV. As noted above, MW-10 and MW-13 (downgradient locations) were dry at the time of monitoring and consequently no groundwater samples were collected at these locations. Groundwater samples collected as part of the QA/QC program are presented in Appendix C at the end of the report.

Table XXVI: Groundwater Chemical Analysis Results – Upper Site Landfill

Sample Name	Location	As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Hg [ug/L]	Ni [mg/L]	Zn [mg/L]	PCBs [mg/L]	TPH [mg/L]
C4 11-11W	MW-11	0.002	<0.0002	0.018	0.0018	0.0065	0.0011	0.005	0.016	0.005	<0.000050	<2
C4 11-12W	MW-12	0.005	0.0003	0.060	0.042	0.050	0.014	0.050 ⁽¹⁾	0.071	0.30	<0.000050	<2

(1): Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Table XXVII: Evaluation of 2011 Groundwater Analytical Data – Upper Site Landfill

Parameter	2011
Copper	Concentrations ranged between 0.0065-0.050 mg/L, with the higher concentration noted at downgradient location MW-12.
Nickel	Concentrations ranged between 0.016-0.071 mg/L, with the slightly higher concentration noted at downgradient location MW-12.
Cobalt	Concentrations ranged between 0.0018-0.042 mg/L, with the downgradient sample concentration approximately 23 times greater than that of the upgradient location at MW-11.
Cadmium	Concentrations ranged between <0.0002-0.0003 mg/L, with trace concentrations noted at only the downgradient location.
Lead	Concentrations ranged between 0.0011-0.014 mg/L, with the downgradient location exhibiting a concentration approximately one order of magnitude higher than the upgradient sample concentration at MW-11.
Zinc	Concentrations ranged between 0.005-0.30 mg/L, with the downgradient location exhibiting a concentration approximately two orders of magnitude higher than the upgradient sample concentration at MW-11.
Chromium	Concentrations ranged between 0.018-0.060 mg/L, with a slightly higher concentration noted at downgradient location MW-12.
Arsenic	Concentrations ranged between 0.002-0.005 mg/L, with a slightly higher concentration noted at downgradient location MW-12.
Mercury	Concentrations ranged between 0.000005-0.000050 mg/L, with the downgradient location exhibiting a concentration one order of magnitude higher than the upgradient sample concentration at MW-11.
PCBs	All reported concentrations were less than the method detection limit (0.00005 mg/L).
TPH	All reported concentrations were less than the method detection limit (2 mg/L).

5.10 THERMISTOR ANNUAL MAINTENANCE REPORTS

The thermistor annual maintenance reports for VT-1 to VT-4 are presented in this section.

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name:	CAM-4	Thermistor Location	Upper Site Landfill		
Thermistor Number:	VT01	Inclination	Vertical		
Install Date:	28-Sep-06	First Date Event	27-Aug-07 Last Date Event	22-Aug-10	
Coordinates and Elevation	N	E	Elev	304.43	
Length of Cable (m)	7.7	Cable Lead Above Ground (m)	1.4	Nodal Points	13
Datalogger Serial #	111071	Cable Serial Number	1615		

Code CAM-4VT01

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☐	☒ Batteries should be replaced during maint
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	26-Aug-07	
Battery Levels	Main	Aux

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	8.683	
2	9.032	
3	12.164	
4	13.503	
5	15.452	
6	16.897	
7	18.015	
8	19.197	

Bead	ohms	Temp. (°C)
9	20.34	
10	21.51	
11	22.70	
12	22.26	
13	21.17	

Observations and Proposed Maintenance

Unable to communicate with datalogger. Batteries below operating level.
Recommend battery replacement during next inspection period (2012).
Unable to open datalogger housing (1 of 4 bolts seized). Ship datalogger south for maintenance.

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location: Upper Site Landfill
Thermistor Number: VT02	Inclination: Vertical
Install Date: 28-Sep-06	First Date Event: 27-Aug-07 Last Date Event: 22-Aug-10
Coordinates and Elevation: N	E Elev: 306.71
Length of Cable (m): 6.7	Cable Lead Above Ground (m): 1.1 Nodal Points: 11
Datalogger Serial #: 2020175	Cable Serial Number: 1617

Code CAM-4VT02

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐ Padlock replaced in 2011.
Cover	☒	☐
Data Logger	☐	☒ Batteries should be replaced in 2012.
Cable	☒	☐
Beads	☒	☐ Bead #2 not reading correct ohms or temp
Battery Installation Date	26-Aug-07	
Battery Levels	Main 11.34 V	Aux 11.80 V (fair)

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	8.655	14.4632
2	--	--
3	12.584	5.3136
4	13.843	3.4518
5	15.578	1.0925
6	17.167	-0.7968
7	18.311	-2.0261
8	19.611	-3.3735

Bead	ohms	Temp. (°C)
9	20.67	-4.4419
10	22.17	-5.7471
11	23.66	-6.9807

Observations and Proposed Maintenance

Error message during downloading data. "Power interruption"
Complete full memory dump.
Recommend battery replacement during next inspection period (2012).

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name:	CAM-4	Thermistor Location	Upper Site Landfill		
Thermistor Number:	VT03	Inclination	Vertical		
Install Date:	28-Sep-06	First Date Event	27-Aug-06	Last Date Event	22-Aug-10
Coordinates and Elevation	N	E	Elev	310.09	
Length of Cable (m)	7.2	Cable Lead Above Ground (m)	1.1	Nodal Points	12
Datalogger Serial #	111126	Cable Serial Number	1618		

Code CAM-4VT03

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☐	☒ Batteries should be replaced in 2012.
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	26-Aug-07	
Battery Levels	Main	Aux

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	7.843	
2	9.998	
3	12.707	
4	14.576	
5	16.408	
6	17.575	
7	18.687	
8	19.926	

Bead	ohms	Temp. (°C)
9	21.02	
10	22.45	
11	23.51	
12	24.09	

Observations and Proposed Maintenance

Unable to communicate with datalogger. "Invalid argument to time encode."
 Unable to complete a full memory dump.
 Batteries below operating level.
 Recommend battery replacement during next inspection period (2012).

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name:	CAM-4	Thermistor Location	Upper Site Landfill
Thermistor Number:	VT04	Inclination	Vertical
Install Date:	26-Sep-06	First Date Event	27-Aug-07 Last Date Event22-Aug-10
Coordinates and Elevation	N	E	Elev312.8
Length of Cable (m)	6.2	Cable Lead Above Ground (m)	1.2 Nodal Points10
Datalogger Serial #	207046	Cable Serial Number	1619

Code CAM-4VT04

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☒	☐
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	22-Aug-10	
Battery Levels	Main 11.34 V	Aux 13.75

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	7.826	15.2403
2	9.673	10.6214
3	12.381	5.5756
4	13.921	3.2144
5	15.650	0.9237
6	17.056	-0.7560
7	18.145	-2.0261
8	19.627	-3.4727

Bead	ohms	Temp. (°C)
9	20.66	-4.5000
10	20.74	-4.6773

Observations and Proposed Maintenance

5.11 MONITORING WELL SAMPLING/INSPECTION LOGS

The monitoring well sampling and inspection logs for MW-10, MW-11, MW-12 and MW-13 are presented in the following pages.

2011 Monitoring Well Sampling Log (MW-10)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-10					
Facility:	Upper Site Landfill					
Known Data						
Depth of installation* (m):	3.37					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	0.38					
Measured Data						
Condition of well:	Good	Procedure/Equipment:	Interface Meter			
Procedure/Equipment:	Measuring Tape	Depth to water surface (m):	(dry)			
Well height above ground (m):	0.67	Depth to bottom (m):	2.48			
Diameter of well (m):	0.05	Free product thickness (mm):	-			
Calculations						
Depth of water (m):	-	Evidence of sludge:	-			
Well volume of water (L):	-	Evidence of freezing/siltation:	-			
Static water level* (m):	-					
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-		-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	-			Date and Time Collected:	18-Aug-11	
Sample Number - Water:				Sample Number - Soil:	C411-10WA	
					C411-10WB	
Sample Containers:				Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:				Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:				Soil Description:	Light brown sand, fine gr., trace gravel, dry	
Sampling Equipment Decontamination (Y/N):	n/a			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	-			Number Washes:	1	
Number Rinses:	-			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-11)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-11					
Facility:	Upper Site Landfill					
Known Data						
Depth of installation* (m):	3.85					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	0.86					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	2.16		
Well height above ground (m):	0.56		Depth to bottom (m):	3.55		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	1.40		Evidence of sludge:	-		
Well volume of water (L):	2.74		Evidence of freezing/siltation:	-		
Static water level* (m):	1.60					
Length of screen collecting water (m):	1.40					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	3.0	3.2	7.5	689	57	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	18-Aug-11			Date and Time Collected:	18-Aug-11	
Sample Number - Water:	C411-11W			Sample Number - Soil:	C411-11WA	
					C411-BD1 (11WA)	
					C411-11WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	8x125mL glass	
					3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Light brown sand, some gravel and silt, damp	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-12)

Site name:		CAM-4				
Date of sampling event:		18-Aug-11				
Names of samplers:		Andrew Passalis				
Monitoring well ID:		MW-12				
Facility:		Upper Site Landfill				
Known Data						
Depth of installation* (m):		3.67				
Length of screened section (m):		2.03				
Depth to top of screen* (m):		0.68				
Measured Data						
Condition of well:		See note below		Procedure/Equipment:		Interface Meter
Procedure/Equipment:		Measuring Tape		Depth to water surface (m):		1.94
Well height above ground (m):		0.68		Depth to bottom (m):		2.18
Diameter of well (m):		0.05		Free product thickness (mm):		-
Calculations						
Depth of water (m):		0.24		Evidence of sludge:		-
Well volume of water (L):		0.47		Evidence of freezing/siltation:		-
Static water level* (m):		1.26		Insufficient sample volume to complete measurement of field parameters.		
Length of screen collecting water (m):		0.24				
Development/Purging Information						
Equipment:		Dedicated waterra tubing and foot valve				
Water Sampling						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
18-Aug-11	-	-	-	-	-	-
Soil Sampling						
Date & Time Collected:		18-Aug-11		Date and Time Collected:		18-Aug-11
Sample Number - Water:		C411-12W		Sample Number - Soil:		C411-12WA
						C411-12WB
Sample Containers:		2x500mL, 1x250mL plastic		Sample Containers:		2x125mL glass
		insufficient sample volume				2x125mL glass
Procedure/Equipment:		Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:		Steel & Plastic Trowels
Water Description:		C&C, sl HC odour		Soil Description:		Light brown silty sand, dry to damp, faint HC odour, bldrs at 45
Sampling Equipment Decontamination (Y/N):		N, dedicated		Sampling Equipment Decontamination (Y/N):		Y
Number Washes:		0		Number Washes:		1
Number Rinses:		0		Number Rinses:		1

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-13)

Site name:	CAM-4					
Date of sampling event:	18-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-13					
Facility:	Upper Site Landfill					
Known Data						
Depth of installation* (m):	3.18					
Length of screened section (m):	1.90					
Depth to top of screen* (m):	0.20					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	(dry)	
Well height above ground (m):	0.74			Depth to bottom (m):	2.47	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations						
Depth of water (m):	-			Evidence of sludge:	-	
Well volume of water (L):	-			Evidence of freezing/siltation:	-	
Static water level* (m):	-					
Length of screen collecting water (m):	-					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
-	-	-	-	-	-	-
Water Sampling				Soil Sampling		
Date & Time Collected:	-			Date and Time Collected:	18-Aug-11	
Sample Number - Water:				Sample Number - Soil:	C411-13WA	
					C411-13WB	
Sample Containers:				Sample Containers:	3x125mL glass/bag	
					3x125mL glass/bag	
Procedure/Equipment:				Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:				Soil Description:	Brown sand, trace gravel and cobbles, damp	
Sampling Equipment Decontamination (Y/N):	n/a			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

6 LOWER SITE NON-HAZARDOUS WASTE LANDFILL

6.1 BACKGROUND AND MONITORING PROGRAM

The Lower Site Non-Hazardous Waste Landfill (LS NHWLF) is located approximately 1.3 km west of the west end of the airstrip, and is bordered to the northwest and northeast by the Lower Site Landfill's main and east lobes, respectively. The landfill, including granular cover, encompasses a footprint of approximately 5,200 m² with the final cover extending between 1 to 3 m above the surrounding grade. This landfill was constructed for the disposal of non-hazardous wastes, site debris and DCC Tier I and Type A hydrocarbon-impacted soil. Landfill materials are contained by a granular perimeter berm and cover. Four (4) groundwater monitoring wells are installed at the landfill perimeter.

The long-term monitoring plan consists of visual monitoring and periodic collection of soil and groundwater samples. The 2011 monitoring of this landfill includes visual inspection to assess landfill performance. Locations of groundwater monitoring wells are identified in Figure CAM-4.5.

6.2 VISUAL INSPECTION REPORT

The visual inspection of the LS NHWLF was conducted on August 20, 2011. The Visual Inspection Checklist/Report has been completed as per the ToR and is included as Table XXVIII of this report.

Settlement

Minor settlement was noted at two locations on the landfill surface, including an oval-shaped depression on the west cover area (Feature A) and a small linear depression extending down the northeast side slope (Feature B). Both features appear consistent with observations made during the previous 2010 assessment. These features have an acceptable severity rating.

Erosion

No evidence of erosion was noted.

Frost Action

No evidence of frost action was noted.

Evidence of Burrowing Animals

No indications of burrowing animals were noted.

Re-establishment of Vegetation

No evidence of vegetation was noted.

Staining

No evidence of staining was noted.

Seepage Points

No indication of seepage was noted at the landfill.

Debris

No evidence of surface debris was noted.

Presence/Condition of Monitoring Instruments

All monitoring well installations were found to be in good condition at the landfill.

Other Features of Note

There were no other features of note.

Discussion

The LS NHWLF performance with respect to containment of the debris within the landfill is rated as acceptable. No new features were noted during the 2011 inspection. The Visual Inspection report, including supporting photos and drawing, is presented in the following pages.

Table XXVIII: Visual Inspection Checklist / Inspection Report – LS NHWLF

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 of 2

SITE NAME: CAM-4 PELLY BAY
LANDFILL DESIGNATION: LS NHWLF
DATE OF INSPECTION: AUGUST 20, 2011
DATE OF PREVIOUS INSPECTION: AUGUST 22, 2010
INSPECTED BY: A. PASSALIS
REPORT PREPARED BY: A. PASSALIS
The inspector/reporter represents to the best of his/her knowledge that 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.

LANDFILL VISUAL INSPECTION

Site Name: CAM-4 - Pelly Bay
 Landfill: Lower Site Landfill Non-Hazardous Wasre Landfill
 Designation: New Landfill
 Date Inspected: August 19-20, 2011
 Inspected by: Andrew Passalis, P.Eng.
 Sila Remediation Inc.

Signature:


LOWER SITE NON-HAZARDOUS WASTE LANDFILL

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE A See Figure CAM-4.5 (west cover area)	4 m	2 m	15 cm	Isolated	Minor depression	LNH-10, 11	Acceptable	Minor depression on west cover area.
		FEATURE B See Figure CAM-4.5 (northeast side slope)	1 m	0.25 m	2 - 5 cm	Isolated	Minor depression	LNH-4, 5	Acceptable	Linear depression on northeast side slope.
Erosion	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Frost Action	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Animal Burrows	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Staining	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation Stress	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Seepage Points	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Debris Exposed	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Presence/Condition of Monitoring Instruments	Yes	See Figure CAM-4.5 and Photographic Record	N/A	N/A	N/A	None	MW-21, 22, 23	LNH21W, 22W, 23W	N/A	All monitoring wells in good condition.
Other Features of Note:	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Additional Photos	Yes	See Figure CAM-4.5 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	Not Observable	General photos for documentation. No features of note.
Overall Landfill Performance:	Acceptable									

6.3 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for the LS NHWLF has been completed as per the ToR and is included as Table XXIX hereafter.

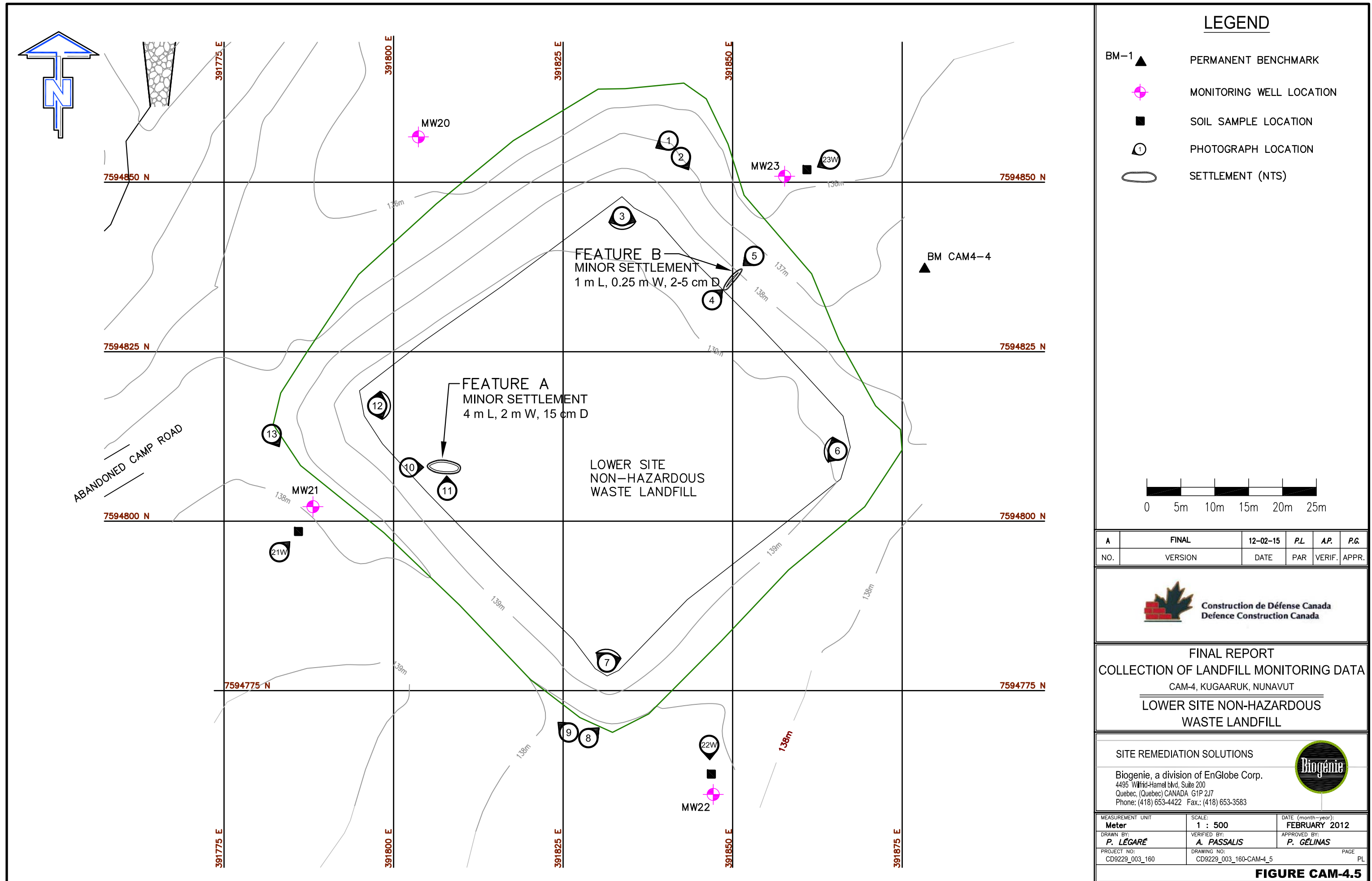
Table XXIX: Preliminary Stability Assessment – LS NHWLF

Feature	Severity Rating	Extent
Settlement	Acceptable	Isolated
Erosion	Not observed	None
Frost Action	Not observed	None
Staining	Not observed	None
Vegetation Stress	Not observed	None
Seepage/Ponded Water	Not observed	None
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

6.4 LOCATION PLAN

The Location Plan for the LS NHWLF has been completed as per the ToR and is included in the following page as Figure CAM-4.5.



6.5 PHOTOGRAPHIC RECORDS

The Photographic Record for LS NHWLF has been completed as per the ToR and is included as Table XXX hereafter. The Photographic Record contains an index and “thumbnail” photographs only. Full sized photographs are contained in the Addendum DVD-ROM.

Table XXX: Landfill Visual Inspection Photo Log – LS NHWLF

Photo (LNH-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Eastings	Northing	
1		C411_4990	20/08/2011	391841	7594856	View looking SW along northwest toe of landfill
2		C411_4991	20/08/2011	391842	7594854	View looking SE along northeast toe of landfill
3		C411_4992	20/08/2011	391834	7594845	Panoramic view looking ESE to SW across surface from north crest of landfill
4		C411_4993	20/08/2011	391847	7594833	View looking NE at minor depression on northeast side slope of landfill (1m L, 0.25m W, 2-5cm D) - FEATURE B
5		C411_4994	20/08/2011	391853	7594839	View looking SW at minor depression on northeast side slope of landfill (1m L, 0.25m W, 2-5cm D) - FEATURE B
6		C411_4995	20/08/2011	391865	7594810	Panoramic view looking SW to NW across surface from east crest of landfill
7		C411_4996	20/08/2011	391831	7594779	Panoramic view looking NW to ENE across surface from south crest of landfill
8		C411_4997	20/08/2011	391829	7594768	View looking NE along southeast toe of landfill
9		C411_4998	20/08/2011	391827	7594769	View looking SE at MW-22 located on south side of landfill
10		C411_4999	20/08/2011	391803	7594807	View looking E at minor settlement on west cover of landfill (4m L, 2m W, 15cm D) - FEATURE A
11		C411_5000	20/08/2011	391808	7594804	View looking N at minor settlement on west cover of landfill (4m L, 2m W, 15cm D) - FEATURE A
12		C411_5001	20/08/2011	391798	7594817	Panoramic view looking NNE to SSE across surface from west crest of landfill
13		C411_5002	20/08/2011	391782	7594813	View looking SE along southwest toe of landfill. MW-21 on right

Table XXX: Landfill Visual Inspection Photo Log – LS NHWLF (Continued)

Photo (LNH-)	Thumbnail	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Soil Sampling						
MW-21		C411_4844	19/08/2011	391786	7594798	Sampling location C4-21W located downgradient of Upper Site Landfill
21W		C411_4845	19/08/2011	391784	7594796	View looking NE at C4-21W soil sample location
MW-22		C411_4842	19/08/2011	391847	7594763	Sampling location C4-22W located downgradient of Upper Site Landfill
22W		C411_4843	19/08/2011	391847	7594767	View looking S at C4-22W soil sample location
MW-23		C411_4839	19/08/2011	391861	7594852	Sampling location C4-23W located downgradient of Upper Site Landfill
23W		C411_4841	19/08/2011	391864	7594853	View looking SW at C4-23W soil sample location

6.6 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results and evaluation of the analytical data for the 2011 LS NHWLF samples are presented in Tables XXXI and XXXII below. Field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Appendix C at the end of this report.

**Table XXXI: Soil Chemical Analysis Results –
Metals and PCBs – LS NHWLF**

Sample Name	Location	Depth [cm]	As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Hg [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	PCBs [mg/kg]
C4 11- 21WA	MW-21	0-15	2	<0.1	32	4	8	33	<0.05	15	84	<0.050
C4 -11 21WB		40-50	2	<0.1	19	4	8	12	<0.05	9	41	<0.050
C4 11- BD4		40-50	1	0.1	25	5	8	14	<0.05	12	43	<0.010
C4 11- 22WA	MW-22	0-15	1	<0.1	21	5	8	7	<0.05	11	23	<0.010
C4 11- 22WB		40-50	2	<0.1	16	3	<5	4	<0.05	9	18	<0.050
C4 11- 23WA	MW-23	0-15	2	<0.1	16	4	7	14	<0.05	9	26	<0.050
C4 11- 23WB		40-50	6	<0.1	21	4	7	6	<0.05	12	25	<0.010

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**Table XXXII: Soil Chemical Analysis Results – PHCs and BTEX –
LS NHWLF**

Sample Name	Sample Location	Depth Below	Parameters						
		Grade [cm]	Benzene [mg/kg]	Toluene [mg/kg]	Ethylbenzene [mg/kg]	Xylenes [mg/kg]	PHC(F1) [mg/kg]	PHC(F2) [mg/kg]	PHC(F3) [mg/kg]
C4 11- 21WA	MW-21	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 -11 21WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	31
C4 11- BD4		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 22WA	MW-22	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 22WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 23WA	MW-23	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 23WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀, does not include BTEX fractions

PHC (F2): Petroleum hydrocarbon C₁₀ to C₁₆

PHC (F3): Petroleum hydrocarbon C₁₆ to C₃₄

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Table XXXIII: Evaluation of 2011 Soil Analytical Data – LS NHWLF

Parameter	2011
Copper	Concentrations ranged between 7-8 mg/kg with a mean concentration of 7.2 mg/kg. With the exception of the depth sample at MW-22, all sample locations reported detectable concentrations. The highest concentration was observed at MW-21 (surface and depth) and MW-22 (surface).
Nickel	Concentrations ranged between 9-15 mg/kg with detectable concentrations at all sample locations and a mean concentration of 10.8 mg/kg. The most elevated concentration was observed at MW-21 (surface), whereas the lowest concentration was observed at MW-21 and MW-22 (depth) and MW-23 (surface).
Cobalt	Concentrations ranged between 3-5 mg/kg with a mean of 4.0 with detectable concentrations noted at all locations. The highest and lowest concentrations were observed at surface and depth at MW-22, respectively.
Cadmium	All reported concentrations were less than the method detection limit (0.1 mg/kg).
Lead	Concentrations ranged between 4-33 mg/kg with a mean of 12.7 mg/kg and detectable concentrations noted at all locations. The highest and lowest concentrations were observed at MW-21 (surface) and MW-22 (depth), respectively.
Zinc	Concentrations ranged between 18-84 mg/kg with a mean of 36.2 mg/kg. The highest and lowest concentrations were observed at MW-21 (surface) and MW-22 (depth), respectively.
Chromium	Concentrations ranged between 16-32 mg/kg with a mean of 20.8 mg/kg. The highest concentration was observed at MW-21 (surface), whereas the lowest concentration was observed at MW-22 (depth) and MW-23 (surface).
Arsenic	Concentrations ranged between 1-6 mg/kg with trace concentrations between 1-2 mg/kg detected at the majority of sample locations. The most elevated concentration was noted at MW-23 (depth).
Mercury	All reported concentrations were less than the method detection limit (0.05 mg/kg).
PCBs	All reported concentrations were less than the method detection limits (0.01-0.05 mg/kg).
TPH	All reported concentrations were less than the method detection limit (0.05 mg/kg) with the exception of slightly elevated Fraction F3 concentrations reported at MW-21 (31 mg/kg - depth).

6.7 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results and evaluation of analytical data for the 2011 LS NHWLF samples are presented in Tables XXXIV and XXXV. Groundwater samples collected as part of the QA/QC program are presented in Appendix C at the end of the report.

Table XXXIV: Groundwater Chemical Analysis Results – LS NHWLF

Sample Name	Location	As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Hg [ug/L]	Ni [mg/L]	Zn [mg/L]	PCBs [mg/L]	TPH [mg/L]
C4 11-21W	MW-21	0.005	0.0003	0.081	0.0070	0.29	0.044	0.065 ⁽¹⁾	0.10	0.62	<0.000054	<2
C4 11-22W	MW-22	0.006	0.0006	0.056	0.014	0.087	0.032	0.18 ⁽¹⁾	0.051	0.27	<0.000050	<2
C4 11-23W	MW-23	0.002	<0.0002	0.026	0.0014	0.028	0.0049	0.010 ⁽¹⁾	0.022	0.25	<0.000050	<2

(1): Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Table XXXV: Evaluation of 2011 Groundwater Analytical Data – LS NHWLF

Parameter	2011
Copper	Concentrations ranged between 0.028-0.29 mg/L, with the most elevated concentrations noted at MW-21 and approximately one order of magnitude higher than the lowest observed concentration at MW-23.
Nickel	Concentrations ranged between 0.022-0.10 mg/L, with the highest and lowest concentrations noted at MW-21 and MW-23, respectively.
Cobalt	Concentrations ranged between 0.0014-0.014 mg/L, with the highest concentration noted at MW-22, one order of magnitude higher than the lowest concentration noted at MW-23.
Cadmium	Concentrations ranged between <0.0002-0.0006 mg/L. Detectable concentrations were noted at MW-21 (0.0003 mg/L) and MW-22 (0.0006 mg/L) only.
Lead	Concentrations ranged between 0.0049-0.044 mg/L. The highest concentrations were noted at MW-21 and MW-22, approximately 6-9 times higher than the concentration at MW-23.
Zinc	Concentrations ranged between 0.25-0.62 mg/L. The highest concentration was noted at MW-21, approximately 2.3-2.5 times higher than the other two well locations.
Chromium	Concentrations ranged between 0.026-0.081 mg/L. The highest concentrations were noted at MW-21 (0.81 mg/L) and MW-22 (0.56 mg/L), approximately 2-3 times higher than the concentration at MW-23.
Arsenic	Concentrations ranged between 0.002-0.006 mg/L. The highest concentrations were noted at MW-21 (0.005 mg/L) and MW-22 (0.006 mg/L).
Mercury	Concentrations ranged between 0.00001-0.00018 mg/L, with detectable concentrations observed at all locations. Elevated concentrations were noted at MW-22, approximately 3-18 times higher than concentrations at the other two well locations.
PCBs	All reported concentrations were less than the method detection limits (0.00005-0.000054 mg/L).
TPH	All reported concentrations were less than the method detection limit (2 mg/kg).

6.8 MONITORING WELL SAMPLING/INSPECTION LOGS

The monitoring well sampling and inspection logs for MW-21, MW-22 and MW-23 are presented in this section.

2011 Monitoring Well Sampling Log (MW-21)

Site name:		CAM-4				
Date of sampling event:		19-Aug-11				
Names of samplers:		Andrew Passalis				
Monitoring well ID:		MW-21				
Facility:		LS NHWLF				
Known Data						
Depth of installation* (m):		3.57				
Length of screened section (m):		2.03				
Depth to top of screen* (m):		0.58				
Measured Data						
Condition of well:		Good		Procedure/Equipment:		Interface Meter
Procedure/Equipment:		Measuring Tape		Depth to water surface (m):		2.58
Well height above ground (m):		0.56		Depth to bottom (m):		2.90
Diameter of well (m):		0.05		Free product thickness (mm):		-
Calculations						
Depth of water (m):		0.32		Notes		
Well volume of water (L):		0.63				
Static water level* (m):		2.02				
Length of screen collecting water (m):		0.32				
Development/Purging Information						
Equipment:		Dedicated waterra tubing and foot valve				
Development/Purging Information						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	0.6	4.8	11.2	238	132	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:		19-Aug-11		Date and Time Collected:		19-Aug-11
Sample Number - Water:		C411-21W		Sample Number - Soil:		C411-21WA
		Insufficient sample volume				C411-21WB + inter QA
						C411-BD4 (21WB)
Sample Containers:		2x500mL, 1x250mL plastic		Sample Containers:		3x125mL glass
						8x125mL glass
						3x125mL glass
Procedure/Equipment:		Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:		Steel & Plastic Trowels
Water Description:		C&C, N/O		Soil Description:		Brown sand, fine-med. gr., some gravel, dry
Sampling Equipment Decontamination (Y/N):		N, dedicated		Sampling Equipment Decontamination (Y/N):		Y
Number Washes:		0		Number Washes:		1
Number Rinses:		0		Number Rinses:		1

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-22)

Site name:		CAM-4				
Date of sampling event:		19-Aug-11				
Names of samplers:		Andrew Passalis				
Monitoring well ID:		MW-22				
Facility:		LS NHWLF				
Known Data						
Depth of installation* (m):		3.62				
Length of screened section (m):		2.05				
Depth to top of screen* (m):		0.50				
Measured Data						
Condition of well:		Good		Procedure/Equipment:		Interface Meter
Procedure/Equipment:		Measuring Tape		Depth to water surface (m):		2.20
Well height above ground (m):		0.49		Depth to bottom (m):		2.55
Diameter of well (m):		0.05		Free product thickness (mm):		-
Calculations						
Depth of water (m):		0.35		Notes		
Well volume of water (L):		0.69				
Static water level* (m):		1.71				
Length of screen collecting water (m):		0.35				
Development/Purging Information						
Equipment:		Dedicated waterra tubing and foot valve				
Development/Purging Information						
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	0.7	2.8	10.6	154	159	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:		19-Aug-11		Date and Time Collected:		19-Aug-11
Sample Number - Water:		C411-22W		Sample Number - Soil:		C411-22WA
		Insufficient sample volume				C411-22WB
Sample Containers:		2x500mL, 1x250mL plastic		Sample Containers:		3x125mL glass
						3x125mL glass
Procedure/Equipment:		Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:		Steel & Plastic Trowels
Water Description:		C&C, N/O		Soil Description:		Light brown sand, with cobbles and gravel, dry
Sampling Equipment Decontamination (Y/N):		N, dedicated		Sampling Equipment Decontamination (Y/N):		Y
Number Washes:		0		Number Washes:		1
Number Rinses:		0		Number Rinses:		1

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2009 Monitoring Well Sampling Log (MW-23)

Site name:	CAM-4					
Date of sampling event:	19-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-23					
Facility:	LS NHWLF					
Known Data						
Depth of installation* (m):	3.34					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	0.78					
Measured Data						
Condition of well:	Good		Procedure/Equipment:	Interface Meter		
Procedure/Equipment:	Measuring Tape		Depth to water surface (m):	1.79		
Well height above ground (m):	0.16		Depth to bottom (m):	2.82		
Diameter of well (m):	0.05		Free product thickness (mm):	-		
Calculations						
Depth of water (m):	1.03		Evidence of sludge:	-		
Well volume of water (L):	2.01		Evidence of freezing/siltation:	-		
Static water level* (m):	1.63					
Length of screen collecting water (m):	1.03					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	2.5	2.5	8.0	729	16.8	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	19-Aug-11		Date and Time Collected:	19-Aug-11		
Sample Number - Water:	C411-23W		Sample Number - Soil:	C411-23WA		
				C411-23WB		
Sample Containers:	3x500mL, 1x250mL plastic		Sample Containers:	3x125mL glass		
				3x125mL glass		
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:	Steel & Plastic Trowels		
Water Description:	C&C, N/O		Soil Description:	Brown sand, med.gr., some gravel, damp		
Sampling Equipment Decontamination (Y/N):	N, dedicated		Sampling Equipment Decontamination (Y/N):	Y		
Number Washes:	0		Number Washes:	1		
Number Rinses:	0		Number Rinses:	1		

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

7 LOWER SITE LANDFILL

7.1 BACKGROUND AND MONITORING PROGRAM

The Lower Site Landfill is located approximately 1.4 km west of the west end of the airstrip adjacent to the LS NHWLF. The Lower Site Landfill currently consists of three lobes, including: a large central main lobe encompassing a footprint of approximately 10,000 m²; and 2 smaller regrade lobes situated to the south and east encompassing footprints of approximately 400 m² and 2,000 m², respectively. The final cover of the main lobe extends approximately 2 to 6 m above the surrounding grade, whereas the final cover of the south and east lobes extend only approximately 0.75 to 1.0 m above the surrounding grade.

Based on existing information regarding this landfill as a source of contamination, its potential migration pathways and receptors, the landfill was classified as a moderate potential environmental risk. The remediation consisted in installing a leachate containment system on the main lobe and placing additional granular fill on the south and east lobes. The containment system design on the main lobe consisted in the installation of a double synthetic liner system anchored in the permafrost around the toe of the landfill and regraded with sufficient granular fill at surface to cause aggradation of permafrost through the landfill contents. Full excavation of a fourth lobe (north lobe) was also completed at the time of the site cleanup.

Four (4) groundwater monitoring wells are installed at the landfill perimeter, and 4 thermistors are installed within the landfill footprint to monitor freeze-back conditions.

The long-term monitoring plan consists of visual monitoring, collecting of soil and groundwater samples and monitoring subsurface ground temperatures. The 2011 monitoring of this landfill includes a visual inspection to verify for evidence of settlement or erosion, the collection of soil and groundwater samples to monitor for the presence of leachate and collection of ground temperature data from the thermistors. The locations of groundwater monitoring wells, soil samples and thermistor installations, are identified in Figure CAM-4.6.

Soil at all stations was sampled as specified. Groundwater from each of the monitoring wells was sampled for all parameters as per the ToR.

7.2 VISUAL INSPECTION REPORT

The visual inspection of the Lower Site Landfill was conducted on August 17-20, 2011. The Visual Inspection Checklist/Report has been completed as per the ToR and is included as XXXVI of this report.

Settlement

Indications of localized settlement were noted at several areas on the surface and side slopes of the Main Lobe (Features A and B) and East Lobe (Features C, D and E). Most features on the Main Lobe consisted of relatively small linear to oval-shaped depressions that extended along the crest, side slopes or in the case of Feature B, along the inside toe of the mid-slope bench at the south end of the lobe. Minor washing of finer-grained soils was also noted with Feature A depressions. These settlement features appear to be consistent with observations made during the previous 2010 assessment.

Several areas of minor settlement were also noted on the surface and sides of the East Lobe regrade, including linear and oval-shaped depressions in the north, central and southeast cover

areas, many of which were also noted during on the previous 2010 assessment. A small number of new oval depressions were noted on the central and southeast areas of the lobe during the 2011 assessment. Most linear features appeared to be associated with areas of minor erosion that extended perpendicular to the slope grade. An area of settlement was also noted within the bouldery fill materials placed along south boundary of the lobe (Feature D). In addition, minor surface erosion was also noted along select settlement features, most notably Feature E located on the southeast area of the lobe where fines have been deposited along the toe of slope. These noted settlement features have an acceptable severity rating.

Erosion

Three general areas of surface erosion were noted at the time of the 2011 assessment, including: several parallel features extending across the southeast corner of the East Lobe (Feature E); a single feature located on the northeast corner of the East Lobe (Feature F); and a single feature located on the north side slope of the Main Lobe (Feature G). As noted above, Feature E was associated with numerous linear depressions extending across the downgradient cover area with additional erosion observed along the unconsolidated downgradient margin of the regrade. This feature appears consistent with findings from the 2011 assessment whereas Features F and G were new observations. All features appear to be self-armouring and have an acceptable severity rating.

Frost Action

No indications of frost action were noted.

Evidence of Burrowing Animals

No indications of burrowing animals were noted.

Re-establishment of Vegetation

No evidence of vegetation was noted on the landfill.

Staining

Evidence of staining was noted at two locations, including one localized area on the southwest toe of the Main Lobe (Feature H) where rust-coloured staining and non-hydrocarbon (bacterial) sheen was observed in the immediate area of seepage along the toe. Three localized areas of white staining (Feature I) were located along the northeast side slope where seepage and wetted areas had been previously reported (2010).

Seepage Points

Evidence of minor seepage was noted at a single location along the southwest toe of the Main Lobe (Feature H). As noted above, evidence of rust-coloured staining and bacterial sheen were noted within the immediate area of seepage along the toe. No other areas of active seepage were noted at the landfill.

The feature along the southwest toe of the landfill appears consistent with 2010 findings and has an acceptable severity rating.

Debris

One piece of exposed metal debris was noted on the southwest cover of the East Lobe (Feature J). The debris consisted of a heavy equipment track cleat that was only partially exposed in the cover material. The depth and extent of near surface debris is unknown. No other indications of debris were noted at the landfill.

Presence/Condition of Monitoring Instruments

All monitoring well and thermistor installations were found to be in good condition at the landfill.

Other Features of Note

Numerous tension cracks extending up to 15 m long were noted along the southwest toe of the Main Lobe (Feature K). The cracks were situated in close proximity to the toe and an active drainage channel that extends along the southwest and west margins of the lobe. The crack appears to be attributed to the movement of finer grained cover materials through the boulder fill placed along the toe of the slope. The number and magnitude of cracks appears to have increased from the previous 2010 assessment.

Armoured drainage channels constructed along the northeast and south sides of the Main Lobe appear to be stable and controlling surface runoff around landfill as designed.

Discussion

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

Table XXXVI: 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: CAM-4 PELLY BAY
LANDFILL DESIGNATION: LOWER SITE LANDFILL
DATE OF INSPECTION: AUGUST 20-22, 2011
DATE OF PREVIOUS INSPECTION: AUGUST 30, 2009
INSPECTED BY: A. PASSALIS
REPORT PREPARED BY: A. PASSALIS
The inspector/reporter represents to the best of his/her knowledge that 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.

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT

LANDFILL VISUAL INSPECTION

Site Name: CAM-4 - Pelly Bay
 Landfill: Lower Site Landfill
 Designation: Leachate Containment
 Date Inspected: August 20-22, 2010
 Inspected by: Andrew Passalis, P.Eng.
 Sila Remediation Inc.

Signature:



LOWER SITE LANDFILL

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE A See Figure CAM-4.6 (east and West sides of Main Lobe)	0.2 - 2 m	0.2 - 0.5 m	5 - 15 cm	Occasional (<1%)	Minor depressions	LSLF-32, 33, 35, 52	Acceptable	Linear settlement features extending along crest and sides. Minor washing of fines noted at eastern location.
		FEATURE B See Figure CAM-4.6 (south end of Main Lobe)	3 m	0.3 - 1.5 m	20 cm	Isolated	Minor depression	LSLF-16	Acceptable	Settlement features on inside toe of mid-slope bench. Minor erosion noted.
		FEATURE C See Figure CAM-4.6 (North and central area of East Lobe) 1 NEW OBS.	1 - 15 m	0.2 - 0.5 m	5 - 15 cm	Occasional (2-3%)	Minor depressions	LSLF-64-66, 70-73	Acceptable	Linear and oval settlement features extending perpendicular to slope. Minor washing of fines noted at some locations. (1 NEW OBS.)
		FEATURE D See Figure CAM-4.6 (south side of East Lobe)	2 m	0.3 m	20+ cm	Isolated	Settlement of fines	LSLF-54, 55	Acceptable	Settlement of fines between boulder fill on side slope of lobe.
		FEATURE E See Figure CAM-4.6 (southeast end of East Lobe) 1 NEW OBS.	0.7 - 15 m	0.3 - 0.5 m	10 - 20 cm	Occasional (3%)	Minor settlement features	LSLF-57-61	Acceptable	Linear settlement features extending perpendicular to slope. One oval feature on north side of lobe. Minor erosion noted.
Erosion	Yes	FEATURE E See Figure CAM-4.6 (southeast end of East Lobe)	10 - 15 m	0.3 m	5-20 cm	Occasional (1%)	Minor erosion (washing of fines)	LSLF-59, 62	Acceptable	Shallow linear features extending perpendicular to slope. Deeper erosion noted along toe. Deposition of fines along south toe. Minor settlement noted along features.
		FEATURE F See Figure CAM-4.6 (north end of Main Lobe)	13 m	0.2 - 0.6 m	5 - 15 cm	Isolated	Minor erosion	LSLF-67, 68	Acceptable	Shallow erosion, washing of fines.
		FEATURE G See Figure CAM-4.6 (southeast end of East Lobe)	5-15 m	0.15-1.5 m	5-15 cm	Isolated	Minor erosion	LSLF-46	Acceptable	Extending across mid-slope.
Frost Action	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Animal Burrows	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Staining	Yes	FEATURE H See Figure CAM-4.6 (southwest toe of Main Lobe)	9 m	1 m	N/A	Isolated (<1%)	Rust coloured staining	LSLF-18-21	Acceptable	Rust coloured staining and bacterial sheen observed in drainage path along southwest toe. Associated with minor seepage points at toe of slope.
		FEATURE I See Figure CAM-4.6 (northwest slope of Main Lobe)	5 - 6 m	3 - 4 m	N/A	Occasional (<1%)	White staining	LSLF-38, 39, 42	Acceptable	White staining/precipitate on side slope at former seepage areas.
Vegetation Stress	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Seepage	Yes	FEATURE H See Figure CAM-4.6 (southwest toe of Main Lobe)	N/A	0.1 - 0.2 m	N/A	Isolated (<<1%)	Minor seepage	LSLF-18-21	Acceptable	Minor seepage point at toe of slope. Rust coloured staining and bacterial sheen noted in vicinity of 3 seepage points.
Debris Exposed	Yes	FEATURE J See Figure CAM-4.6 (East Lobe)	0.4 m	0.15 m	Unknown	Isolated (<<1%)	Heavy equipment track cleat	LSLF-74, 75	Acceptable	Partially exposed metal debris in regrade cover.
Presence/Condition of Monitoring Instruments	Yes	See Figure CAM-4.6 and Photographic Record	N/A	N/A	N/A	None	MW-17, 18, 19, 20 VT-9, 10, 11, 12	LSLF- 17W, 18W, 19W, 20W LSLF-4, 3, 2, 1	N/A	All monitoring wells and thermistors in good condition.
Other Features of Note:	Yes	FEATURE K See Figure CAM-4.6 (southwest toe of Main Lobe) 1 NEW OBS.	4 - 15 m	0.3 - 10 cm	Unknown	Occasional	Tension cracks	LSLF-22-24, 27, 28	Acceptable	Cracks extending along toe area with visible slumping between boulders into downgradient drainage feature.
		South and northeast sides of landfill	45 m 110 m	4 - 6 m	0.5 m	N/A	Engineered drainage channels	LSLF-9, 10, 14, 17, 49-51	N/A	Armoured drainage channels appear to be stable and controlling surface runoff around landfill as designed.
Additional Photos	Yes	See Figure CAM-4.4 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	Not Observable	General photos for documentation. No features of note.
Overall Landfill Performance:		Acceptable								

7.3 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for Lower Site Landfill has been completed as per the ToR and is included as Table XXXVII hereafter.

Table XXXVII: Preliminary Stability Assessment – Lower Site Landfill

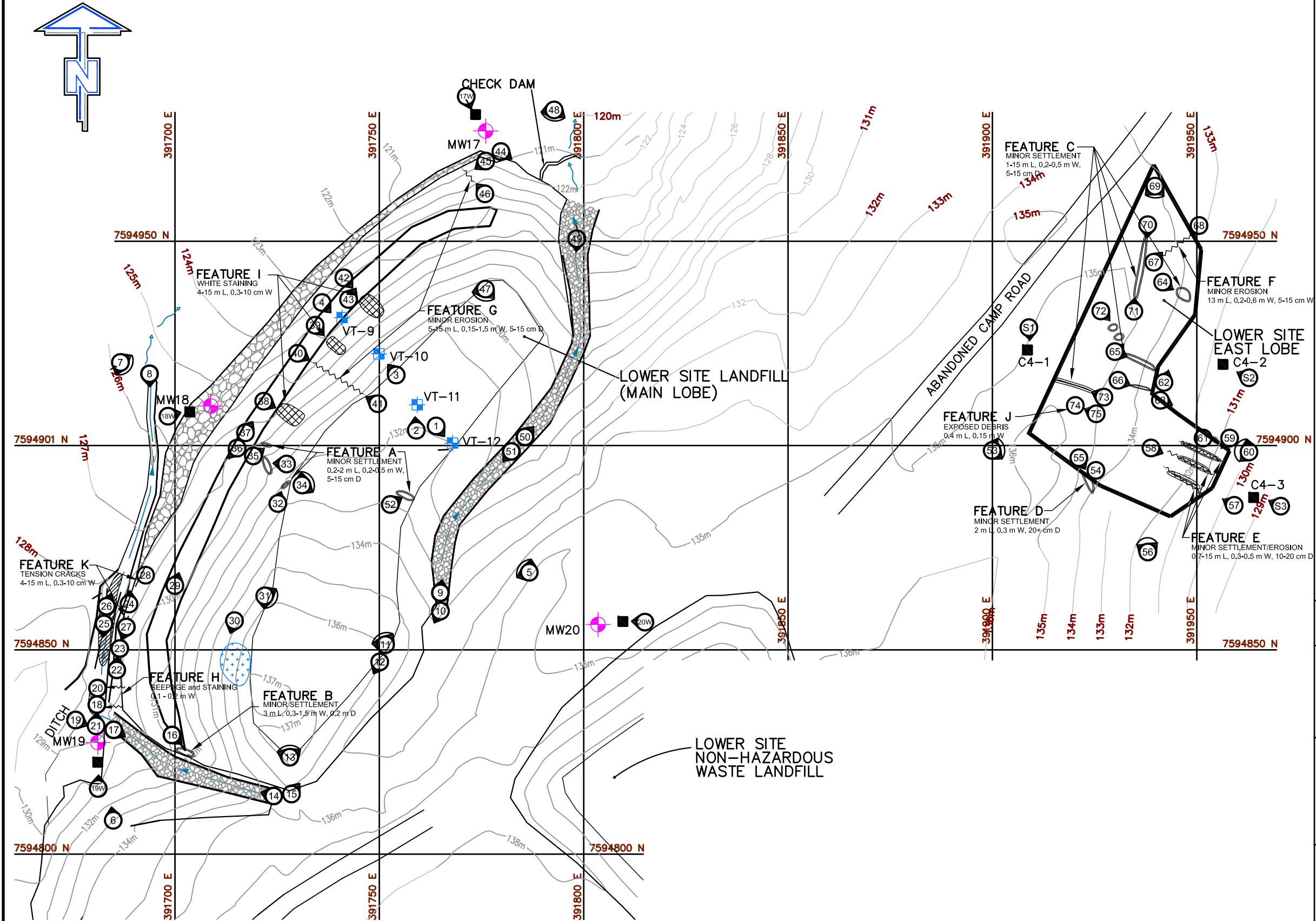
Feature	Severity Rating	Extent
Settlement	Acceptable	Occasional
Erosion	Acceptable	Occasional
Frost Action	Not observed	None
Staining	Acceptable	Isolated
Vegetation Stress	Not observed	None
Seepage/Ponded Water	Acceptable	Isolated
Debris Exposure	Acceptable	Isolated
Overall Landfill Performance	Acceptable	

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

7.4 LOCATION PLAN

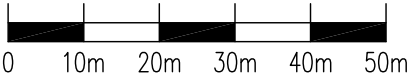
The Location Plan for the Lower Site Landfill has been completed as per the ToR and is presented in Figure CAM-4.6.

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LEGEND

- REVEGETATION
- SOIL SAMPLE LOCATION
- MONITORING WELL LOCATION
- VERTICAL THERMISTOR LOCATION
- PHOTOGRAPH LOCATION
- SETTLEMENT (NTS)
- EROSION (NTS)
- STAINING/SEEPAGE (NTS)
- TENSION CRACK (NTS)



A	FINAL	12-02-15	P.L.	A.P.	P.G.
NO.	VERSION	DATE	PAR	VERIF.	APPR.



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Défence Construction Canada

FINAL REPORT
COLLECTION OF LANDFILL MONITORING DATA
CAM-4, KUGAARUK, NUNAVUT
LOWER SITE WASTE LANDFILL

SITE REMEDIATION SOLUTIONS

Biogenie, a division of EnGlobe Corp.
4495 Wilfrid-Hamel blvd, Suite 200
Quebec, (Quebec) CANADA G1P 2J7
Phone: (418) 653-4422 Fax: (418) 653-3583



MEASUREMENT UNIT Meter	SCALE: 1 : 1,000	DATE (month-year): FEBRUARY 2012
DRAWN BY: P. LÉGARÉ	VERIFIED BY: A. PASSALIS	APPROVED BY: P. GÉLINAS
PROJECT NO: CD9229_003_160	DRAWING NO: CD9229_003_160-CAM-4_6	PAGE PL

FIGURE CAM-4.6

7.5 PHOTOGRAPHIC RECORDS

The Photographic Record for the Lower Site Landfill has been completed as per the ToR and is included as Table XXXVIII hereafter. The Photographic Record contains an index and “thumbnail” photographs only. Full sized photographs are contained in the Addendum DVD-ROM.

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
1		C411_4777	17/08/2011	391764	7594905	View looking SE at VT-12
2		C411_4778	17/08/2011	391759	7594904	View looking N at VT-11
3		C411_4779	17/08/2011	391754	7594917	View looking NNW at VT-10. VT-9 visible in background
4		C411_4780	17/08/2011	391736	7594935	View looking SSE at VT-9. VT-10 visible in background
5		C411_4836	19/08/2011	391787	7594869	Panoramic view looking SW to N from MW-20 area upgradient of landfill
6		C411_4848	19/08/2011	391685	7594808	View looking N at downgradient area at southwest corner of landfill. MW-19 in background
7		C411_4853	19/08/2011	391687	7594920	Panoramic view looking ENE to SSW from drainage feature on west side of landfill
8		C411_4854	19/08/2011	391694	7594917	View looking S along drainage channel extending from southwest side of landfill
9		C411_5003	20/08/2011	391765	7594864	View looking N from top of engineered drainage channel east of landfill
10		C411_5004	20/08/2011	391765	7594861	View looking SSW along east toe of landfill
11		C411_5005	20/08/2011	391751	7594851	Panoramic view looking WNW to NE across north end of landfill cover
12		C411_5006	20/08/2011	391751	7594848	View looking SW along southeast crest of landfill
13		C411_5007	20/08/2011	391728	7594824	Panoramic view looking NW to NE across surface from south end of landfill
14		C411_5008	20/08/2011	391725	7594814	View looking WNW down engineered drainage feature on south end of landfill

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill (Continued)

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
15		C411_5009	20/08/2011	391728	7594814	View looking NE along southeast toe from south end of landfill
16		C411_5010	20/08/2011	391700	7594829	View looking NNW at minor depression and erosion on inside toe of bench (3m L, 0.3-1.5m W, 15cm D) - FEATURE B
17		C411_5012	20/08/2011	391685	7594831	View looking SE from bottom of engineered drainage channel on southwest corner of landfill
18		C411_5013	20/08/2011	391681	7594836	Rust-coloured staining and slight (bacterial) sheen on ponded water at toe - FEATURE H
19		C411_5014	20/08/2011	391676	7594833	View looking SE at ponded area at base of drainage channel on southwest corner of landfill. MW-19 on right.
20		C411_5015	20/08/2011	391681	7594840	Rust-coloured staining and slight (bacterial) sheen at point of seepage along toe - FEATURE H
21		C411_5016	20/08/2011	391681	7594832	View looking N at ponded and stained area along west toe of landfill - FEATURE H
22		C411_5017	20/08/2011	391686	7594845	View looking N at tension crack extending parallel to west toe (15m L, up to 10cm W) - FEATURE K
23		C411_5018	20/08/2011	391687	7594850	Tension crack extending parallel to toe on west slope (4m L, 3-10mm W) - FEATURE K
24		C411_5020	20/08/2011	391689	7594861	View looking N at tension crack and slumped areas extending along toe of west slope (15m L, 1-3cm W, up to 20cm D) - FEATURE K
25		C411_5021	20/08/2011	391683	7594857	View looking S at ponded and stained area along west toe of landfill. MW-19 visible in background - FEATURE H
26		C411_5022	20/08/2011	391683	7594859	View looking N at ponded area along west toe of landfill
27		C411_5023	20/08/2011	391688	7594856	View looking S at tension crack and slumped areas extending along toe of west slope (15m L, up to 10cm W) - FEATURE K
28		C411_5025	20/08/2011	391693	7594868	Tension crack extending parallel to slope 6m above toe (5m L, 5-10mm W) - FEATURE K

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill (Continued)

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
29		C411_5026	20/08/2011	391700	7594866	View looking NNE along lower bench on southwest side of landfill
30		C411_5027	20/08/2011	391715	7594857	View looking S at re-vegetation on southwest corner of landfill
31		C411_5028	20/08/2011	391723	7594863	Panoramic view looking NE to S across surface from southwest crest of landfill
32		C411_5029	20/08/2011	391726	7594886	View looking NNE at minor depression on west crest of landfill (0.4m L, 0.2m W, 5-7cm D) - FEATURE A
33		C411_5030	20/08/2011	391727	7594895	View looking NW at minor depression on west side slope (2m L, 0.1m W, 5cm D) - FEATURE A
34		C411_5031	20/08/2011	391730	7594891	Panoramic view looking N to SE across north end and northwest side slope from west crest of landfill. Note VT-9, 10, 11 and 12 visible left to right in background
35		C411_5032	20/08/2011	391719	7594897	View looking NE at minor depression on west side slope above bench (1m L, 0.5m W, 5cm D) - FEATURE A
36		C411_5033	20/08/2011	391716	7594900	View looking SW along lower bench on west side of landfill
37		C411_5034	20/08/2011	391717	7594901	View looking NE along lower bench on west side of landfill. VT-9 and VT-10 visible in center and right
38		C411_5035	20/08/2011	391722	7594911	View looking SE at former seepage area on northwest side slope of landfill - white staining (6m L, 4m W) - FEATURE I
39		C411_5036	20/08/2011	391735	7594930	View looking SE at former seepage area on northwest side slope of landfill (4m L, 3m W) - FEATUE I
40		C411_5037	20/08/2011	391731	7594922	View looking SE at minor erosion on northwest side slope of landfill (5m L, 0.2-1.5m W, 5-15cm D) - FEATURE F
41		C411_5038	20/08/2011	391749	7594911	View looking NW at minor erosion on northwest side slope of landfill (5m L, 0.2-1.5m W, 5-15cm D) - FEATURE E
42		C411_5039	20/08/2011	391741	7594941	View looking SE at former seepage area on northwest side slope of landfill (6m L, 5m W) - FEATUE I

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill (Continued)

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Main Lobe						
43		C411_5041	20/08/2011	391743	7594936	View looking NE along mid-slope bench on northwest side of landfill
44		C411_5043	20/08/2011	391780	7594972	View looking SE along north toe and side slope of landfill
45		C411_5044	20/08/2011	391778	7594971	View looking SW along north toe and side slope of landfill
46		C411_5045	20/08/2011	391776	7594961	View looking W at minor erosion and depression on north side of landfill (5m L, 0.15m W, 5cm D) - FEATURE F
47		C411_5046	20/08/2011	391776	7594939	Panoramic view looking SW to WSW across surface from north crest of landfill
48		C411_5047	20/08/2011	391793	7594982	Panoramic view looking SE to WSW at north end of landfill. MW-17 visible on right.
49		C411_5048	20/08/2011	391799	7594950	View looking S along engineered drainage channel on northeast corner of landfill
50		C411_5050	20/08/2011	391785	7594901	View looking NE along engineered drainage channel extending along northeast side of landfill
51		C411_5051	20/08/2011	391784	7594900	View looking SW along engineered drainage channel extending along northeast side of landfill
52		C411_5052	20/08/2011	391753	7594886	View looking NE at minor depression located on east crest of landfill (2m L, 1m W, 15cm D) - FEATURE A
East Lobe						
53		C411_4861	19/08/2011	391900	7594899	Panoramic view looking N to SE across surface from southwest corner of lobe
54		C411_4862	19/08/2011	391924	7594893	Settlement of fines along southwest toe of lobe - FEATURE D
55		C411_4863	19/08/2011	391921	7594897	View looking SE at settlement area along southwest toe of lobe - FEATURE D
56		C411_4864	19/08/2011	391938	7594874	Panoramic view looking NW to NE from southeast side of lobe

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill (Continued)

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
57		C411_4865	19/08/2011	391960	7594885	View looking NW at erosion and settlement features on southeast side of lobe (10-15m L, 0.3m W, 10-20cm D) - FEATURE E
58		C411_4866	19/08/2011	391939	7594899	View looking SE at linear depressions extending along southeast extension of lobe (10-15m L, 0.3m W, 10-20cm D) - FEATURE E
59		C411_4867	19/08/2011	391958	7594902	View looking SW at erosion and settlement features on southeast side of lobe - FEATURE E
60		C411_4868	19/08/2011	391963	7594898	Panoramic view looking SSW to NNW from east of landfill. Note linear depressions on southeast side slope
61		C411_4869	19/08/2011	391952	7594902	View looking of localized settlement on southeast margin of landfill (0.7m L, 0.5m W, 20cm D) - FEATURE E
62		C411_4870	19/08/2011	391942	7594915	View looking NE along east side of lobe
63		C411_4871	19/08/2011	391941	7594913	View looking SE along north side of south extension
64		C411_4872	19/08/2011	391942	7594940	View looking ENE at oval depression on north side of lobe - FEATURE C
65		C411_4873	19/08/2011	391930	7594923	View looking NE at linear depression on north side slope of lobe - FEATURE C
66		C411_4874	19/08/2011	391931	7594916	View looking SE at depression on southeast slope (3m L, 0.15m W, 15-20cm D) - FEATURE C
67		C411_4875	19/08/2011	391940	7594945	View looking NE at erosion / depression on north side of lobe (13m L, 0.2-0.6m W, 5-15cm D) - FEATURE G
68		C411_4876	19/08/2011	391950	7594953	View looking SW at erosion / depression on north side of lobe (13m L, 0.2-0.6m W, 5-15cm D) - FEATURE G
69		C411_4877	19/08/2011	391940	7594964	Panoramic view looking SE to SW from north corner of lobe
70		C411_4878	19/08/2011	391938	7594954	View looking S at linear depression extending across north end of lobe (15m L, 0.3m W, 10-15cm D) - FEATURE C

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill (Continued)

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
71		C411_4879	19/08/2011	391935	7594933	View looking N at linear depression extending across north end of lobe (15m L, 0.3m W, 10-15cm D) - FEATURE C
72		C411_4880	19/08/2011	391927	7594933	View looking SE at pot hole depressions on central cover area of lobe (0.6-1m L, 0.3-0.5m W, 10-15cm D) - FEATURE C
73		C411_4884	19/08/2011	391927	7594912	View looking NW at linear depression on southwest side of lobe (12m L, 0.4m W, 10cm D) - FEATURE C
74		C411_4885	19/08/2011	391922	7594909	Partially exposed heavy equipment track on southwest cover (0.4m L, 0.15m W) - FEATURE J
75		C411_4886	19/08/2011	391925	7594908	View looking NW at metal debris exposed on southwest area of cover - FEATURE J
Soil Sampling - Main Lobe						
MW-17		C411_4855	19/08/2011	391773.5	7594980.7	Sampling location C4-17W located downgradient of Lower Site Landfill
17W		C411_4856	19/08/2011	391771.2	7594985.1	View looking SSE at C4-17W soil sample location
MW-18		C411_4851	19/08/2011	391703.8	7594908	Sampling location C4-18W located downgradient of Lower Site Landfill
18W		C411_4852	19/08/2011	391699.1	7594907	View looking SE at C4-18W soil sample location
MW-19		C411_4849	19/08/2011	391681.2	7594822.5	Sampling location C4-19W located downgradient of Lower Site Landfill
19W		C411_4850	19/08/2011	391681.3	7594816.6	View looking N at C4-19W soil sample location
MW-20		C411_4837	19/08/2011	391809.6	7594856.5	Sampling location C4-20W located upgradient of Lower Site Landfill
20W		C411_4838	19/08/2011	391814.9	7594856.6	View looking W at C4-20W soil sample location

Table XXXVIII: Landfill Visual Inspection Photo Log – Lower Site Landfill (Continued)

Photo (LSLF-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
Soil Sampling - East Lobe						
C4-1		C411_4881	19/08/2011	391963.8	7594886.9	Sampling location C4-1 located upgradient of Lower Site Landfill - East Lobe
S1		C411_4882	19/08/2011	391969.9	7594884.6	View looking S at C4-1 soil sample location
C4-2		C411_4859	19/08/2011	391955.4	7594920.1	Sampling location C4-2 located downgradient of Lower Site Landfill - East Lobe
S2		C411_4860	19/08/2011	391961.3	7594916.4	View looking NW at C4-2 soil sample location
C4-3		C411_4857	19/08/2011	391908.5	7594923.1	Sampling location C4-2 located downgradient of Lower Site Landfill - East Lobe
S3		C411_4858	19/08/2011	391909.3	7594928.3	View looking NW at C4-2 soil sample location

7.6 THERMAL MONITORING DATA

All thermistors at the Lower Site Landfill were inspected and found to be in good condition, with the exception of the datalogger at VT-10 (Serial # 108060) which would not communicate with the field computer. On-site troubleshooting indicated the datalogger batteries had likely failed during the 2010-11 monitoring period and should be replaced during the next scheduled assessment. Battery levels in remaining dataloggers (VT-09, VT-11 and VT-12) were noted to be “excellent”. Data from these thermistors was successfully retrieved and all analogues/thermocouples were observed to be functioning properly at the time of the inspection.

Internal memories were reset and clocks were synchronized using the Prolog software.

7.7 LANDFILL TEMPERATURE DATA FROM DATALOGGERS

Manual resistive and temperature data readings were collected from the thermistor strings as per the ToR. Manual readings and inspection results for each thermistor are presented on the Thermistor Annual Maintenance Reports included in this report. A complete datalogger RAW data set for the 2010-2011 period has been forwarded to DCC as per the ToR.

7.8 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results and evaluation of analytical data for the 2011 Lower Site Landfill samples are presented in Tables XXXIX and XL below. Field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Appendix C at the end of this report.

Table XXXIX: Soil Chemical Analysis Results –
Metals and PCBs – Lower Site Landfill

Sample Name	Location	Depth [cm]	As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Hg [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	PCBs [mg/kg]
C4 11- 17WA	MW-17	0-15	<1	<0.1	21	4	<5	4	<0.05	10	18	<0.010
C4 11- 17WB		40-50	1	<0.1	26	4	5	5	<0.05	13	19	<0.010
C4 11- 18WA	MW-18	0-15	2	<0.1	43	5	8	6	<0.05	21	34	<0.010
C4 11- BD5		0-15	1	0.1	19	4	6	7	<0.05	9	27	<0.010
C4 11- 18WB		40-50	2	<0.1	19	4	<5	4	<0.05	10	23	<0.010
C4 11- 19WA	MW-19	0-15	1	<0.1	20	3	6	5	<0.05	10	19	<0.010
C4 11- 19WB		40-50	1	<0.1	18	4	7	5	<0.05	10	23	<0.010
C4 11- 20WA	MW-20	0-15	3	<0.1	41	8	15	14	<0.05	21	53	<0.010
C4 11- 20WB		40-50	1	<0.1	21	5	9	9	<0.05	11	28	<0.010

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Table XL: Soil Chemical Analysis Results – PHCs and BTEX –
Lower Site Landfill

Sample Name	Sample Location	Depth Below Grade [cm]	Parameters						
			Benzene [mg/kg]	Toluene [mg/kg]	Ethylbenzene [mg/kg]	Xylenes [mg/kg]	PHC(F1) [mg/kg]	PHC(F2) [mg/kg]	PHC(F3) [mg/kg]
C4 11- 17WA	MW-17	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	22
C4 11- 17WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 18WA	MW-18	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- BD5		0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	13
C4 11 - 18WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 19WA	MW-19	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 19WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 20WA	MW-20	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- 20WB		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀, does not include BTEX fractions

PHC (F2): Petroleum hydrocarbon C_{>10} to C₁₆

PHC (F3): Petroleum hydrocarbon C_{>16} to C₃₄

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Table XLI: Evaluation of 2011 Soil Analytical Data – Lower Site Landfill

Parameter	2011
Copper	<u>Main Lobe:</u> Concentrations ranged between <5-15 mg/kg with a mean concentration of 6.9 mg/kg. The highest concentrations were observed at upgradient location MW-20 (15 mg/kg, surface and 9 mg/kg - depth), whereas non-detect levels were noted at downgradient locations MW-17 (surface) and MW-18 (depth). <u>East Lobe:</u> Concentrations ranged between <5-27 mg/kg with a mean concentration of 10.7 mg/kg. The highest concentrations were observed at upgradient location C4-1 (17 mg/kg, surface and 27 mg/kg - depth), whereas the lowest concentration was observed at downgradient locations C4-2 (surface and depth).
Nickel	<u>Main Lobe:</u> Concentrations ranged between 10-21 mg/kg with a mean concentration of 13.3 mg/kg. The most elevated concentration was observed at surface at upgradient location MW-20 (surface) and downgradient location MW18, whereas the lowest concentration was observed at downgradient locations MW-17 (surface), MW-18 (depth) and MW-19 (surface and depth). <u>East Lobe:</u> Concentrations ranged between 10-22 mg/kg with a mean concentration of 15.2 mg/kg. The highest and lowest concentrations were observed at upgradient location C4-1 (depth) and downgradient location C4-2 (surface), respectively.
Cobalt	<u>Main Lobe:</u> Concentrations ranged between 3-8 mg/kg with a mean concentration of 4.6 mg/kg. The highest concentrations were observed at upgradient location MW-20 (8 mg/kg, surface and 5 mg/kg - depth), whereas the lowest concentration was observed at downgradient location MW-19 (surface). <u>East Lobe:</u> Concentrations ranged between 5-8 mg/kg with a mean concentration of 6.7 mg/kg. The highest concentration was observed at upgradient location C4-1 (depth) and downgradient location C4-2 (surface and depth), with concentrations of 5-6 mg/kg noted at all other sample locations.
Cadmium	<u>Main Lobe:</u> All reported concentrations were less than the method detection limit (0.1 mg/kg). <u>East Lobe:</u> Trace concentrations of 0.3 mg/kg (surface) were observed at upgradient location C4-1. All other reported concentrations were less than the method detection limit.
Lead	<u>Main Lobe:</u> Concentrations ranged between 4-14 mg/kg with a mean concentration of 6.5 mg/kg. The highest concentration was observed at upgradient location MW-20 (14 mg/kg, surface and 9 mg/kg - depth), whereas the lowest concentration was observed at downgradient locations MW-17 (surface) and MW-18 (depth). <u>East Lobe:</u> Concentrations ranged between 4-77 mg/kg with a mean concentration of 25.8 mg/kg. The highest concentrations were observed at upgradient location C4-1 (77 mg/kg, surface and 53 mg/kg - depth). Concentrations at all other sample locations ranged between 4-9 mg/kg.
Zinc	<u>Main Lobe:</u> Concentrations ranged between 20-41 mg/kg with a mean concentration of 26.8 mg/kg. The highest concentrations were observed at upgradient location MW-20 (41 mg/kg – surface) and downgradient location MW-19 (33 mg/kg – surface), whereas the lowest concentration was observed at downgradient location MW-17 (surface). <u>East Lobe:</u> Concentrations ranged between 33-54 mg/kg with a mean concentration of 39.2 mg/kg. The highest concentrations were observed at upgradient location C4-1 (54 mg/kg – surface, 39 mg/kg - depth), whereas concentrations at the downgradient sample locations ranged between 33-38 mg/kg.
Chromium	<u>Main Lobe:</u> Concentrations ranged between 18-53 mg/kg with a mean of 27.1 mg/kg. The highest concentration was observed at upgradient location MW-20 (surface), whereas the lowest concentration was observed at downgradient location MW-17 (surface). <u>East Lobe:</u> Concentrations ranged between 24-280 mg/kg with a mean concentration of 79.8 mg/kg. Elevated concentrations were observed at upgradient location C4-1 (77 mg/kg, surface and 280 mg/kg - depth), whereas concentrations at the downgradient sample locations ranged between 24-34 mg/kg.

Table XLII: Evaluation of 2011 Soil Analytical Data – Lower Site Landfill (cont.)

Parameter	2011
Arsenic	<u>Main Lobe:</u> Concentrations ranged between <1-3 mg/kg with trace concentrations detected at all sample locations with the exception of downgradient location MW-17 (surface). <u>East Lobe:</u> Concentrations ranged between <1-9 mg/kg with a mean concentration of 2.6 mg/kg. The highest concentration was noted at surface at upgradient location C4-1, with the concentration at the remaining sample locations ranging between <1-2 mg/kg.
Mercury	<u>Main Lobe:</u> All reported concentrations were less than the method detection limit (0.05 mg/kg). <u>East Lobes:</u> All reported concentrations were less than the method detection limit (0.05 mg/kg).
PCBs	<u>Main and East Lobes:</u> All reported concentrations were less than the method detection limit (0.01 mg/kg).
TPH	<u>Main Lobe:</u> All reported concentrations were less than the method detection limit (12 mg/kg) with the exception of trace concentrations of Fraction F3 at downgradient location MW-17 (22 mg/kg). <u>East Lobe:</u> Concentrations ranged between <12-160 mg/kg with trace Fraction F3 concentrations detected at upgradient location C4-1 (17 mg/kg, surface and 160 mg/kg - depth) and downgradient location C4-2 (86 mg/kg, surface and 17 mg/kg - depth). All other sample locations reported concentrations less than the method detection limit.

7.9 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results and evaluation of analytical data for the 2011 Lower Site Landfill samples are presented in Tables XLIII and XLIV. Groundwater samples collected as part of the QA/QC program are presented in Appendix C at the end of this report.

Table XLIII: Groundwater Chemical Analysis Results – Lower Site Landfill

Sample Name	Location	As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Hg [ug/L]	Ni [mg/L]	Zn [mg/L]	PCBs [mg/L]	TPH [mg/L]
C4 11-17W	MW-17	0.001	<0.0002	0.007	0.0046	0.019	0.0042	0.034 ⁽¹⁾	0.0073	0.009	<0.000050	<2
C4 11-18W	MW-18	<0.001	<0.0002	0.016	0.0009	0.0067	0.0028	0.011 ⁽¹⁾	0.0047	0.025	<0.000050	<2
C4 11-19W	MW-19	0.005	0.0006	0.022	0.018	0.042	0.027	0.016 ⁽¹⁾	0.029	0.089	<0.000050	<2
C4 11-20W	MW-20	<0.001	<0.0002	0.010	0.0011	0.039	0.0054	0.017 ⁽¹⁾	0.012	0.024	<0.000050	4

(1): Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Table XLIV: Evaluation of 2011 Groundwater Analytical Data – Lower Site Landfill

Parameter	2011
Copper	Concentrations ranged between 0.0067-0.042 mg/L, with the lowest concentration noted at downgradient location MW-18 and approximately 3-6 times lower than concentrations at the upgradient and other downgradient sample locations.
Nickel	Concentrations ranged between 0.0047-0.029 mg/L, with the highest and lowest concentrations noted at downgradient locations MW-19 and MW-17, respectively.
Cobalt	Concentrations ranged between 0.0009-0.018 mg/L. The highest concentration was noted at downgradient location MW-19, approximately two orders of magnitude higher than the upgradient location MW-20 (0.0008 mg/L) and adjacent downgradient location MW-18 (0.0004 mg/kg).
Cadmium	Trace concentrations of 0.0006 mg/L were noted at downgradient location MW-19, with all other sample locations reported concentrations less than the method detection limit (0.0002 mg/L).
Lead	Concentrations ranged between 0.0028-0.027 mg/L. The highest concentration was noted at downgradient location MW-19, approximately 5-6.5 times higher than concentrations in the upgradient and other downgradient sample location.
Zinc	Concentrations ranged between 0.009-0.089 mg/L, with the highest and lowest concentrations noted at downgradient locations MW-19 and MW-17, respectively. The elevated concentration at MW-19 is approximately 3-4 times higher than the upgradient and other downgradient sample location.
Chromium	Concentrations ranged between 0.007-0.022 mg/L, with the highest and lowest concentrations noted at downgradient locations MW-19 and MW-17, respectively.
Arsenic	Concentrations ranged between <0.001-0.005 mg/L, with the highest concentration noted at downgradient location MW-19. All other sample locations reported concentrations less than or equal to the method detection limit.
Mercury	Concentrations ranged between 0.000011-0.000034 mg/L, with comparable concentrations noted at all sample locations.
PCBs	All sample locations reported concentrations were less than the method detection limit (0.00005 mg/L).
TPH	Elevated concentrations of 4 mg/L were noted at upgradient location MW-20. All other sample locations reported concentrations were less than the method detection limit (2 mg/L).

7.10 THERMISTOR ANNUAL MAINTENANCE REPORTS

The thermistor annual maintenance reports for VT-9 to VT-12 are presented in this section.

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location: Lower Site Landfill
Thermistor Number: VT09	Inclination: Vertical
Install Date: 29-Sep-06	First Date Event: 27-Aug-07 Last Date Event: 20-Aug-10
Coordinates and Elevation: N	E Elev: 125.769
Length of Cable (m): 6.2	Cable Lead Above Ground (m): 1.4 Nodal Points: 10
Datalogger Serial #: 2020165	Cable Serial Number: 1623

Code CAM-4VT09

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☒	☐
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	30-Aug-09	
Battery Levels	Main 11.34 V	Aux 13.63

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	6.637	18.8578
2	7.189	16.9630
3	11.89	6.4694
4	13.209	4.2957
5	14.893	1.9699
6	16.88	-0.4735
7	17.952	-1.6816
8	19.119	-2.8583

Bead	ohms	Temp. (°C)
9	20.24	-4.0597
10	21.20	-4.9081

Observations and Proposed Maintenance

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location: Lower Site Landfill
Thermistor Number: VT10	Inclination: Vertical
Install Date: 29-Sep-06	First Date Event: 27-Aug-07 Last Date Event: 20-Aug-10
Coordinates and Elevation: N	E Elev: 129.924
Length of Cable (m): 6.2	Cable Lead Above Ground (m): 1.2 Nodal Points: 10
Datalogger Serial #: 108060	Cable Serial Number: 1625

Code CAM-4VT10

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☐	☐ Batteries should be replaced in 2012.
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	26-Aug-07	
Battery Levels	Main _____	Aux _____

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	7.114	
2	9.649	
3	12.600	
4	13.596	
5	15.267	
6	16.767	
7	17.756	
8	18.704	

Bead	ohms	Temp. (°C)
9	20.35	
10	21.02	

Observations and Proposed Maintenance

Unable to communicate with datalogger.
Recommend replacement of batteries during next inspection period (2012).

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location Lower Site Landfill
Thermistor Number: VT11	Inclination Vertical
Install Date: 29-Sep-06	First Date Event 27-Aug-07 Last Date Event 20-Aug-10
Coordinates and Elevation N	E Elev 131.86
Length of Cable (m) 6.2	Cable Lead Above Ground (m) 1.1 Nodal Points 10
Datalogger Serial # 111070	Cable Serial Number 1621

Code CAM-4VT11

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☒	☐
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	21-Aug-10	
Battery Levels	Main 11.34 V	Aux 13.63

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	7.013	17.5269
2	10.144	9.7161
3	12.339	5.7279
4	13.257	4.2857
5	14.008	1.8117
6	16.874	-0.4939
7	18.141	-1.9026
8	19.227	-3.0037

Bead	ohms	Temp. (°C)
9	19.96	-3.7684
10	18.80	-2.6224

Observations and Proposed Maintenance

Thermal Monitoring Ground Temperature Annual Maintenance Report

Contractor Name: Sila Remediation Inc.	Inspection Date: 17-Aug-11
Prepared By: Andrew Passalis	

Thermistor Information

Site Name: CAM-4	Thermistor Location: Lower Site Landfill
Thermistor Number: VT12	Inclination: Vertical
Install Date: 29-Sep-06	First Date Event: 27-Aug-07 Last Date Event: 20-Aug-10
Coordinates and Elevation: N	E Elev: 131.966
Length of Cable (m): 6.7	Cable Lead Above Ground (m): 1.2 Nodal Points: 11
Datalogger Serial #: 2020150	Cable Serial Number: 1626

Code CAM-4VT12

Thermistor Inspection

	Good	Needs Maintenance
Casing	☒	☐
Cover	☒	☐
Data Logger	☒	☐
Cable	☒	☐
Beads	☒	☐
Battery Installation Date	21-Aug-10	
Battery Levels	Main 11.34 V	Aux 13.26

Manual Ground Temperature Readings

Bead	ohms	Temp. (°C)
1	7.134	17.1369
2	8.89	12.4627
3	11.513	7.0468
4	12.66	5.1939
5	14.066	3.0944
6	16.253	0.2241
7	17.474	-1.1617
8	18.433	-2.2735

Bead	ohms	Temp. (°C)
9	19.925	-3.6871
10	21.12	-4.8391
11	21.12	-4.8391

Observations and Proposed Maintenance

7.11 MONITORING WELL SAMPLING/INSPECTION LOGS

The monitoring well sampling and inspection logs for MW-17, MW-18, MW-19 and MW-20 are presented in this section.

2011 Monitoring Well Sampling Log (MW-17)

Site name:	CAM-4					
Date of sampling event:	19-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-17					
Facility:	Lower Site Landfill					
Known Data						
Depth of installation* (m):	3.82					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	0.83					
Measured Data						
Condition of well:	Good	Procedure/Equipment:	Interface Meter			
Procedure/Equipment:	Measuring Tape	Depth to water surface (m):	1.71			
Well height above ground (m):	0.74	Depth to bottom (m):	2.48			
Diameter of well (m):	0.05	Free product thickness (mm):	-			
Calculations						
Depth of water (m):	0.77	Evidence of sludge:	-			
Well volume of water (L):	1.51	Evidence of freezing/siltation:	-			
Static water level* (m):	0.97					
Length of screen collecting water (m):	0.77					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
31-Aug-09	1.6	3.0	7.6	415	39	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	19-Aug-11			Date and Time Collected:	19-Aug-11	
Sample Number - Water:	C411-17W			Sample Number - Soil:	C411-17WA	
					C411-17WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Dark brown sand, with gravel, trace org.	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-18)

Site name:	CAM-4					
Date of sampling event:	19-Aug-11					
Names of samplers:	Andrew Passalis					
Monitoring well ID:	MW-18					
Facility:	Lower Site Landfill					
Known Data						
Depth of installation* (m):	3.80					
Length of screened section (m):	2.03					
Depth to top of screen* (m):	0.81					
Measured Data						
Condition of well:	Good			Procedure/Equipment:	Interface Meter	
Procedure/Equipment:	Measuring Tape			Depth to water surface (m):	0.87	
Well height above ground (m):	0.58			Depth to bottom (m):	2.21	
Diameter of well (m):	0.05			Free product thickness (mm):	-	
Calculations						
Depth of water (m):	1.35			Evidence of sludge:	-	
Well volume of water (L):	2.64			Evidence of freezing/siltation:	-	
Static water level* (m):	0.29					
Length of screen collecting water (m):	0.82					
Development/Purging Information						
Equipment:	Dedicated waterra tubing and foot valve					
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	3.0	2.6	7.2	319	31	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:	19-Aug-11			Date and Time Collected:	19-Aug-11	
Sample Number - Water:	C411-18W			Sample Number - Soil:	C411-18WA +inter QA	
					C411-BD5 (18WA)	
					C411-18WB	
Sample Containers:	3x500mL, 1x25mL plastic			Sample Containers:	8x125mL glass	
					3x125mL glass	
					3x125mL glass	
Procedure/Equipment:	Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter			Procedure/Equipment:	Steel & Plastic Trowels	
Water Description:	C&C, N/O			Soil Description:	Brown sand, med.gr., some gravel, wet at 40	
Sampling Equipment Decontamination (Y/N):	N, dedicated			Sampling Equipment Decontamination (Y/N):	Y	
Number Washes:	0			Number Washes:	1	
Number Rinses:	0			Number Rinses:	1	

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-19)

Site name:		CAM-4				
Date of sampling event:		19-Aug-11				
Names of samplers:		Andrew Passalis				
Monitoring well ID:		MW-19				
Facility:		Lower Site Landfill				
Known Data						
Depth of installation* (m):		3.83				
Length of screened section (m):		2.03				
Depth to top of screen* (m):		0.84				
Measured Data						
Condition of well:		Good	Procedure/Equipment:		Interface Meter	
Procedure/Equipment:		Measuring Tape	Depth to water surface (m):		0.77	
Well height above ground (m):		0.65	Depth to bottom (m):		2.17	
Diameter of well (m):		0.05	Free product thickness (mm):		-	
Calculations						
Depth of water (m):		1.40	Evidence of sludge:		-	
Well volume of water (L):		2.75	Evidence of freezing/siltation:		Siltation	
Static water level* (m):		0.12				
Length of screen collecting water (m):		0.68				
Development/Purging Information						
Equipment:		Dedicated waterra tubing and foot valve				
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	3.0	3.2	7.7	891	>500	Brown, murky, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:		19-Aug-11		Date and Time Collected:		19-Aug-11
Sample Number - Water:		C411-19W		Sample Number - Soil:		C411-19WA
						C411-19WB
Sample Containers:		3x500mL, 1x25mL plastic		Sample Containers:		3x125mL glass
						3x125mL glass
Procedure/Equipment:		Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:		Steel & Plastic Trowels
Water Description:		C&C, N/O		Soil Description:		Brown sand, fine gr., some silt, wet at 45
Sampling Equipment Decontamination (Y/N):		N, dedicated		Sampling Equipment Decontamination (Y/N):		Y
Number Washes:		0		Number Washes:		1
Number Rinses:		0		Number Rinses:		1

*From ground surface. Unless this is stated, all measurements are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

2011 Monitoring Well Sampling Log (MW-20)

Site name:		CAM-4				
Date of sampling event:		19-Aug-11				
Names of samplers:		Andrew Passalis				
Monitoring well ID:		MW-20				
Facility:		Lower Site Landfill				
Known Data						
Depth of installation* (m):		3.43				
Length of screened section (m):		2.05				
Depth to top of screen* (m):		0.30				
Measured Data						
Condition of well:		Good	Procedure/Equipment:		Interface Meter	
Procedure/Equipment:		Measuring Tape	Depth to water surface (m):		2.71	
Well height above ground (m):		0.67	Depth to bottom (m):		3.03	
Diameter of well (m):		0.05	Free product thickness (mm):		-	
Calculations						
Depth of water (m):		0.32		Notes		
Well volume of water (L):		0.63		Evidence of sludge:		-
Static water level* (m):		2.04		Evidence of freezing/siltation:		-
Length of screen collecting water (m):		0.32				
Development/Purging Information						
Equipment:		Dedicated waterra tubing and foot valve				
Date & Time	Volume Removed (L)	Temperature (°C)	pH	Conductivity (µS/cm)	Turbidity (NTU)	Description of Water
19-Aug-11	1.1	4.9	7.7	830	94	C&C, N/O
Water Sampling				Soil Sampling		
Date & Time Collected:		19-Aug-11		Date and Time Collected:		19-Aug-11
Sample Number - Water:		C411-20W		Sample Number - Soil:		C411-20WA
						C411-20WB
Sample Containers:		3x500mL, 1x25mL plastic		Sample Containers:		3x125mL glass
						3x125mL glass
Procedure/Equipment:		Waterra tubing & foot valve Hanna HI9828 Multimeter, Hach 2100P Turbidimeter		Procedure/Equipment:		Steel & Plastic Trowels
Water Description:		C&C, N/O		Soil Description:		Light brown sand, gravel and cobbles, trace silt, dry
Sampling Equipment Decontamination (Y/N):		N, dedicated		Sampling Equipment Decontamination (Y/N):		Y
Number Washes:		0		Number Washes:		1
Number Rinses:		0		Number Rinses:		1

*From ground surface. Unless this is stated, all measurments are assumed to be from the top of the casing.

n/a=not applicable

SS=Stainless Steel

C&C = Clear & Colourless

N/O = No Odour

8 BACKGROUND MONITORING LOCATIONS

8.1 MONITORING PROGRAM

Two background monitoring locations were established at the CAM-4 Pelly Bay site to assess the potential for naturally elevated concentrations of metals. The background locations include one on the southwest sides of the former station area at the Upper Site (BMW3) and a second southwest of the Lower Site Landfill at the Lower Site (BMW4).

The 2011 monitoring plan for the background locations consists of collecting soil and groundwater samples. The locations of groundwater monitoring wells and soil samples are identified in Figure CAM-4.1 (overall site plan).

Soil and groundwater at both stations were sampled for all parameters as per the ToR.

8.2 PHOTOGRAPHIC RECORDS

The Photographic Record for Background Monitoring Locations has been completed as per the ToR and is included as Table XLV hereafter. The Photographic Record contains an index and “thumbnail” photographs only. Full-sized photographs are contained in the Addendum DVD-ROM.

Table XLV: Landfill Visual Inspection Photo Log – Upper and Lower Site Background

(BKD-)	Thumbnails	Filename	Date	Vantage Point		Caption
				Easting	Northing	
BMW-3		C411_4834	19/08/2011	388477	7594218	Sampling location C4-BMW3 located southwest of former station area
B3		C411_4835	19/08/2011	388478	7594216	View NNW at C4-BMW3 soil sample location
BMW-4		C411_4846	19/08/2011	391645	7594757	Sampling location C4-BMW4 located southwest of Lower Site Landfill
B4		C411_4847	19/08/2011	391643	7594759	View SE at C4-17W soil sample location

8.3 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results and evaluation of analytical data for the 2011 Upper and Lower Site Background Monitoring samples are presented in Tables XLVI and XLVII below.

**Table XLVI: Soil Chemical Analysis Results – Metals and PCBs –
Upper and Lower Site Background**

Sample Name	Location	Depth [cm]	As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Hg [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	PCBs [mg/kg]
C4 11- BMW3A	BMW-3	0-15	2	<0.1	41	7	10	7	<0.05	20	39	<0.010
C4 11- BMW3B		40-50	2	<0.1	28	6	7	5	<0.05	14	29	<0.010
C4 11- BMW4A	BMW-4	0-15	2	<0.1	34	4	5	4	<0.05	12	20	<0.010
C4 11- BMW4B		40-50	<1	<0.1	50	4	5	4	<0.05	24	16	<0.010

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**Table XLVII: Soil Chemical Analysis Results – PHCs and BTEX –
Upper and Lower Site Background**

Sample Name	Sample Location	Depth Below Grade [cm]	Parameters						
			Benzene [mg/kg]	Toluene [mg/kg]	Ethylbenzene [mg/kg]	Xylenes [mg/kg]	PHC(F1) [mg/kg]	PHC(F2) [mg/kg]	PHC(F3) [mg/kg]
C4 11- BMW3A	BMW-3	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- BMW3B		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- BMW4A	BMW-4	0-15	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10
C4 11- BMW4B		40-50	<0.0050	<0.020	<0.010	<0.040	<12	<10	<10

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀, does not include BTEX fractionsPHC (F2): Petroleum hydrocarbon C₉₋₁₀ to C₁₆PHC (F3): Petroleum hydrocarbon C₉₋₁₆ to C₃₄

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Table XLVIII: Evaluation of 2011 Soil Analytical Data – Upper and Lower Site Background

Parameter	2011
Metals	With the exception of chromium, most metal parameters exhibited slightly higher background concentrations at the Upper Site with marginally higher concentrations noted in the surface sample at each location. Non-detect levels of cadmium and mercury were observed at both the Upper and Lower sites.
PCBs	All reported concentrations were less than the method detection limit (0.01 mg/kg).
TPH	All reported concentrations were less than the method detection limit (12 mg/kg).

8.4 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results and evaluation of analytical data for the 2011 Upper and Lower Site Background Monitoring samples are presented in Tables XLIX and L hereafter.

Table XLIX: Groundwater Chemical Analysis Results – Upper and Lower Site Background

Sample Name	Location	As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Hg [ug/L]	Ni [mg/L]	Zn [mg/L]	PCBs [mg/L]	TPH [mg/L]
C4 11-BMW3	-	0.007	0.0005	0.042	0.024	0.062	0.020	0.018 ⁽¹⁾	0.043	0.10	<0.000050	<2
C4 11-BMW4	-	0.005	<0.0002	0.036	0.0048	0.084	0.029	0.044 ⁽¹⁾	0.038	0.57	<0.000050	<2

(1): Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly.

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Table L: Evaluation of 2011 Groundwater Analytical Data – Upper and Lower Site Background

Parameter	2011
Metals	Metal parameters arsenic, cadmium, chromium, cobalt and nickel exhibited slightly higher background concentrations at the Upper Site, whereas copper, lead, zinc and mercury concentrations were reported higher at the Lower Site.
PCBs	All reported concentrations were less than the method detection limit (0.00005 mg/L).
TPH	All reported concentrations were less than the method detection limit (2 mg/L).

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT

APPENDIX A

Range of the Report and Limitation of Responsibilities



RANGE OF THE REPORT AND LIMITATION OF RESPONSIBILITIES

A – Recipient and Use

This report (“Report”) was prepared by Biogenie, a division of EnGlobe Corp., (“Biogenie”) at the request and for the sole benefit of the Client (“Client”), and is intended to be used exclusively by the Client.

B –Site Conditions

Any description of the target site (“Site”), soil and/or groundwater included in the Report is only provided as an indication to the Client, and unless otherwise specifically mentioned in the Report such description shall not at any time and under any circumstances be used for purposes other than to gain a better understanding of the Site and to fulfil the requirements of the mandate assigned to Biogenie by the Client (“Mandate”).

All information, including but not limiting the comprehensiveness of the data, charts, descriptions, drawings, tables, analysis results, compilations, and any conclusion and recommendation included in the Report, shall arise from the direct observation of the Site during a specific period, namely the fulfilment of the Mandate, and from the interpretation of such information and data available during the same period.

The content of the Report shall not apply in any way or to any part of the Site or to any parameter, material or analysis excluded from the Mandate.

Biogenie shall not be held responsible for the presence of any substance or material of a different nature, or of a similar nature but with different concentrations, as those indicated in the Report, and this in any part or parts of the Site excluded from the Mandate.

The content of the Report, including its conclusions and recommendations, shall not apply to any period preceding or following the Mandate. The physiochemical conditions of the Site, and the type and degree of contamination identified on the Site, may vary within a given period depending on a number of factors, especially the current activities taking place on the Site and/or on lands adjacent to the Site.

A review of the Report and/or changes in the parameters, conclusions and/or recommendations may prove to be necessary in the event of a change in the Site conditions or the discovery of pertinent information subsequent to the production of the Report.

C - Legislation, Regulations, Guidelines and Policies

The interpretation of the data and observations concerning the Site, as well as the conclusions and recommendations resulting from these, shall take into account the laws, regulations, standards, policies and/or guidelines applicable to the Project and that are in effect at the time of the fulfilment of the Mandate. In the event no current law, regulation, policy, guideline or standard applies to the project, Biogenie shall take into account proven environmental and professional rules and practices when drawing up the Report.

Any change in the legislation, regulations, standards, policies and/or guidelines applicable to the project may result in the need to review the Report and/or modify its parameters, conclusions and/or recommendations.

D – Use of Report

The Report is intended for the exclusive use of the Client and shall only be used for the purpose it was meant for.

The content of the Report and its conclusions and recommendations only apply to the Site and may not, at any time and under any circumstances, apply to any land adjacent to the Site or to any other land located in the vicinity of the Site.

Any reproduction in any form whatsoever and any distribution or use of the Report, in whole or in part, by a person other than the Client, is strictly forbidden without the prior written consent of Biogenie. Biogenie makes no declaration and pledges no responsibility towards any person other than the Client with regard to the content of the Report and the conclusions and recommendations expressed therein.

Biogenie is in no way responsible for any loss, fine or penalty, or for any expense, damage or other prejudice of any type whatsoever, sustained by a person other than the Client as a result of the unauthorized use of the Report.

No provision of the Report shall be construed as or considered to be a legal opinion of Biogenie's.

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT

ANNEX 1

Maxxam and Exova QA/QC Reports and Certificates of Analysis

Your Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4

Attention: ANDREW PASSALIS

SILA REMEDIATION
4495 BL. WILFRED-HAMEL BUR 100
QUEBEC, PQ
CANADA GIP 2T7

Report Date: 2011/08/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B178307

Received: 2011/08/22, 12:20

Sample Matrix: Water
Samples Received: 25

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Mercury - Low Level (Total)	5	2011/08/25	2011/08/25	CAL SOP-00007	EPA 1631
Mercury - Low Level (Total)	1	2011/08/25	2011/08/29	CAL SOP-00007	EPA 1631
Mercury - Low Level (Total)	19	2011/08/29	2011/08/29	CAL SOP-00007	EPA 1631
Elements by ICPMS - Total	10	2011/08/25	2011/08/27	AB SOP-00043	EPA 200.8
Elements by ICPMS - Total	15	2011/08/26	2011/08/27	AB SOP-00043	EPA 200.8
Polychlorinated Biphenyls	9	2011/08/24	2011/08/25	CAL SOP-00149	EPA 3510C, EPA 8082A
Polychlorinated Biphenyls	3	2011/08/24	2011/08/26	CAL SOP-00149	EPA 3510C, EPA 8082A
Polychlorinated Biphenyls	8	2011/08/24	2011/08/27	CAL SOP-00149	EPA 3510C, EPA 8082A
Polychlorinated Biphenyls	3	2011/08/25	2011/08/26	CAL SOP-00149	EPA 3510C, EPA 8082A
Hydrocarbon by IR (Mineral oil & grease)	2	2011/08/25	2011/08/25	CAL SOP-00096	SM 5520C, F
Hydrocarbon by IR (Mineral oil & grease)	20	2011/08/25	2011/08/29	CAL SOP-00096	SM 5520C, F

* 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.

Ioana Stoica, Project Manager
Email: IStoica@maxxam.ca
Phone# (403) 291-3077

=====

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

Total cover pages: 1

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		BI2964	BI2965	BI2966	BI2967	BI2968	BI2969		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/19		
	Units	C4 11-6W	C4 11-7W	C4 11-5W	C4 11-8W	C4 11-9W	C4 11-14W	RDL	QC Batch

Misc. Organics									
Total Petroleum Hydrocarbon	mg/L	17	<2	<2	3	3	<2	2	5121969
RDL = Reportable Detection Limit									

Maxxam ID		BI2970	BI2972	BI2973	BI2974	BI2975	BI2976		
Sampling Date		2011/08/19	2011/08/18	2011/08/18	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11-15W	C4 11-11W	C4 11-12W	C4 11-21W	C4 11-22W	C4 11-23W	RDL	QC Batch

Misc. Organics									
Total Petroleum Hydrocarbon	mg/L	10	<2	<2	<2	<2	<2	2	5121969
RDL = Reportable Detection Limit									

Maxxam ID		BI2977	BI2978	BI2979	BI2980	BI2982	BI2983		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11-17W	C4 11-18W	C4 11-19W	C4 11-20W	C4 11-BMW3	C4 11-BMW4	RDL	QC Batch

Misc. Organics									
Total Petroleum Hydrocarbon	mg/L	<2	<2	<2	4	<2	<2	2	5121969
RDL = Reportable Detection Limit									

Maxxam ID		BI2984	BI2985		BI2986	BI2987		
Sampling Date		2011/08/18	2011/08/19		2011/08/19			
	Units	C4 11-BDW1	C4 11-BDW2	QC Batch	C4 11-FB	C4 11-TB	RDL	QC Batch

Misc. Organics								
Total Petroleum Hydrocarbon	mg/L	12	8	5121969	<2	<2	2	5121973
RDL = Reportable Detection Limit								

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2964		BI2965		BI2966	BI2967		
Sampling Date		2011/08/18		2011/08/18		2011/08/18	2011/08/18		
	Units	C4 11-6W	QC Batch	C4 11-7W	QC Batch	C4 11-5W	C4 11-8W	RDL	QC Batch
Polychlorinated Biphenyls									
Aroclor 1016	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	94	5117866	99	5122018	82	88		5117866
RDL = Reportable Detection Limit									

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2968		BI2969	BI2970		
Sampling Date		2011/08/18		2011/08/19	2011/08/19		
	Units	C4 11-9W	QC Batch	C4 11-14W	C4 11-15W	RDL	QC Batch
Polychlorinated Biphenyls							
Aroclor 1016	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Surrogate Recovery (%)							
NONACHLOROBIPHENYL (sur.)	%	98	5122018	80	84		5117866
RDL = Reportable Detection Limit							

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2971			BI2972	BI2973		
Sampling Date		2011/08/18			2011/08/18	2011/08/18		
	Units	C4 11-BMW1	RDL	QC Batch	C4 11-11W	C4 11-12W	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.0017	0.0017	5122018	<0.000050	<0.000050	0.000050	5117866
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	96		5122018	99	73		5117866
RDL = Reportable Detection Limit								

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2974		BI2975		BI2976	BI2977		
Sampling Date		2011/08/19		2011/08/19		2011/08/19	2011/08/19		
	Units	C4 11-21W	RDL	C4 11-22W	QC Batch	C4 11-23W	C4 11-17W	RDL	QC Batch
Polychlorinated Biphenyls									
Aroclor 1016	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.000054	0.000054	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	97		106	5122018	91	82		5117866
RDL = Reportable Detection Limit									

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2978		BI2979		BI2980		
Sampling Date		2011/08/19		2011/08/19		2011/08/19		
	Units	C4 11-18W	QC Batch	C4 11-19W	QC Batch	C4 11-20W	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.000050	5117866	<0.000050	5122018	<0.000050	0.000050	5117866
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	86	5117866	111	5122018	83		5117866
RDL = Reportable Detection Limit								

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2982	BI2983		BI2984	BI2985		
Sampling Date		2011/08/19	2011/08/19		2011/08/18	2011/08/19		
	Units	C4 11-BMW3	C4 11-BMW4	QC Batch	C4 11-BDW1	C4 11-BDW2	RDL	QC Batch

Polychlorinated Biphenyls								
Aroclor 1016	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.000050	<0.000050	5122018	<0.000050	<0.000050	0.000050	5117866
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	107	101	5122018	83	93		5117866
RDL = Reportable Detection Limit								

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		BI2986	BI2987		
Sampling Date		2011/08/19			
	Units	C4 11-FB	C4 11-TB	RDL	QC Batch
Polychlorinated Biphenyls					
Aroclor 1016	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1221	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1232	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1242	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1248	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1254	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1260	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1262	mg/L	<0.000050	<0.000050	0.000050	5117866
Aroclor 1268	mg/L	<0.000050	<0.000050	0.000050	5117866
Total Aroclors	mg/L	<0.000050	<0.000050	0.000050	5117866
Surrogate Recovery (%)					
NONACHLOROBIPHENYL (sur.)	%	90	112		5117866
RDL = Reportable Detection Limit					

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BI2950	BI2963		BI2964			BI2965		
Sampling Date		2011/08/18	2011/08/18		2011/08/18			2011/08/18		
	Units	C4 11-1W	C4 11-2W	QC Batch	C4 11-6W	RDL	QC Batch	C4 11-7W	RDL	QC Batch

Elements										
Total Arsenic (As)	mg/L	0.003	<0.001	5128857	0.005	0.001	5128865	0.004	0.001	5128857
Total Cadmium (Cd)	mg/L	0.0003	0.0002	5128857	<0.0002	0.0002	5128865	0.0004	0.0002	5128857
Total Chromium (Cr)	mg/L	0.70	0.068	5128857	0.021	0.001	5128865	0.023	0.001	5128857
Total Cobalt (Co)	mg/L	0.012	0.0024	5128857	0.0040	0.0003	5128865	0.017	0.0003	5128857
Total Copper (Cu)	mg/L	0.15	0.023	5128857	0.026	0.0002	5128865	0.045	0.0002	5128857
Total Lead (Pb)	mg/L	0.0086	0.0020	5128857	0.020	0.0002	5128865	0.056	0.0002	5128857
Total Nickel (Ni)	mg/L	0.72	0.14	5128857	0.028	0.0005	5128865	0.047	0.0005	5128857
Total Zinc (Zn)	mg/L	0.13	0.093	5128857	0.24	0.003	5128865	27 (1)	0.08	5128857
Low Level Elements										
Total Mercury (Hg)	ug/L	0.010 (2)	0.012 (2)	5123448	0.029 (2)	0.006	5123448	0.072 (2)	0.006	5123448

RDL = Reportable Detection Limit

(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

(2) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Maxxam ID		BI2966		BI2967		BI2968	BI2969	BI2970		
Sampling Date		2011/08/18		2011/08/18		2011/08/18	2011/08/19	2011/08/19		
	Units	C4 11-5W	QC Batch	C4 11-8W	QC Batch	C4 11-9W	C4 11-14W	C4 11-15W	RDL	QC Batch

Elements										
Total Arsenic (As)	mg/L	<0.001	5128857	0.002	5128865	0.006	0.002	0.002	0.001	5128865
Total Cadmium (Cd)	mg/L	<0.0002	5128857	0.0003	5128865	<0.0002	<0.0002	<0.0002	0.0002	5128865
Total Chromium (Cr)	mg/L	0.036	5128857	0.022	5128865	0.074	0.016	0.008	0.001	5128865
Total Cobalt (Co)	mg/L	0.0011	5128857	0.0042	5128865	0.0028	0.0039	0.0033	0.0003	5128865
Total Copper (Cu)	mg/L	0.011	5128857	0.0090	5128865	0.014	0.075	0.0048	0.0002	5128865
Total Lead (Pb)	mg/L	0.0042	5128857	0.0058	5128865	0.0056	0.0071	0.0019	0.0002	5128865
Total Nickel (Ni)	mg/L	0.032	5128857	0.058	5128865	0.039	0.020	0.014	0.0005	5128865
Total Zinc (Zn)	mg/L	0.082	5128857	0.047	5128865	0.020	2.5	0.11	0.003	5128865
Low Level Elements										
Total Mercury (Hg)	ug/L	0.011 (1)	5123448	<0.006 (1)	5123448	0.008 (1)	0.021 (1)	0.012 (1)	0.006	5130747

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BI2971			BI2972			BI2973		BI2974		
Sampling Date		2011/08/18			2011/08/18			2011/08/18		2011/08/19		
	Units	C4 11-BMW1	RDL	QC Batch	C4 11-11W	RDL		C4 11-12W	QC Batch	C4 11-21W	RDL	QC Batch

Elements												
Total Arsenic (As)	mg/L	<0.01	0.01	5128865	0.002	0.001	0.005	5128857	0.005	0.001	5128865	
Total Cadmium (Cd)	mg/L	<0.002	0.002	5128865	<0.0002	0.0002	0.0003	5128857	0.0003	0.0002	5128865	
Total Chromium (Cr)	mg/L	0.13	0.01	5128865	0.018	0.001	0.060	5128857	0.081	0.001	5128865	
Total Cobalt (Co)	mg/L	0.010	0.003	5128865	0.0018	0.0003	0.042	5128857	0.0070	0.0003	5128865	
Total Copper (Cu)	mg/L	0.054	0.002	5128865	0.0065	0.0002	0.050	5128857	0.29	0.0002	5128865	
Total Lead (Pb)	mg/L	0.008	0.002	5128865	0.0011	0.0002	0.014	5128857	0.044	0.0002	5128865	
Total Nickel (Ni)	mg/L	0.11	0.005	5128865	0.016	0.0005	0.071	5128857	0.10	0.0005	5128865	
Total Zinc (Zn)	mg/L	0.11	0.03	5128865	0.005	0.003	0.30	5128857	0.62	0.003	5128865	
Low Level Elements												
Total Mercury (Hg)	ug/L	0.016 (1)	0.006	5130747	0.005	0.002	0.050 (1)	5130747	0.065 (1)	0.006	5130747	

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Maxxam ID		BI2975	BI2976		BI2977	BI2978	BI2979		
Sampling Date		2011/08/19	2011/08/19		2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11-22W	C4 11-23W	QC Batch	C4 11-17W	C4 11-18W	C4 11-19W	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/L	0.006	0.002	5128865	0.001	<0.001	0.005	0.001	5128857
Total Cadmium (Cd)	mg/L	0.0006	<0.0002	5128865	<0.0002	<0.0002	0.0006	0.0002	5128857
Total Chromium (Cr)	mg/L	0.056	0.026	5128865	0.007	0.016	0.022	0.001	5128857
Total Cobalt (Co)	mg/L	0.014	0.0014	5128865	0.0046	0.0009	0.018	0.0003	5128857
Total Copper (Cu)	mg/L	0.087	0.028	5128865	0.019	0.0067	0.042	0.0002	5128857
Total Lead (Pb)	mg/L	0.032	0.0049	5128865	0.0042	0.0028	0.027	0.0002	5128857
Total Nickel (Ni)	mg/L	0.051	0.022	5128865	0.0073	0.0047	0.029	0.0005	5128857
Total Zinc (Zn)	mg/L	0.27	0.25	5128865	0.009	0.025	0.089	0.003	5128857
Low Level Elements									
Total Mercury (Hg)	ug/L	0.18 (1)	0.010 (1)	5130747	0.034 (1)	0.011 (1)	0.016 (1)	0.006	5130747

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		BI2980	BI2982	BI2983	BI2984	BI2985		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/18	2011/08/19		
	Units	C4 11-20W	C4 11-BMW3	C4 11-BMW4	C4 11-BDW1	C4 11-BDW2	RDL	QC Batch

Elements								
Total Arsenic (As)	mg/L	<0.001	0.007	0.005	0.002	0.002	0.001	5128865
Total Cadmium (Cd)	mg/L	<0.0002	0.0005	<0.0002	<0.0002	<0.0002	0.0002	5128865
Total Chromium (Cr)	mg/L	0.010	0.042	0.036	0.024	0.007	0.001	5128865
Total Cobalt (Co)	mg/L	0.0011	0.024	0.0048	0.0034	0.0035	0.0003	5128865
Total Copper (Cu)	mg/L	0.039	0.062	0.084	0.0074	0.0042	0.0002	5128865
Total Lead (Pb)	mg/L	0.0054	0.020	0.029	0.0048	0.0019	0.0002	5128865
Total Nickel (Ni)	mg/L	0.012	0.043	0.038	0.056	0.015	0.0005	5128865
Total Zinc (Zn)	mg/L	0.024	0.10	0.57	0.033	0.11	0.003	5128865
Low Level Elements								
Total Mercury (Hg)	ug/L	0.017 (1)	0.018 (1)	0.044 (1)	0.015 (1)	0.022 (1)	0.006	5130747

RDL = Reportable Detection Limit

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Maxxam ID		BI2986		BI2987		
Sampling Date		2011/08/19				
	Units	C4 11-FB	QC Batch	C4 11-TB	RDL	QC Batch

Elements						
Total Arsenic (As)	mg/L	<0.001	5128865	<0.001	0.001	5128857
Total Cadmium (Cd)	mg/L	<0.0002	5128865	<0.0002	0.0002	5128857
Total Chromium (Cr)	mg/L	<0.001	5128865	<0.001	0.001	5128857
Total Cobalt (Co)	mg/L	<0.0003	5128865	<0.0003	0.0003	5128857
Total Copper (Cu)	mg/L	0.0070	5128865	<0.0002	0.0002	5128857
Total Lead (Pb)	mg/L	0.0004	5128865	<0.0002	0.0002	5128857
Total Nickel (Ni)	mg/L	<0.0005	5128865	<0.0005	0.0005	5128857
Total Zinc (Zn)	mg/L	0.004	5128865	<0.003	0.003	5128857
Low Level Elements						
Total Mercury (Hg)	ug/L	0.002	5130747	<0.002	0.002	5130747

RDL = Reportable Detection Limit

Maxxam Job #: B178307
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER) Comments

Sample BI2971-02 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2974-02 Polychlorinated Biphenyls: Detection limit raised based on sample volume used for analysis

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER) Comments

Sample BI2971-01 Elements by ICPMS - Total: Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Results relate only to the items tested.

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report
Maxxam Job Number: CB178307

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5117866 JC7	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2011/08/25		71	%	30 - 130
		Aroclor 1260	2011/08/25		86	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2011/08/25		100	%	30 - 130
		Aroclor 1016	2011/08/25	<0.000050		mg/L	
		Aroclor 1221	2011/08/25	<0.000050		mg/L	
		Aroclor 1232	2011/08/25	<0.000050		mg/L	
		Aroclor 1242	2011/08/25	<0.000050		mg/L	
		Aroclor 1248	2011/08/25	<0.000050		mg/L	
		Aroclor 1254	2011/08/25	<0.000050		mg/L	
		Aroclor 1260	2011/08/25	<0.000050		mg/L	
		Aroclor 1262	2011/08/25	<0.000050		mg/L	
		Aroclor 1268	2011/08/25	<0.000050		mg/L	
		Total Aroclors	2011/08/25	<0.000050		mg/L	
5121969 RC8	Spiked Blank	Total Petroleum Hydrocarbon	2011/08/29		89	%	70 - 130
	Method Blank	Total Petroleum Hydrocarbon	2011/08/29	<2		mg/L	
5121973 RC8	Spiked Blank	Total Petroleum Hydrocarbon	2011/08/25		105	%	70 - 130
	Method Blank	Total Petroleum Hydrocarbon	2011/08/25	<2		mg/L	
5122018 JC7	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2011/08/26		110	%	30 - 130
		Aroclor 1260	2011/08/26		90	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2011/08/26		106	%	30 - 130
		Aroclor 1016	2011/08/26	<0.000050		mg/L	
		Aroclor 1221	2011/08/26	<0.000050		mg/L	
		Aroclor 1232	2011/08/26	<0.000050		mg/L	
		Aroclor 1242	2011/08/26	<0.000050		mg/L	
		Aroclor 1248	2011/08/26	<0.000050		mg/L	
		Aroclor 1254	2011/08/26	<0.000050		mg/L	
		Aroclor 1260	2011/08/26	<0.000050		mg/L	
		Aroclor 1262	2011/08/26	<0.000050		mg/L	
		Aroclor 1268	2011/08/26	<0.000050		mg/L	
		Total Aroclors	2011/08/26	<0.000050		mg/L	
5123448 JMS	Matrix Spike	Total Mercury (Hg)	2011/08/25		104	%	80 - 120
	Spiked Blank	Total Mercury (Hg)	2011/08/25		94	%	80 - 120
	Method Blank	Total Mercury (Hg)	2011/08/25	<0.002		ug/L	
	RPD	Total Mercury (Hg)	2011/08/25	NC		%	20
5128857 ST4	Spiked Blank	Total Arsenic (As)	2011/08/27		92	%	80 - 120
		Total Cadmium (Cd)	2011/08/27		98	%	80 - 120
		Total Chromium (Cr)	2011/08/27		96	%	80 - 120
		Total Cobalt (Co)	2011/08/27		96	%	80 - 120
		Total Copper (Cu)	2011/08/27		96	%	80 - 120
		Total Lead (Pb)	2011/08/27		99	%	80 - 120
		Total Nickel (Ni)	2011/08/27		98	%	80 - 120
		Total Zinc (Zn)	2011/08/27		93	%	80 - 120
	Method Blank	Total Arsenic (As)	2011/08/27	<0.001		mg/L	
		Total Cadmium (Cd)	2011/08/27	<0.0002		mg/L	
		Total Chromium (Cr)	2011/08/27	<0.001		mg/L	
		Total Cobalt (Co)	2011/08/27	<0.0003		mg/L	
		Total Copper (Cu)	2011/08/27	<0.0002		mg/L	
		Total Lead (Pb)	2011/08/27	<0.0002		mg/L	
		Total Nickel (Ni)	2011/08/27	<0.0005		mg/L	
		Total Zinc (Zn)	2011/08/27	<0.003		mg/L	
5128865 ST4	Matrix Spike [BI2986-01]	Total Arsenic (As)	2011/08/27		87	%	80 - 120
		Total Cadmium (Cd)	2011/08/27		93	%	80 - 120
		Total Chromium (Cr)	2011/08/27		92	%	80 - 120
		Total Cobalt (Co)	2011/08/27		93	%	80 - 120

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178307

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5128865 ST4	Matrix Spike [BI2986-01]	Total Copper (Cu)	2011/08/27		92	%	80 - 120
		Total Lead (Pb)	2011/08/27		96	%	80 - 120
		Total Nickel (Ni)	2011/08/27		94	%	80 - 120
		Total Zinc (Zn)	2011/08/27		89	%	80 - 120
	Spiked Blank	Total Arsenic (As)	2011/08/27		88	%	80 - 120
		Total Cadmium (Cd)	2011/08/27		94	%	80 - 120
		Total Chromium (Cr)	2011/08/27		91	%	80 - 120
		Total Cobalt (Co)	2011/08/27		91	%	80 - 120
		Total Copper (Cu)	2011/08/27		92	%	80 - 120
		Total Lead (Pb)	2011/08/27		95	%	80 - 120
		Total Nickel (Ni)	2011/08/27		93	%	80 - 120
		Total Zinc (Zn)	2011/08/27		91	%	80 - 120
	Method Blank	Total Arsenic (As)	2011/08/27	<0.001		mg/L	
		Total Cadmium (Cd)	2011/08/27	<0.0002		mg/L	
		Total Chromium (Cr)	2011/08/27	<0.001		mg/L	
		Total Cobalt (Co)	2011/08/27	<0.0003		mg/L	
		Total Copper (Cu)	2011/08/27	<0.0002		mg/L	
		Total Lead (Pb)	2011/08/27	<0.0002		mg/L	
		Total Nickel (Ni)	2011/08/27	<0.0005		mg/L	
		Total Zinc (Zn)	2011/08/27	<0.003		mg/L	
	RPD [BI2986-01]	Total Arsenic (As)	2011/08/27	NC		%	20
		Total Cadmium (Cd)	2011/08/27	NC		%	20
		Total Chromium (Cr)	2011/08/27	NC		%	20
		Total Cobalt (Co)	2011/08/27	NC		%	20
		Total Copper (Cu)	2011/08/27	1.8		%	20
		Total Lead (Pb)	2011/08/27	NC		%	20
		Total Nickel (Ni)	2011/08/27	NC		%	20
		Total Zinc (Zn)	2011/08/27	NC		%	20
5130747 JMS	Matrix Spike [BI2987-01]	Total Mercury (Hg)	2011/08/29		110	%	80 - 120
	Spiked Blank	Total Mercury (Hg)	2011/08/29		85	%	80 - 120
	Method Blank	Total Mercury (Hg)	2011/08/29	<0.002		ug/L	
	RPD [BI2969-01]	Total Mercury (Hg)	2011/08/29	NC (1)		%	20

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

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

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

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

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly

Validation Signature Page

Maxxam Job #: B178307

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

Janet Gao

Janet Gao, Senior Analyst, Organics Department

Lili Zhou

LILI ZHOU, Senior analyst, Inorganic department.

=====

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

Your Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4

Attention: ANDREW PASSALIS

SILA REMEDIATION
4495 BL. WILFRED-HAMEL BUR 100
QUEBEC, PQ
CANADA GIP 2T7

Report Date: 2011/08/29

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B178299

Received: 2011/08/22, 12:20

Sample Matrix: Soil
Samples Received: 63

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	23	2011/08/24	2011/08/27	CAL SOP-00190	CCME CWS, EPA 8260C
BTEX/F1 by HS GC/MS (MeOH extract)	40	2011/08/24	2011/08/28	CAL SOP-00190	CCME CWS, EPA 8260C
CCME Hydrocarbons (F2-F4 in soil)	14	2011/08/24	2011/08/26	AB SOP-00040	CCME PHC-CWS
				AB SOP-00036	
CCME Hydrocarbons (F2-F4 in soil)	49	2011/08/24	2011/08/27	AB SOP-00040	CCME PHC-CWS
				AB SOP-00036	
Elements by ICPMS - Soils	41	2011/08/27	2011/08/27	AB SOP-00043	EPA 200.8
Elements by ICPMS - Soils	18	2011/08/27	2011/08/28	AB SOP-00043	EPA 200.8
Elements by ICPMS - Soils	4	2011/08/27	2011/08/29	AB SOP-00043	EPA 200.8
Moisture	63	N/A	2011/08/24	CAL SOP-00023	McKeague MSSMA 2.411
Polychlorinated Biphenyls	22	2011/08/24	2011/08/26	CAL SOP-00149	EPA 3550B, EPA 8082A
Polychlorinated Biphenyls	32	2011/08/24	2011/08/27	CAL SOP-00149	EPA 3550B, EPA 8082A
Polychlorinated Biphenyls	8	2011/08/24	2011/08/28	CAL SOP-00149	EPA 3550B, EPA 8082A
Polychlorinated Biphenyls	1	2011/08/24	2011/08/29	CAL SOP-00149	EPA 3550B, EPA 8082A

* 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.

Ioana Stoica, Project Manager
Email: IStoica@maxxam.ca
Phone# (403) 291-3077

=====

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Total cover pages: 1

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		BI2777	BI2778	BI2779	BI2780	BI2781	BI2782		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 1WA	C4 11- 1WB	C4 11- 2WA	C4 11- 2WB	C4 11- 3WA	C4 11- 3WB	RDL	QC Batch

Physical Properties									
Moisture	%	8.3	6.8	6.2	8.2	9.1	9.2	0.3	5120642
RDL = Reportable Detection Limit									

Maxxam ID		BI2783	BI2784	BI2785	BI2786	BI2787	BI2788		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 4WA	C4 11- 4WB	C4 11- 6WA	C4 11- 6WB	C4 11- 7WA	C4 11- 7WB	RDL	QC Batch

Physical Properties									
Moisture	%	8.4	6.6	9.9	11	13	10	0.3	5120642
RDL = Reportable Detection Limit									

Maxxam ID		BI2789	BI2790	BI2791	BI2792	BI2793	BI2794		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 16WA	C4 11- 16WB	C4 11- BMW1A	C4 11- BMW1B	C4 11- 5WA	C4 11- 5WB	RDL	QC Batch

Physical Properties									
Moisture	%	4.8	10	4.5	11	9.2	14	0.3	5120642
RDL = Reportable Detection Limit									

Maxxam ID		BI2795	BI2796		BI2797	BI2799	BI2800	BI2801		
Sampling Date		2011/08/18	2011/08/18		2011/08/18	2011/08/18	2011/08/19	2011/08/19		
	Units	C4 11- 8WA	C4 11- 8WB	QC Batch	C4 11- 9WA	C4 11- 9WB	C4 11- 14WA	C4 11- 14WB	RDL	QC Batch

Physical Properties										
Moisture	%	11	18	5120642	9.8	10	16	12	0.3	5120957
RDL = Reportable Detection Limit										

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		BI2802	BI2803	BI2804	BI2805	BI2806		BI2807		
Sampling Date		2011/08/19	2011/08/19	2011/08/18	2011/08/18	2011/08/18		2011/08/18		
	Units	C4 11- 15WA	C4 11- 15WB	C4 11- 10WA	C4 11- 10WB	C4 11- 11WA	QC Batch	C4 11- 11WB	RDL	QC Batch

Physical Properties										
Moisture	%	11	7.9	6.1	4.4	6.0	5120957	7.8	0.3	5121161
RDL = Reportable Detection Limit										

Maxxam ID		BI2808	BI2809	BI2810		BI2811	BI2812	BI2813		
Sampling Date		2011/08/18	2011/08/18	2011/08/18		2011/08/18	2011/08/19	2011/08/19		
	Units	C4 11- 12WA	C4 11- 12WB	C4 11- 13WA	QC Batch	C4 11- 13WB	C4 11- 17WA	C4 11- 17WB	RDL	QC Batch

Physical Properties										
Moisture	%	14	8.1	9.1	5120957	6.7	16	10	0.3	5121161
RDL = Reportable Detection Limit										

Maxxam ID		BI2814	BI2815	BI2816	BI2817	BI2818	BI2819		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 18WA	C4 11- 18WB	C4 11- 19WA	C4 11- 19WB	C4 11- 20WA	C4 11- 20WB	RDL	QC Batch

Physical Properties										
Moisture	%	16	11	15	12	5.5	3.4	0.3	5121161	
RDL = Reportable Detection Limit										

Maxxam ID		BI2820		BI2821	BI2822		BI2823		
Sampling Date		2011/08/19		2011/08/19	2011/08/19		2011/08/19		
	Units	C4 11- 1A	QC Batch	C4 11- 1B	C4 11- 2A	QC Batch	C4 11- 2B	RDL	QC Batch

Physical Properties										
Moisture	%	2.7	5121161	2.8	22	5120523	13	0.3	5121161	
RDL = Reportable Detection Limit										

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		BI2824	BI2825	BI2826	BI2827	BI2828	BI2829		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 3A	C4 11- 3B	C4 11- 21WA	C4 -11 21WB	C4 11- 22WA	C4 11- 22WB	RDL	QC Batch

Physical Properties									
Moisture	%	6.3	3.9	2.9	4.3	1.6	2.6	0.3	5120523
RDL = Reportable Detection Limit									

Maxxam ID		BI2840	BI2841	BI2842	BI2843	BI2844	BI2845		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 23WA	C4 11- 23WB	C4 11- BMW3A	C4 11- BMW3B	C4 11- BMW4A	C4 11- BMW4B	RDL	QC Batch

Physical Properties									
Moisture	%	4.5	4.5	10	12	4.1	3.7	0.3	5120523
RDL = Reportable Detection Limit									

Maxxam ID		BI2846	BI2847	BI2848	BI2852	BI2853		
Sampling Date		2011/08/18	2011/08/18	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- BD1	C4 11- BD2	C4 11- BD3	C4 11- BD4	C4 11- BD5	RDL	QC Batch

Physical Properties								
Moisture	%	4.4	10	14	4.6	15	0.3	5120523
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2777	BI2778	BI2779	BI2780	BI2781	BI2782		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 1WA	C4 11- 1WB	C4 11- 2WA	C4 11- 2WB	C4 11- 3WA	C4 11- 3WB	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5121999
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	23	<10	<10	<10	10	5121999
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		5121999
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	89	93	91	93	93	92		5121999

RDL = Reportable Detection Limit

Maxxam ID		BI2783	BI2784	BI2785	BI2786	BI2787	BI2788		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 4WA	C4 11- 4WB	C4 11- 6WA	C4 11- 6WB	C4 11- 7WA	C4 11- 7WB	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	78	11	<10	10	5121999
F3 (C16-C34 Hydrocarbons)	mg/kg	20	<10	<10	30	72	<10	10	5121999
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		5121999
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	93	93	94	92	94	93		5121999

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2789	BI2790	BI2791	BI2792	BI2793	BI2794		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 16WA	C4 -11 16WB	C4 11- BMW1A	C4 11- BMW1B	C4 11- 5WA	C4 11- 5WB	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5121999
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5121999
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		5121999
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	93	97	91	95	93	93		5121999

RDL = Reportable Detection Limit

Maxxam ID		BI2795	BI2796		BI2797	BI2799	BI2800		
Sampling Date		2011/08/18	2011/08/18		2011/08/18	2011/08/18	2011/08/19		
	Units	C4 11- 8WA	C4 11- 8WB	QC Batch	C4 11- 9WA	C4 11- 9WB	C4 11- 14WA	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	5900	5121999	<10	<10	<10	10	5122059
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	820	5121999	<10	<10	120	10	5122059
Reached Baseline at C50	mg/kg	Yes	Yes	5121999	Yes	Yes	Yes		5122059
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	93	99	5121999	90	89	88		5122059

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2801	BI2802	BI2803	BI2804	BI2805	BI2806		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 14WB	C4 11- 15WA	C4 11- 15WB	C4 11- 10WA	C4 11- 10WB	C4 11- 11WA	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	140	10	5122059
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	49	<10	<10	<10	11000	10	5122059
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	No		5122059
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	85	88	88	88	87	93		5122059

RDL = Reportable Detection Limit

Maxxam ID		BI2807	BI2808	BI2809	BI2810	BI2811	BI2812		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/19		
	Units	C4 11- 11WB	C4 11- 12WA	C4 11- 12WB	C4 11- 13WA	C4 11- 13WB	C4 11- 17WA	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	170	<10	400	<10	<10	<10	10	5122059
F3 (C16-C34 Hydrocarbons)	mg/kg	10000	160	99	11	<10	22	10	5122059
Reached Baseline at C50	mg/kg	No	Yes	Yes	Yes	Yes	Yes		5122059
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	95	86	89	84	89	91		5122059

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2813	BI2814	BI2815	BI2816	BI2817		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 17WB	C4 11- 18WA	C4 11 - 18WB	C4 11- 19WA	C4 11- 19WB	RDL	QC Batch

Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	10	5122059
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	10	5122059
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes		5122059
Surrogate Recovery (%)								
O-TERPHENYL (sur.)	%	88	89	89	87	85		5122059
RDL = Reportable Detection Limit								

Maxxam ID		BI2818	BI2819	BI2820	BI2821	BI2822	BI2823		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 20WA	C4 11- 20WB	C4 11- 1A	C4 11- 1B	C4 11- 2A	C4 11- 2B	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5122063
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	17	160	86	17	10	5122063
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		5122063
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	89	89	86	89	87	82		5122063
RDL = Reportable Detection Limit									

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2824	BI2825	BI2826	BI2827	BI2828	BI2829		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 3A	C4 11- 3B	C4 11- 21WA	C4 -11 21WB	C4 11- 22WA	C4 11- 22WB	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5122063
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	31	<10	<10	10	5122063
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		5122063
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	87	87	88	90	89	88		5122063

RDL = Reportable Detection Limit

Maxxam ID		BI2840	BI2841	BI2842	BI2843	BI2844	BI2845		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 23WA	C4 11- 23WB	C4 11- BMW3A	C4 11- BMW3B	C4 11- BMW4A	C4 11- BMW4B	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5122063
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	<10	<10	<10	<10	10	5122063
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes		5122063
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	89	89	87	94	89	89		5122063

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		BI2846	BI2847		BI2848	BI2852	BI2853		
Sampling Date		2011/08/18	2011/08/18		2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- BD1	C4 11- BD2	QC Batch	C4 11- BD3	C4 11- BD4	C4 11- BD5	RDL	QC Batch

Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	5122063	<10	<10	<10	10	5125728
F3 (C16-C34 Hydrocarbons)	mg/kg	2900	<10	5122063	140	<10	13	10	5125728
Reached Baseline at C50	mg/kg	Yes	Yes	5122063	Yes	Yes	Yes		5125728
Surrogate Recovery (%)									
O-TERPHENYL (sur.)	%	84	86	5122063	91	88	89		5125728

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2777	BI2778	BI2779	BI2780	BI2781		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 1WA	C4 11- 1WB	C4 11- 2WA	C4 11- 2WB	C4 11- 3WA	RDL	QC Batch

Polychlorinated Biphenyls								
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	103	100	107	105	113		5119511
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2782	BI2783	BI2784	BI2785	BI2786		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 3WB	C4 11- 4WA	C4 11- 4WB	C4 11- 6WA	C4 11- 6WB	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	104	104	103	102	108		5119511
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2787	BI2788	BI2789	BI2790	BI2791		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 7WA	C4 11- 7WB	C4 11- 16WA	C4 -11 16WB	C4 11- BMW1A	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5119511
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	105	115	108	103	114		5119511
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2792	BI2793	BI2794		BI2795		
Sampling Date		2011/08/18	2011/08/18	2011/08/18		2011/08/18		
	Units	C4 11- BMW1B	C4 11- 5WA	C4 11- 5WB	QC Batch	C4 11- 8WA	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	5119511	0.013	0.010	5119593
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	5119511	<0.010	0.010	5119593
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	5119511	0.013	0.010	5119593
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	100	110	101	5119511	101		5119593
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2796		BI2797	BI2799	BI2800	BI2801		
Sampling Date		2011/08/18		2011/08/18	2011/08/18	2011/08/19	2011/08/19		
	Units	C4 11- 8WB	RDL	C4 11- 9WA	C4 11- 9WB	C4 11- 14WA	C4 11- 14WB	RDL	QC Batch

Polychlorinated Biphenyls									
Aroclor 1016	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1221	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1232	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1242	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1248	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1254	mg/kg	<0.020	0.020	0.013	<0.010	0.034	<0.010	0.010	5119593
Aroclor 1260	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1262	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Aroclor 1268	mg/kg	<0.020	0.020	<0.010	<0.010	<0.010	<0.010	0.010	5119593
Total Aroclors	mg/kg	<0.020	0.020	0.013	<0.010	0.034	<0.010	0.010	5119593
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	121		96	101	91	92		5119593

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2802	BI2803	BI2804	BI2805		BI2806		
Sampling Date		2011/08/19	2011/08/19	2011/08/18	2011/08/18		2011/08/18		
	Units	C4 11- 15WA	C4 11- 15WB	C4 11- 10WA	C4 11- 10WB	RDL	C4 11- 11WA	RDL	QC Batch

Polychlorinated Biphenyls									
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1254	mg/kg	0.035	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Total Aroclors	mg/kg	0.035	<0.010	<0.010	<0.010	0.010	<0.10	0.10	5119593
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	88	89	102	107		90		5119593
RDL = Reportable Detection Limit									

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2807		BI2808		BI2809		BI2810		
Sampling Date		2011/08/18		2011/08/18		2011/08/18		2011/08/18		
	Units	C4 11- 11WB	RDL	C4 11- 12WA	RDL	C4 11- 12WB	RDL	C4 11- 13WA	RDL	QC Batch
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1221	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1232	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1242	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1248	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1254	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1260	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1262	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Aroclor 1268	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Total Aroclors	mg/kg	<0.50	0.50	<0.10	0.10	<0.050	0.050	<0.020	0.020	5119593
Surrogate Recovery (%)										
NONACHLOROBIPHENYL (sur.)	%	96		83		86		102		5119593
RDL = Reportable Detection Limit										

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2811		BI2812	BI2813		BI2814		
Sampling Date		2011/08/18		2011/08/19	2011/08/19		2011/08/19		
	Units	C4 11- 13WB	QC Batch	C4 11- 17WA	C4 11- 17WB	QC Batch	C4 11- 18WA	RDL	QC Batch

Polychlorinated Biphenyls									
Aroclor 1016	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1221	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1232	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1242	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1248	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1254	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1260	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1262	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Aroclor 1268	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Total Aroclors	mg/kg	<0.010	5121985	<0.010	<0.010	5119593	<0.010	0.010	5121985
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	100	5121985	69	76	5119593	97		5121985

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2815	BI2816	BI2817	BI2818	BI2819		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11 - 18WB	C4 11- 19WA	C4 11- 19WB	C4 11- 20WA	C4 11- 20WB	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5121985
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	95	79	93	104	100		5121985
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2820			BI2821			BI2822		
Sampling Date		2011/08/19			2011/08/19			2011/08/19		
	Units	C4 11- 1A	RDL	QC Batch	C4 11- 1B	RDL	QC Batch	C4 11- 2A	RDL	QC Batch
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1221	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1232	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1242	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1248	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1254	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1260	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1262	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Aroclor 1268	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Total Aroclors	mg/kg	<0.010	0.010	5121985	<0.10	0.10	5126814	<0.010	0.010	5121985
Surrogate Recovery (%)										
NONACHLOROBIPHENYL (sur.)	%	91		5121985	107		5126814	83		5121985
RDL = Reportable Detection Limit										

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2823	BI2824	BI2825		BI2826	BI2827		
Sampling Date		2011/08/19	2011/08/19	2011/08/19		2011/08/19	2011/08/19		
	Units	C4 11- 2B	C4 11- 3A	C4 11- 3B	RDL	C4 11- 21WA	C4 -11 21WB	RDL	QC Batch

Polychlorinated Biphenyls									
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	0.010	<0.050	<0.050	0.050	5121985
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	86	95	100		110	99		5121985

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2828			BI2829	BI2840		BI2841		
Sampling Date		2011/08/19			2011/08/19	2011/08/19		2011/08/19		
	Units	C4 11- 22WA	RDL	QC Batch	C4 11- 22WB	C4 11- 23WA	RDL	C4 11- 23WB	RDL	QC Batch
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1221	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1232	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1242	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1248	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1254	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1260	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1262	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Aroclor 1268	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Total Aroclors	mg/kg	<0.010	0.010	5126814	<0.050	<0.050	0.050	<0.010	0.010	5121985
Surrogate Recovery (%)										
NONACHLOROBIPHENYL (sur.)	%	102		5126814	87	88		103		5121985
RDL = Reportable Detection Limit										

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2842	BI2843	BI2844		BI2845		
Sampling Date		2011/08/19	2011/08/19	2011/08/19		2011/08/19		
	Units	C4 11- BMW3A	C4 11- BMW3B	C4 11- BMW4A	QC Batch	C4 11- BMW4B	RDL	QC Batch
Polychlorinated Biphenyls								
Aroclor 1016	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1221	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1232	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1242	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1248	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1254	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1260	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1262	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Aroclor 1268	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Total Aroclors	mg/kg	<0.010	<0.010	<0.010	5121985	<0.010	0.010	5126814
Surrogate Recovery (%)								
NONACHLOROBIPHENYL (sur.)	%	92	95	97	5121985	108		5126814
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		BI2846		BI2847	BI2848	BI2852	BI2853		
Sampling Date		2011/08/18		2011/08/18	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- BD1	RDL	C4 11- BD2	C4 11- BD3	C4 11- BD4	C4 11- BD5	RDL	QC Batch

Polychlorinated Biphenyls									
Aroclor 1016	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1221	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1232	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1242	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1248	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1254	mg/kg	<0.050	0.050	<0.010	0.019	<0.010	<0.010	0.010	5126814
Aroclor 1260	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1262	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Aroclor 1268	mg/kg	<0.050	0.050	<0.010	<0.010	<0.010	<0.010	0.010	5126814
Total Aroclors	mg/kg	<0.050	0.050	<0.010	0.019	<0.010	<0.010	0.010	5126814
Surrogate Recovery (%)									
NONACHLOROBIPHENYL (sur.)	%	116		101	94	112	102		5126814

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BI2777	BI2778	BI2779	BI2780	BI2781	BI2782		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 1WA	C4 11- 1WB	C4 11- 2WA	C4 11- 2WB	C4 11- 3WA	C4 11- 3WB	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	2	2	1	2	2	2	1	5129825
Total Cadmium (Cd)	mg/kg	0.3	0.2	0.2	0.2	0.2	0.2	0.1	5129825
Total Chromium (Cr)	mg/kg	41	28	21	25	23	24	1	5129825
Total Cobalt (Co)	mg/kg	6	6	5	6	5	6	1	5129825
Total Copper (Cu)	mg/kg	8	9	7	8	7	9	5	5129825
Total Lead (Pb)	mg/kg	5	6	5	6	8	6	1	5129825
Total Mercury (Hg)	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129825
Total Nickel (Ni)	mg/kg	20	14	12	13	12	12	1	5129825
Total Zinc (Zn)	mg/kg	31	36	31	33	33	31	10	5129825

RDL = Reportable Detection Limit

Maxxam ID		BI2783	BI2784	BI2785	BI2786	BI2787	BI2788		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 4WA	C4 11- 4WB	C4 11- 6WA	C4 11- 6WB	C4 11- 7WA	C4 11- 7WB	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	1	1	1	<1	1	<1	1	5129825
Total Cadmium (Cd)	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	5129825
Total Chromium (Cr)	mg/kg	14	38	20	20	25	29	1	5129825
Total Cobalt (Co)	mg/kg	4	4	4	4	6	5	1	5129825
Total Copper (Cu)	mg/kg	<5	<5	8	<5	8	<5	5	5129825
Total Lead (Pb)	mg/kg	5	4	4	3	5	4	1	5129825
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129825
Total Nickel (Ni)	mg/kg	8	17	12	9	13	14	1	5129825
Total Zinc (Zn)	mg/kg	22	20	29	22	31	22	10	5129825

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BI2789	BI2790	BI2791	BI2792	BI2793	BI2794		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 16WA	C4 -11 16WB	C4 11- BMW1A	C4 11- BMW1B	C4 11- 5WA	C4 11- 5WB	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	2	2	2	3	2	2	1	5129825
Total Cadmium (Cd)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	5129825
Total Chromium (Cr)	mg/kg	23	29	18	46	21	20	1	5129825
Total Cobalt (Co)	mg/kg	6	7	5	8	6	7	1	5129825
Total Copper (Cu)	mg/kg	11	11	6	13	8	20	5	5129825
Total Lead (Pb)	mg/kg	5	8	4	8	5	5	1	5129825
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129825
Total Nickel (Ni)	mg/kg	12	16	10	20	11	10	1	5129825
Total Zinc (Zn)	mg/kg	35	41	31	46	32	30	10	5129825

RDL = Reportable Detection Limit

Maxxam ID		BI2795	BI2796		BI2797	BI2799	BI2800	BI2801		
Sampling Date		2011/08/18	2011/08/18		2011/08/18	2011/08/18	2011/08/19	2011/08/19		
	Units	C4 11- 8WA	C4 11- 8WB	QC Batch	C4 11- 9WA	C4 11- 9WB	C4 11- 14WA	C4 11- 14WB	RDL	QC Batch

Elements										
Total Arsenic (As)	mg/kg	2	2	5129825	2	2	4	3	1	5129893
Total Cadmium (Cd)	mg/kg	<0.1	<0.1	5129825	<0.1	<0.1	<0.1	<0.1	0.1	5129893
Total Chromium (Cr)	mg/kg	40	33	5129825	49	29	37	42	1	5129893
Total Cobalt (Co)	mg/kg	5	7	5129825	7	7	8	9	1	5129893
Total Copper (Cu)	mg/kg	7	17	5129825	9	12	13	16	5	5129893
Total Lead (Pb)	mg/kg	6	7	5129825	8	7	12	9	1	5129893
Total Mercury (Hg)	mg/kg	<0.05	<0.05	5129825	<0.05	<0.05	<0.05	<0.05	0.05	5129893
Total Nickel (Ni)	mg/kg	20	17	5129825	24	15	19	23	1	5129893
Total Zinc (Zn)	mg/kg	33	44	5129825	40	43	51	56	10	5129893

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BI2802	BI2803	BI2804	BI2805	BI2806	BI2807		
Sampling Date		2011/08/19	2011/08/19	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 15WA	C4 11- 15WB	C4 11- 10WA	C4 11- 10WB	C4 11- 11WA	C4 11- 11WB	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	2	2	1	1	2	2	1	5129893
Total Cadmium (Cd)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	5129893
Total Chromium (Cr)	mg/kg	26	44	29	16	33	28	1	5129893
Total Cobalt (Co)	mg/kg	7	7	4	4	7	7	1	5129893
Total Copper (Cu)	mg/kg	12	9	6	<5	10	11	5	5129893
Total Lead (Pb)	mg/kg	11	6	4	4	8	7	1	5129893
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129893
Total Nickel (Ni)	mg/kg	13	22	14	7	16	15	1	5129893
Total Zinc (Zn)	mg/kg	46	42	22	18	42	38	10	5129893

RDL = Reportable Detection Limit

Maxxam ID		BI2808	BI2809	BI2810	BI2811	BI2812	BI2813		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/19	2011/08/19		
	Units	C4 11- 12WA	C4 11- 12WB	C4 11- 13WA	C4 11- 13WB	C4 11- 17WA	C4 11- 17WB	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	1	1	1	<1	<1	1	1	5129893
Total Cadmium (Cd)	mg/kg	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	5129893
Total Chromium (Cr)	mg/kg	30	26	22	24	21	26	1	5129893
Total Cobalt (Co)	mg/kg	6	5	4	3	4	4	1	5129893
Total Copper (Cu)	mg/kg	13	6	<5	<5	<5	5	5	5129893
Total Lead (Pb)	mg/kg	21	5	5	3	4	5	1	5129893
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129893
Total Nickel (Ni)	mg/kg	13	13	9	12	10	13	1	5129893
Total Zinc (Zn)	mg/kg	94	26	34	18	18	19	10	5129893

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BI2814	BI2815	BI2816		BI2817	BI2818	BI2819		
Sampling Date		2011/08/19	2011/08/19	2011/08/19		2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 18WA	C4 11 - 18WB	C4 11- 19WA	QC Batch	C4 11- 19WB	C4 11- 20WA	C4 11- 20WB	RDL	QC Batch

Elements										
Total Arsenic (As)	mg/kg	2	2	1	5129893	1	3	1	1	5129892
Total Cadmium (Cd)	mg/kg	<0.1	<0.1	<0.1	5129893	<0.1	<0.1	<0.1	0.1	5129892
Total Chromium (Cr)	mg/kg	43	19	20	5129893	18	41	21	1	5129892
Total Cobalt (Co)	mg/kg	5	4	3	5129893	4	8	5	1	5129892
Total Copper (Cu)	mg/kg	8	<5	6	5129893	7	15	9	5	5129892
Total Lead (Pb)	mg/kg	6	4	5	5129893	5	14	9	1	5129892
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	5129893	<0.05	<0.05	<0.05	0.05	5129892
Total Nickel (Ni)	mg/kg	21	10	10	5129893	10	21	11	1	5129892
Total Zinc (Zn)	mg/kg	34	23	19	5129893	23	53	28	10	5129892

RDL = Reportable Detection Limit

Maxxam ID		BI2820	BI2821	BI2822	BI2823	BI2824	BI2825		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 1A	C4 11- 1B	C4 11- 2A	C4 11- 2B	C4 11- 3A	C4 11- 3B	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	9	2	<1	1	2	1	1	5129892
Total Cadmium (Cd)	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1	<0.1	0.1	5129892
Total Chromium (Cr)	mg/kg	27	34	19	34	23	29	1	5129892
Total Cobalt (Co)	mg/kg	5	8	8	8	6	5	1	5129892
Total Copper (Cu)	mg/kg	17	27	<5	<5	10	5	5	5129892
Total Lead (Pb)	mg/kg	77	53	6	4	9	6	1	5129892
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129892
Total Nickel (Ni)	mg/kg	14	22	10	18	12	15	1	5129892
Total Zinc (Zn)	mg/kg	77	280	30	24	34	34	10	5129892

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BI2826	BI2827	BI2828	BI2829	BI2840	BI2841		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 21WA	C4 -11 21WB	C4 11- 22WA	C4 11- 22WB	C4 11- 23WA	C4 11- 23WB	RDL	QC Batch

Elements									
Total Arsenic (As)	mg/kg	2	2	1	2	2	6	1	5129892
Total Cadmium (Cd)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	5129892
Total Chromium (Cr)	mg/kg	32	19	21	16	16	21	1	5129892
Total Cobalt (Co)	mg/kg	4	4	5	3	4	4	1	5129892
Total Copper (Cu)	mg/kg	8	8	8	<5	7	7	5	5129892
Total Lead (Pb)	mg/kg	33	12	7	4	14	6	1	5129892
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	5129892
Total Nickel (Ni)	mg/kg	15	9	11	9	9	12	1	5129892
Total Zinc (Zn)	mg/kg	84	41	23	18	26	25	10	5129892

RDL = Reportable Detection Limit

Maxxam ID		BI2842	BI2843	BI2844	BI2845	BI2846		BI2847		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/18		2011/08/18		
	Units	C4	C4	C4	C4	C4 11- BD1	QC Batch	C4 11- BD2	RDL	QC Batch
		11- BMW3A	11- BMW3B	11- BMW4A	11- BMW4B					

Elements										
Total Arsenic (As)	mg/kg	2	2	2	<1	2	5129892	<1	1	5132143
Total Cadmium (Cd)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	5129892	0.1	0.1	5132143
Total Chromium (Cr)	mg/kg	41	28	34	50	60	5129892	29	1	5132143
Total Cobalt (Co)	mg/kg	7	6	4	4	7	5129892	5	1	5132143
Total Copper (Cu)	mg/kg	10	7	5	5	9	5129892	6	5	5132143
Total Lead (Pb)	mg/kg	7	5	4	4	9	5129892	4	1	5132143
Total Mercury (Hg)	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05	5129892	<0.05	0.05	5132143
Total Nickel (Ni)	mg/kg	20	14	12	24	32	5129892	13	1	5132143
Total Zinc (Zn)	mg/kg	39	29	20	16	46	5129892	26	10	5132143

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		BI2848		BI2852	BI2853		
Sampling Date		2011/08/19		2011/08/19	2011/08/19		
	Units	C4 11- BD3	QC Batch	C4 11- BD4	C4 11- BD5	RDL	QC Batch
Elements							
Total Arsenic (As)	mg/kg	3	5133189	1	1	1	5132143
Total Cadmium (Cd)	mg/kg	<0.1	5133189	0.1	0.1	0.1	5132143
Total Chromium (Cr)	mg/kg	38	5133189	25	19	1	5132143
Total Cobalt (Co)	mg/kg	7	5133189	5	4	1	5132143
Total Copper (Cu)	mg/kg	12	5133189	8	6	5	5132143
Total Lead (Pb)	mg/kg	10	5133189	14	7	1	5132143
Total Mercury (Hg)	mg/kg	<0.05	5133189	<0.05	<0.05	0.05	5132143
Total Nickel (Ni)	mg/kg	20	5133189	12	9	1	5132143
Total Zinc (Zn)	mg/kg	43	5133189	43	27	10	5132143
RDL = Reportable Detection Limit							

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2777	BI2778	BI2779	BI2780	BI2781		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 1WA	C4 11- 1WB	C4 11- 2WA	C4 11- 2WB	C4 11- 3WA	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	0.0060	<0.0050	0.0067	<0.0050	0.0050	5118452
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118452
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118452
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118452
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118452
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118452
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118452
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118452
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	91	86	87	97	94		5118452
4-BROMOFLUOROBENZENE (sur.)	%	103	104	103	97	100		5118452
D10-ETHYLBENZENE (sur.)	%	111	119	126	115	118		5118452
D4-1,2-DICHLOROETHANE (sur.)	%	104	110	113	105	106		5118452

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2782	BI2783	BI2784	BI2785	BI2786		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 3WB	C4 11- 4WA	C4 11- 4WB	C4 11- 6WA	C4 11- 6WB	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118452
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118452
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118452
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118452
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118452
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118452
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118452
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118452
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	93	94	91	93	92		5118452
4-BROMOFLUOROBENZENE (sur.)	%	101	100	101	98	99		5118452
D10-ETHYLBENZENE (sur.)	%	114	123	118	123	117		5118452
D4-1,2-DICHLOROETHANE (sur.)	%	106	108	110	104	106		5118452

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2787	BI2788		BI2789		BI2790		
Sampling Date		2011/08/18	2011/08/18		2011/08/18		2011/08/18		
	Units	C4 11- 7WA	C4 11- 7WB	QC Batch	C4 11- 16WA	QC Batch	C4 -11 16WB	RDL	QC Batch

Volatiles									
Benzene	mg/kg	<0.0050	0.0060	5118452	<0.0050	5118467	<0.0050	0.0050	5118452
Toluene	mg/kg	<0.020	<0.020	5118452	<0.020	5118467	<0.020	0.020	5118452
Ethylbenzene	mg/kg	<0.010	<0.010	5118452	<0.010	5118467	<0.010	0.010	5118452
Xylenes (Total)	mg/kg	<0.040	<0.040	5118452	<0.040	5118467	<0.040	0.040	5118452
m & p-Xylene	mg/kg	<0.040	<0.040	5118452	<0.040	5118467	<0.040	0.040	5118452
o-Xylene	mg/kg	<0.020	<0.020	5118452	<0.020	5118467	<0.020	0.020	5118452
F1 (C6-C10) - BTEX	mg/kg	<12	<12	5118452	<12	5118467	<12	12	5118452
(C6-C10)	mg/kg	<12	<12	5118452	<12	5118467	<12	12	5118452
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	91	92	5118452	107	5118467	93		5118452
4-BROMOFLUOROBENZENE (sur.)	%	110	103	5118452	88	5118467	100		5118452
D10-ETHYLBENZENE (sur.)	%	117	118	5118452	104	5118467	116		5118452
D4-1,2-DICHLOROETHANE (sur.)	%	106	109	5118452	95	5118467	108		5118452

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2791	BI2792	BI2793	BI2794	BI2795		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- BMW1A	C4 11- BMW1B	C4 11- 5WA	C4 11- 5WB	C4 11- 8WA	RDL	QC Batch
Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	0.0074	<0.0050	0.0050	5118452
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118452
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118452
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118452
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118452
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118452
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118452
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118452
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	92	93	92	90	96		5118452
4-BROMOFLUOROBENZENE (sur.)	%	100	100	101	103	99		5118452
D10-ETHYLBENZENE (sur.)	%	122	121	115	119	114		5118452
D4-1,2-DICHLOROETHANE (sur.)	%	109	108	110	111	106		5118452
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2796	BI2797		BI2799	BI2800		
Sampling Date		2011/08/18	2011/08/18		2011/08/18	2011/08/19		
	Units	C4 11- 8WB	C4 11- 9WA	QC Batch	C4 11- 9WB	C4 11- 14WA	RDL	QC Batch

Volatiles								
Benzene	mg/kg	0.0084	0.0063	5118452	<0.0050	<0.0050	0.0050	5118467
Toluene	mg/kg	<0.020	<0.020	5118452	<0.020	<0.020	0.020	5118467
Ethylbenzene	mg/kg	<0.010	<0.010	5118452	<0.010	<0.010	0.010	5118467
Xylenes (Total)	mg/kg	<0.040	<0.040	5118452	<0.040	<0.040	0.040	5118467
m & p-Xylene	mg/kg	<0.040	<0.040	5118452	<0.040	<0.040	0.040	5118467
o-Xylene	mg/kg	<0.020	<0.020	5118452	<0.020	<0.020	0.020	5118467
F1 (C6-C10) - BTEX	mg/kg	510	<12	5118452	<12	<12	12	5118467
(C6-C10)	mg/kg	510	<12	5118452	<12	<12	12	5118467
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	91	92	5118452	107	101		5118467
4-BROMOFLUOROBENZENE (sur.)	%	77	102	5118452	89	85		5118467
D10-ETHYLBENZENE (sur.)	%	112	113	5118452	96	93		5118467
D4-1,2-DICHLOROETHANE (sur.)	%	105	107	5118452	95	90		5118467
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2801	BI2802	BI2803	BI2804	BI2805		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/18	2011/08/18		
	Units	C4 11- 14WB	C4 11- 15WA	C4 11- 15WB	C4 11- 10WA	C4 11- 10WB	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118467
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118467
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118467
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118467
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118467
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118467
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118467
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118467
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	109	111	111	113	101		5118467
4-BROMOFLUOROBENZENE (sur.)	%	87	78	88	89	77		5118467
D10-ETHYLBENZENE (sur.)	%	92	107	100	109	103		5118467
D4-1,2-DICHLOROETHANE (sur.)	%	94	97	98	99	94		5118467

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2806	BI2807	BI2808	BI2809	BI2810		
Sampling Date		2011/08/18	2011/08/18	2011/08/18	2011/08/18	2011/08/18		
	Units	C4 11- 11WA	C4 11- 11WB	C4 11- 12WA	C4 11- 12WB	C4 11- 13WA	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118467
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118467
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118467
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118467
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118467
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118467
F1 (C6-C10) - BTEX	mg/kg	<12	24	<12	<12	<12	12	5118467
(C6-C10)	mg/kg	<12	24	<12	<12	<12	12	5118467
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	108	106	102	107	107		5118467
4-BROMOFLUOROBENZENE (sur.)	%	81	114	83	90	88		5118467
D10-ETHYLBENZENE (sur.)	%	94	93	95	105	100		5118467
D4-1,2-DICHLOROETHANE (sur.)	%	90	96	92	96	91		5118467

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2811	BI2812	BI2813	BI2814	BI2815		
Sampling Date		2011/08/18	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 13WB	C4 11- 17WA	C4 11- 17WB	C4 11- 18WA	C4 11 - 18WB	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118467
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118467
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118467
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118467
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118467
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118467
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118467
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118467
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	106	104	104	108	99		5118467
4-BROMOFLUOROBENZENE (sur.)	%	90	87	88	90	82		5118467
D10-ETHYLBENZENE (sur.)	%	106	93	105	107	90		5118467
D4-1,2-DICHLOROETHANE (sur.)	%	95	95	99	102	90		5118467

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2816	BI2817		BI2818	BI2819		
Sampling Date		2011/08/19	2011/08/19		2011/08/19	2011/08/19		
	Units	C4 11- 19WA	C4 11- 19WB	QC Batch	C4 11- 20WA	C4 11- 20WB	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	5118467	<0.0050	<0.0050	0.0050	5118470
Toluene	mg/kg	<0.020	<0.020	5118467	<0.020	<0.020	0.020	5118470
Ethylbenzene	mg/kg	<0.010	<0.010	5118467	<0.010	<0.010	0.010	5118470
Xylenes (Total)	mg/kg	<0.040	<0.040	5118467	<0.040	<0.040	0.040	5118470
m & p-Xylene	mg/kg	<0.040	<0.040	5118467	<0.040	<0.040	0.040	5118470
o-Xylene	mg/kg	<0.020	<0.020	5118467	<0.020	<0.020	0.020	5118470
F1 (C6-C10) - BTEX	mg/kg	<12	<12	5118467	<12	<12	12	5118470
(C6-C10)	mg/kg	<12	<12	5118467	<12	<12	12	5118470
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	101	107	5118467	108	106		5118470
4-BROMOFLUOROBENZENE (sur.)	%	83	90	5118467	89	86		5118470
D10-ETHYLBENZENE (sur.)	%	87	109	5118467	111	100		5118470
D4-1,2-DICHLOROETHANE (sur.)	%	90	102	5118467	102	101		5118470
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2820	BI2821	BI2822	BI2823	BI2824		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 1A	C4 11- 1B	C4 11- 2A	C4 11- 2B	C4 11- 3A	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118470
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118470
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118470
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118470
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118470
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118470
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118470
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118470
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	105	99	105	98	104		5118470
4-BROMOFLUOROBENZENE (sur.)	%	86	81	87	80	88		5118470
D10-ETHYLBENZENE (sur.)	%	110	90	91	101	109		5118470
D4-1,2-DICHLOROETHANE (sur.)	%	96	93	100	95	107		5118470

RDL = Reportable Detection Limit

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2825	BI2826	BI2827	BI2828	BI2829		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 3B	C4 11- 21WA	C4 -11 21WB	C4 11- 22WA	C4 11- 22WB	RDL	QC Batch

Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118470
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118470
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118470
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118470
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118470
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118470
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118470
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118470
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	98	110	105	104	96		5118470
4-BROMOFLUOROBENZENE (sur.)	%	84	91	89	89	92		5118470
D10-ETHYLBENZENE (sur.)	%	101	101	100	99	118		5118470
D4-1,2-DICHLOROETHANE (sur.)	%	94	101	101	104	95		5118470

RDL = Reportable Detection Limit

Maxxam Job #: B178299
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SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2840	BI2841	BI2842	BI2843	BI2844		
Sampling Date		2011/08/19	2011/08/19	2011/08/19	2011/08/19	2011/08/19		
	Units	C4 11- 23WA	C4 11- 23WB	C4 11- BMW3A	C4 11- BMW3B	C4 11- BMW4A	RDL	QC Batch
Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	5118470
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118470
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	5118470
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118470
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	5118470
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	5118470
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	<12	12	5118470
(C6-C10)	mg/kg	<12	<12	<12	<12	<12	12	5118470
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	105	107	107	110	102		5118470
4-BROMOFLUOROBENZENE (sur.)	%	87	92	90	89	81		5118470
D10-ETHYLBENZENE (sur.)	%	103	116	97	98	101		5118470
D4-1,2-DICHLOROETHANE (sur.)	%	106	109	95	98	95		5118470
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
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SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2845	BI2846	BI2847		BI2848		
Sampling Date		2011/08/19	2011/08/18	2011/08/18		2011/08/19		
	Units	C4 11- BMW4B	C4 11- BD1	C4 11- BD2	QC Batch	C4 11- BD3	RDL	QC Batch
Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	5118470	<0.0050	0.0050	5121989
Toluene	mg/kg	<0.020	<0.020	<0.020	5118470	<0.020	0.020	5121989
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	5118470	<0.010	0.010	5121989
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	5118470	<0.040	0.040	5121989
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	5118470	<0.040	0.040	5121989
o-Xylene	mg/kg	<0.020	<0.020	<0.020	5118470	<0.020	0.020	5121989
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	5118470	<12	12	5121989
(C6-C10)	mg/kg	<12	<12	<12	5118470	<12	12	5121989
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	111	103	109	5118470	101		5121989
4-BROMOFLUOROBENZENE (sur.)	%	87	77	87	5118470	100		5121989
D10-ETHYLBENZENE (sur.)	%	112	95	112	5118470	92		5121989
D4-1,2-DICHLOROETHANE (sur.)	%	99	93	102	5118470	101		5121989
RDL = Reportable Detection Limit								

Maxxam Job #: B178299
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SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		BI2852	BI2853		
Sampling Date		2011/08/19	2011/08/19		
	Units	C4 11- BD4	C4 11- BD5	RDL	QC Batch

Volatiles					
Benzene	mg/kg	<0.0050	<0.0050	0.0050	5121989
Toluene	mg/kg	<0.020	<0.020	0.020	5121989
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	5121989
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	5121989
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	5121989
o-Xylene	mg/kg	<0.020	<0.020	0.020	5121989
F1 (C6-C10) - BTEX	mg/kg	<12	<12	12	5121989
(C6-C10)	mg/kg	<12	<12	12	5121989
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	101	100		5121989
4-BROMOFLUOROBENZENE (sur.)	%	100	100		5121989
D10-ETHYLBENZENE (sur.)	%	93	89		5121989
D4-1,2-DICHLOROETHANE (sur.)	%	102	102		5121989
RDL = Reportable Detection Limit					

Maxxam Job #: B178299
Report Date: 2011/08/29

SILA REMEDIATION
Client Project #: DLCU LANDFILL MONITORING
Site Location: CAM-4
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL) Comments

Sample BI2796-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2806-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2807-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2808-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2809-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2810-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2821-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2826-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2827-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2829-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2840-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Sample BI2846-01 Polychlorinated Biphenyls: Detection limits raised due to matrix interference

Results relate only to the items tested.

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report
Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5118452 LSH	Matrix Spike [BI2777-01]	1,4-Difluorobenzene (sur.)	2011/08/27		92	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		122	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		110	%	60 - 140
		Benzene	2011/08/27		112	%	60 - 140
		Toluene	2011/08/27		111	%	60 - 140
		Ethylbenzene	2011/08/27		112	%	60 - 140
		m & p-Xylene	2011/08/27		114	%	60 - 140
		o-Xylene	2011/08/27		111	%	60 - 140
		(C6-C10)	2011/08/27		99	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2011/08/27		91	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		100	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		124	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		116	%	60 - 140
		Benzene	2011/08/27		127	%	60 - 140
		Toluene	2011/08/27		125	%	60 - 140
		Ethylbenzene	2011/08/27		126	%	60 - 140
		m & p-Xylene	2011/08/27		123	%	60 - 140
		o-Xylene	2011/08/27		125	%	60 - 140
		(C6-C10)	2011/08/27		96	%	60 - 140
	Method Blank	1,4-Difluorobenzene (sur.)	2011/08/27		92	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		117	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		105	%	60 - 140
		Benzene	2011/08/27	<0.0050		mg/kg	
		Toluene	2011/08/27	<0.020		mg/kg	
		Ethylbenzene	2011/08/27	<0.010		mg/kg	
		Xylenes (Total)	2011/08/27	<0.040		mg/kg	
		m & p-Xylene	2011/08/27	<0.040		mg/kg	
		o-Xylene	2011/08/27	<0.020		mg/kg	
	RPD [BI2778-01]	F1 (C6-C10) - BTEX	2011/08/27	<12		mg/kg	
		(C6-C10)	2011/08/27	<12		mg/kg	
		Benzene	2011/08/27	NC		%	50
		Toluene	2011/08/27	NC		%	50
		Ethylbenzene	2011/08/27	NC		%	50
		Xylenes (Total)	2011/08/27	NC		%	50
		m & p-Xylene	2011/08/27	NC		%	50
		o-Xylene	2011/08/27	NC		%	50
		F1 (C6-C10) - BTEX	2011/08/27	NC		%	50
		(C6-C10)	2011/08/27	NC		%	50
5118467 PX	Matrix Spike [BI2789-01]	1,4-Difluorobenzene (sur.)	2011/08/28		97	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/28		96	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/28		95	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/28		80	%	60 - 140
		Benzene	2011/08/28		102	%	60 - 140
		Toluene	2011/08/28		101	%	60 - 140
		Ethylbenzene	2011/08/28		93	%	60 - 140
		m & p-Xylene	2011/08/28		85	%	60 - 140
		o-Xylene	2011/08/28		85	%	60 - 140
		(C6-C10)	2011/08/28		93	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2011/08/28		103	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/28		99	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/28		108	%	60 - 130

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5118467 PX	Spiked Blank	D4-1,2-DICHLOROETHANE (sur.)	2011/08/28		84	%	60 - 140
		Benzene	2011/08/28		111	%	60 - 140
		Toluene	2011/08/28		111	%	60 - 140
		Ethylbenzene	2011/08/28		103	%	60 - 140
		m & p-Xylene	2011/08/28		94	%	60 - 140
		o-Xylene	2011/08/28		93	%	60 - 140
	Method Blank	(C6-C10)	2011/08/28		90	%	60 - 140
		1,4-Difluorobenzene (sur.)	2011/08/27		101	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		84	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		105	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		86	%	60 - 140
		Benzene	2011/08/27	<0.0050		mg/kg	
	RPD [BI2789-01]	Toluene	2011/08/27	<0.020		mg/kg	
		Ethylbenzene	2011/08/27	<0.010		mg/kg	
		Xylenes (Total)	2011/08/27	<0.040		mg/kg	
		m & p-Xylene	2011/08/27	<0.040		mg/kg	
		o-Xylene	2011/08/27	<0.020		mg/kg	
		F1 (C6-C10) - BTEX	2011/08/27	<12		mg/kg	
		(C6-C10)	2011/08/27	<12		mg/kg	
		Benzene	2011/08/28	NC		%	50
		Toluene	2011/08/28	NC		%	50
		Ethylbenzene	2011/08/28	NC		%	50
		Xylenes (Total)	2011/08/28	NC		%	50
		m & p-Xylene	2011/08/28	NC		%	50
		o-Xylene	2011/08/28	NC		%	50
		F1 (C6-C10) - BTEX	2011/08/28	NC		%	50
		(C6-C10)	2011/08/28	NC		%	50
5118470 PX	Matrix Spike [BI2821-01]	1,4-Difluorobenzene (sur.)	2011/08/28		95	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/28		95	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/28		86	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/28		85	%	60 - 140
		Benzene	2011/08/28		94	%	60 - 140
		Toluene	2011/08/28		93	%	60 - 140
	Spiked Blank	Ethylbenzene	2011/08/28		85	%	60 - 140
		m & p-Xylene	2011/08/28		78	%	60 - 140
		o-Xylene	2011/08/28		78	%	60 - 140
		(C6-C10)	2011/08/28		103	%	60 - 140
		1,4-Difluorobenzene (sur.)	2011/08/28		101	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/28		103	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/28		101	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/28		76	%	60 - 140
		Benzene	2011/08/28		131	%	60 - 140
		Toluene	2011/08/28		130	%	60 - 140
		Ethylbenzene	2011/08/28		117	%	60 - 140
		m & p-Xylene	2011/08/28		107	%	60 - 140
	Method Blank	o-Xylene	2011/08/28		109	%	60 - 140
		(C6-C10)	2011/08/28		106	%	60 - 140
		1,4-Difluorobenzene (sur.)	2011/08/27		101	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		84	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		105	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		86	%	60 - 140
		Benzene	2011/08/27	<0.0050		mg/kg	
		Toluene	2011/08/27	<0.020		mg/kg	
		Ethylbenzene	2011/08/27	<0.010		mg/kg	

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5118470 PX	Method Blank	Xylenes (Total)	2011/08/27	<0.040		mg/kg	
		m & p-Xylene	2011/08/27	<0.040		mg/kg	
		o-Xylene	2011/08/27	<0.020		mg/kg	
		F1 (C6-C10) - BTEX	2011/08/27	<12		mg/kg	
		(C6-C10)	2011/08/27	<12		mg/kg	
		RPD [BI2821-01]					
		Benzene	2011/08/28	NC		%	50
		Toluene	2011/08/28	NC		%	50
		Ethylbenzene	2011/08/28	NC		%	50
		Xylenes (Total)	2011/08/28	NC		%	50
		m & p-Xylene	2011/08/28	NC		%	50
		o-Xylene	2011/08/28	NC		%	50
		F1 (C6-C10) - BTEX	2011/08/28	NC		%	50
		(C6-C10)	2011/08/28	NC		%	50
5119511 JC7	Matrix Spike [BI2777-01]	NONACHLOROBIPHENYL (sur.)	2011/08/26		112	%	30 - 130
		Aroclor 1260	2011/08/26		112	%	30 - 130
	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2011/08/26		93	%	30 - 130
		Aroclor 1260	2011/08/26		107	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2011/08/26		103	%	30 - 130
		Aroclor 1016	2011/08/26	<0.010		mg/kg	
		Aroclor 1221	2011/08/26	<0.010		mg/kg	
		Aroclor 1232	2011/08/26	<0.010		mg/kg	
		Aroclor 1242	2011/08/26	<0.010		mg/kg	
		Aroclor 1248	2011/08/26	<0.010		mg/kg	
		Aroclor 1254	2011/08/26	<0.010		mg/kg	
		Aroclor 1260	2011/08/26	<0.010		mg/kg	
		Aroclor 1262	2011/08/26	<0.010		mg/kg	
		Aroclor 1268	2011/08/26	<0.010		mg/kg	
		Total Aroclors	2011/08/26	<0.010		mg/kg	
	RPD [BI2777-01]	Aroclor 1016	2011/08/26	NC		%	50
		Aroclor 1221	2011/08/26	NC		%	50
		Aroclor 1232	2011/08/26	NC		%	50
		Aroclor 1242	2011/08/26	NC		%	50
		Aroclor 1248	2011/08/26	NC		%	50
		Aroclor 1254	2011/08/26	NC		%	50
		Aroclor 1260	2011/08/26	NC		%	50
		Aroclor 1262	2011/08/26	NC		%	50
		Aroclor 1268	2011/08/26	NC		%	50
		Total Aroclors	2011/08/26	NC		%	50
5119593 JC7	Matrix Spike	NONACHLOROBIPHENYL (sur.)	2011/08/25		105	%	30 - 130
		Aroclor 1260	2011/08/25		91	%	30 - 130
	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2011/08/25		98	%	30 - 130
		Aroclor 1260	2011/08/25		88	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2011/08/25		103	%	30 - 130
		Aroclor 1016	2011/08/25	<0.010		mg/kg	
		Aroclor 1221	2011/08/25	<0.010		mg/kg	
		Aroclor 1232	2011/08/25	<0.010		mg/kg	
		Aroclor 1242	2011/08/25	<0.010		mg/kg	
		Aroclor 1248	2011/08/25	<0.010		mg/kg	
		Aroclor 1254	2011/08/25	<0.010		mg/kg	
		Aroclor 1260	2011/08/25	<0.010		mg/kg	
		Aroclor 1262	2011/08/25	<0.010		mg/kg	
		Aroclor 1268	2011/08/25	<0.010		mg/kg	
		Total Aroclors	2011/08/25	<0.010		mg/kg	
	RPD	Aroclor 1016	2011/08/25	NC		%	50

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5119593 JC7	RPD	Aroclor 1221	2011/08/25	NC		%	50
		Aroclor 1232	2011/08/25	NC		%	50
		Aroclor 1242	2011/08/25	NC		%	50
		Aroclor 1248	2011/08/25	NC		%	50
		Aroclor 1254	2011/08/25	NC		%	50
		Aroclor 1260	2011/08/25	NC		%	50
		Aroclor 1262	2011/08/25	NC		%	50
		Aroclor 1268	2011/08/25	NC		%	50
		Total Aroclors	2011/08/25	NC		%	50
5120523 KSA	RPD [BI2821-01]	Moisture	2011/08/24	16.4		%	20
5120642 KSA	RPD [BI2777-01]	Moisture	2011/08/24	6.2		%	20
5120957 KSA	RPD [BI2799-01]	Moisture	2011/08/24	2.9		%	20
5121161 KSA	RPD [BI2811-01]	Moisture	2011/08/24	4.6		%	20
5121985 JC7	Matrix Spike [BI2811-01]	NONACHLOROBIPHENYL (sur.)	2011/08/27		108	%	30 - 130
		Aroclor 1260	2011/08/27		107	%	30 - 130
	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2011/08/27		101	%	30 - 130
		Aroclor 1260	2011/08/27		103	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2011/08/27		104	%	30 - 130
		Aroclor 1016	2011/08/27	<0.010		mg/kg	
		Aroclor 1221	2011/08/27	<0.010		mg/kg	
		Aroclor 1232	2011/08/27	<0.010		mg/kg	
		Aroclor 1242	2011/08/27	<0.010		mg/kg	
		Aroclor 1248	2011/08/27	<0.010		mg/kg	
		Aroclor 1254	2011/08/27	<0.010		mg/kg	
		Aroclor 1260	2011/08/27	<0.010		mg/kg	
		Aroclor 1262	2011/08/27	<0.010		mg/kg	
		Aroclor 1268	2011/08/27	<0.010		mg/kg	
		Total Aroclors	2011/08/27	<0.010		mg/kg	
	RPD [BI2811-01]	Aroclor 1016	2011/08/27	NC		%	50
		Aroclor 1221	2011/08/27	NC		%	50
		Aroclor 1232	2011/08/27	NC		%	50
		Aroclor 1242	2011/08/27	NC		%	50
		Aroclor 1248	2011/08/27	NC		%	50
		Aroclor 1254	2011/08/27	NC		%	50
		Aroclor 1260	2011/08/27	NC		%	50
		Aroclor 1262	2011/08/27	NC		%	50
		Aroclor 1268	2011/08/27	NC		%	50
		Total Aroclors	2011/08/27	NC		%	50
5121989 RSU	Matrix Spike	1,4-Difluorobenzene (sur.)	2011/08/27		105	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		99	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		97	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		103	%	60 - 140
		Benzene	2011/08/27		112	%	60 - 140
		Toluene	2011/08/27		106	%	60 - 140
		Ethylbenzene	2011/08/27		113	%	60 - 140
		m & p-Xylene	2011/08/27		100	%	60 - 140
		o-Xylene	2011/08/27		97	%	60 - 140
		(C6-C10)	2011/08/27		79	%	60 - 140
	Spiked Blank	1,4-Difluorobenzene (sur.)	2011/08/27		98	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		90	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		104	%	60 - 140
		Benzene	2011/08/27		93	%	60 - 140
		Toluene	2011/08/27		88	%	60 - 140

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5121989 RSU	Spiked Blank	Ethylbenzene	2011/08/27		92	%	60 - 140
		m & p-Xylene	2011/08/27		82	%	60 - 140
		o-Xylene	2011/08/27		83	%	60 - 140
	Method Blank	(C6-C10)	2011/08/27		63	%	60 - 140
		1,4-Difluorobenzene (sur.)	2011/08/27		101	%	60 - 140
		4-BROMOFLUOROBENZENE (sur.)	2011/08/27		100	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2011/08/27		104	%	60 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2011/08/27		99	%	60 - 140
		Benzene	2011/08/27	<0.0050		mg/kg	
		Toluene	2011/08/27	<0.020		mg/kg	
		Ethylbenzene	2011/08/27	<0.010		mg/kg	
		Xylenes (Total)	2011/08/27	<0.040		mg/kg	
		m & p-Xylene	2011/08/27	<0.040		mg/kg	
		o-Xylene	2011/08/27	<0.020		mg/kg	
	RPD	F1 (C6-C10) - BTEX	2011/08/27	<12		mg/kg	
		(C6-C10)	2011/08/27	<12		mg/kg	
		Benzene	2011/08/27	NC		%	50
		Toluene	2011/08/27	NC		%	50
		Ethylbenzene	2011/08/27	NC		%	50
		Xylenes (Total)	2011/08/27	NC		%	50
		m & p-Xylene	2011/08/27	NC		%	50
		o-Xylene	2011/08/27	NC		%	50
		F1 (C6-C10) - BTEX	2011/08/27	NC		%	50
		(C6-C10)	2011/08/27	NC		%	50
5121999 SDD	Matrix Spike [BI2777-01]	O-TERPHENYL (sur.)	2011/08/26		96	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		108	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		113	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2011/08/26		80	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		94	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		90	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2011/08/26		88	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2011/08/26	<10		mg/kg	
	RPD [BI2777-01]	F2 (C10-C16 Hydrocarbons)	2011/08/26	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2011/08/26	NC		%	50
5122059 SR2	Matrix Spike [BI2811-01]	O-TERPHENYL (sur.)	2011/08/26		90	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		112	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		120	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2011/08/26		92	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		104	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		103	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2011/08/26		95	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2011/08/26	<10		mg/kg	
	RPD [BI2811-01]	F2 (C10-C16 Hydrocarbons)	2011/08/26	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2011/08/26	NC		%	50
5122063 SDD	Matrix Spike [BI2821-01]	O-TERPHENYL (sur.)	2011/08/26		85	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		102	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		NC	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2011/08/26		84	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		87	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		86	%	70 - 130

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5122063 SDD	Method Blank	O-TERPHENYL (sur.)	2011/08/26		90	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2011/08/26	<10		mg/kg	
	RPD [BI2821-01]	F2 (C10-C16 Hydrocarbons)	2011/08/26	NC		%	50
		F3 (C16-C34 Hydrocarbons)	2011/08/26	6.2		%	50
5125728 SR2	Matrix Spike	O-TERPHENYL (sur.)	2011/08/26		106	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		NC	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		102	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2011/08/26		91	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26		101	%	70 - 130
		F3 (C16-C34 Hydrocarbons)	2011/08/26		93	%	70 - 130
	Method Blank	O-TERPHENYL (sur.)	2011/08/26		89	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2011/08/26	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2011/08/26	<10		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2011/08/26	0.5		%	50
		F3 (C16-C34 Hydrocarbons)	2011/08/26	NC		%	50
5126814 SJ1	Matrix Spike	NONACHLOROBIPHENYL (sur.)	2011/08/28		109	%	30 - 130
	Spiked Blank	NONACHLOROBIPHENYL (sur.)	2011/08/28		109	%	30 - 130
		Aroclor 1260	2011/08/28		105	%	30 - 130
	Method Blank	NONACHLOROBIPHENYL (sur.)	2011/08/28		130	%	30 - 130
		Aroclor 1016	2011/08/28	<0.010		mg/kg	
		Aroclor 1221	2011/08/28	<0.010		mg/kg	
		Aroclor 1232	2011/08/28	<0.010		mg/kg	
		Aroclor 1242	2011/08/28	<0.010		mg/kg	
		Aroclor 1248	2011/08/28	<0.010		mg/kg	
		Aroclor 1254	2011/08/28	<0.010		mg/kg	
		Aroclor 1260	2011/08/28	<0.010		mg/kg	
		Aroclor 1262	2011/08/28	<0.010		mg/kg	
		Aroclor 1268	2011/08/28	<0.010		mg/kg	
		Total Aroclors	2011/08/28	<0.010		mg/kg	
	RPD	Aroclor 1016	2011/08/29	NC		%	50
		Aroclor 1221	2011/08/29	NC		%	50
		Aroclor 1232	2011/08/29	NC		%	50
		Aroclor 1242	2011/08/29	NC		%	50
		Aroclor 1248	2011/08/29	NC		%	50
		Aroclor 1254	2011/08/29	44.5		%	50
		Aroclor 1260	2011/08/29	NC		%	50
		Aroclor 1262	2011/08/29	NC		%	50
		Aroclor 1268	2011/08/29	NC		%	50
		Total Aroclors	2011/08/29	44.5		%	50
5129825 ST4	Matrix Spike [BI2779-01]	Total Arsenic (As)	2011/08/27		96	%	75 - 125
		Total Cadmium (Cd)	2011/08/27		102	%	75 - 125
		Total Chromium (Cr)	2011/08/27		105	%	75 - 125
		Total Cobalt (Co)	2011/08/27		104	%	75 - 125
		Total Copper (Cu)	2011/08/27		100	%	75 - 125
		Total Lead (Pb)	2011/08/27		98	%	75 - 125
		Total Mercury (Hg)	2011/08/27		99	%	75 - 125
		Total Nickel (Ni)	2011/08/27		99	%	75 - 125
		Total Zinc (Zn)	2011/08/27		NC	%	75 - 125
	QC Standard	Total Arsenic (As)	2011/08/27		93	%	50 - 150
		Total Chromium (Cr)	2011/08/27		94	%	41 - 159
		Total Cobalt (Co)	2011/08/27		92	%	75 - 125
		Total Copper (Cu)	2011/08/27		90	%	72 - 127
		Total Lead (Pb)	2011/08/27		93	%	54 - 146

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5129825 ST4	QC Standard	Total Nickel (Ni)	2011/08/27		107	%	61 - 139
		Total Zinc (Zn)	2011/08/27		96	%	72 - 128
	Spiked Blank	Total Arsenic (As)	2011/08/27		90	%	75 - 125
		Total Cadmium (Cd)	2011/08/27		96	%	75 - 125
		Total Chromium (Cr)	2011/08/27		96	%	75 - 125
		Total Cobalt (Co)	2011/08/27		96	%	75 - 125
		Total Copper (Cu)	2011/08/27		93	%	75 - 125
		Total Lead (Pb)	2011/08/27		96	%	75 - 125
		Total Mercury (Hg)	2011/08/27		100	%	75 - 125
		Total Nickel (Ni)	2011/08/27		95	%	75 - 125
		Total Zinc (Zn)	2011/08/27		95	%	75 - 125
	Method Blank	Total Arsenic (As)	2011/08/27	<1		mg/kg	
		Total Cadmium (Cd)	2011/08/27	0.2, RDL=0.1		mg/kg	
		Total Chromium (Cr)	2011/08/27	<1		mg/kg	
		Total Cobalt (Co)	2011/08/27	<1		mg/kg	
		Total Copper (Cu)	2011/08/27	<5		mg/kg	
		Total Lead (Pb)	2011/08/27	<1		mg/kg	
		Total Mercury (Hg)	2011/08/27	0.06, RDL=0.05		mg/kg	
		Total Nickel (Ni)	2011/08/27	<1		mg/kg	
		Total Zinc (Zn)	2011/08/27	<10		mg/kg	
	RPD [BI2779-01]	Total Arsenic (As)	2011/08/27	NC		%	35
		Total Cadmium (Cd)	2011/08/27	NC		%	35
		Total Chromium (Cr)	2011/08/27	7.1		%	35
		Total Cobalt (Co)	2011/08/27	4.5		%	35
		Total Copper (Cu)	2011/08/27	NC		%	35
		Total Lead (Pb)	2011/08/27	NC		%	35
		Total Mercury (Hg)	2011/08/27	NC		%	35
		Total Nickel (Ni)	2011/08/27	2.7		%	35
		Total Zinc (Zn)	2011/08/27	NC		%	35
5129892 ST4	Matrix Spike [BI2823-01]	Total Arsenic (As)	2011/08/27		80	%	75 - 125
		Total Cadmium (Cd)	2011/08/27		85	%	75 - 125
		Total Chromium (Cr)	2011/08/27		NC	%	75 - 125
		Total Cobalt (Co)	2011/08/27		86	%	75 - 125
		Total Copper (Cu)	2011/08/27		82	%	75 - 125
		Total Lead (Pb)	2011/08/27		84	%	75 - 125
		Total Mercury (Hg)	2011/08/27		94	%	75 - 125
		Total Nickel (Ni)	2011/08/27		79	%	75 - 125
	QC Standard	Total Zinc (Zn)	2011/08/27		84	%	75 - 125
		Total Arsenic (As)	2011/08/27		101	%	50 - 150
		Total Chromium (Cr)	2011/08/27		97	%	41 - 159
		Total Cobalt (Co)	2011/08/27		96	%	75 - 125
		Total Copper (Cu)	2011/08/27		93	%	72 - 127
		Total Lead (Pb)	2011/08/27		97	%	54 - 146
		Total Nickel (Ni)	2011/08/27		121	%	61 - 139
		Total Zinc (Zn)	2011/08/27		100	%	72 - 128
	Spiked Blank	Total Arsenic (As)	2011/08/27		94	%	75 - 125
		Total Cadmium (Cd)	2011/08/27		98	%	75 - 125
		Total Chromium (Cr)	2011/08/27		100	%	75 - 125
		Total Cobalt (Co)	2011/08/27		100	%	75 - 125
		Total Copper (Cu)	2011/08/27		99	%	75 - 125
		Total Lead (Pb)	2011/08/27		101	%	75 - 125
		Total Mercury (Hg)	2011/08/27		103	%	75 - 125
		Total Nickel (Ni)	2011/08/27		99	%	75 - 125
		Total Zinc (Zn)	2011/08/27		99	%	75 - 125

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5129892 ST4	Method Blank	Total Arsenic (As)	2011/08/27	<1		mg/kg	
		Total Cadmium (Cd)	2011/08/27	<0.1		mg/kg	
		Total Chromium (Cr)	2011/08/27	<1		mg/kg	
		Total Cobalt (Co)	2011/08/27	<1		mg/kg	
		Total Copper (Cu)	2011/08/27	<5		mg/kg	
		Total Lead (Pb)	2011/08/27	<1		mg/kg	
		Total Mercury (Hg)	2011/08/27	<0.05		mg/kg	
		Total Nickel (Ni)	2011/08/27	<1		mg/kg	
		Total Zinc (Zn)	2011/08/27	<10		mg/kg	
	RPD [BI2823-01]	Total Arsenic (As)	2011/08/27	NC		%	35
		Total Cadmium (Cd)	2011/08/27	NC		%	35
		Total Chromium (Cr)	2011/08/27	8.8		%	35
		Total Cobalt (Co)	2011/08/27	0.02		%	35
		Total Copper (Cu)	2011/08/27	NC		%	35
		Total Lead (Pb)	2011/08/27	NC		%	35
		Total Mercury (Hg)	2011/08/27	NC		%	35
		Total Nickel (Ni)	2011/08/27	9.4		%	35
		Total Zinc (Zn)	2011/08/27	NC		%	35
5129893 ST4	Matrix Spike [BI2807-01]	Total Arsenic (As)	2011/08/27		98	%	75 - 125
		Total Cadmium (Cd)	2011/08/27		103	%	75 - 125
		Total Chromium (Cr)	2011/08/27		NC	%	75 - 125
		Total Cobalt (Co)	2011/08/27		103	%	75 - 125
		Total Copper (Cu)	2011/08/27		101	%	75 - 125
		Total Lead (Pb)	2011/08/27		102	%	75 - 125
		Total Mercury (Hg)	2011/08/27		101	%	75 - 125
		Total Nickel (Ni)	2011/08/27		102	%	75 - 125
	QC Standard	Total Zinc (Zn)	2011/08/27		NC	%	75 - 125
		Total Arsenic (As)	2011/08/27		104	%	50 - 150
		Total Chromium (Cr)	2011/08/27		102	%	41 - 159
		Total Cobalt (Co)	2011/08/27		99	%	75 - 125
		Total Copper (Cu)	2011/08/27		94	%	72 - 127
		Total Lead (Pb)	2011/08/27		97	%	54 - 146
		Total Nickel (Ni)	2011/08/27		108	%	61 - 139
		Total Zinc (Zn)	2011/08/27		100	%	72 - 128
	Spiked Blank	Total Arsenic (As)	2011/08/27		92	%	75 - 125
		Total Cadmium (Cd)	2011/08/27		96	%	75 - 125
		Total Chromium (Cr)	2011/08/27		97	%	75 - 125
		Total Cobalt (Co)	2011/08/27		98	%	75 - 125
		Total Copper (Cu)	2011/08/27		96	%	75 - 125
		Total Lead (Pb)	2011/08/27		98	%	75 - 125
		Total Mercury (Hg)	2011/08/27		101	%	75 - 125
		Total Nickel (Ni)	2011/08/27		98	%	75 - 125
	Method Blank	Total Zinc (Zn)	2011/08/27		94	%	75 - 125
		Total Arsenic (As)	2011/08/27	<1		mg/kg	
		Total Cadmium (Cd)	2011/08/27	<0.1		mg/kg	
		Total Chromium (Cr)	2011/08/27	<1		mg/kg	
		Total Cobalt (Co)	2011/08/27	<1		mg/kg	
		Total Copper (Cu)	2011/08/27	<5		mg/kg	
		Total Lead (Pb)	2011/08/27	<1		mg/kg	
		Total Mercury (Hg)	2011/08/27	<0.05		mg/kg	
	RPD [BI2807-01]	Total Nickel (Ni)	2011/08/27	<1		mg/kg	
		Total Zinc (Zn)	2011/08/27	<10		mg/kg	
		Total Arsenic (As)	2011/08/28	NC		%	35
		Total Cadmium (Cd)	2011/08/28	NC		%	35

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5129893 ST4	RPD [BI2807-01]	Total Chromium (Cr)	2011/08/28	0.08		%	35
		Total Cobalt (Co)	2011/08/28	1.1		%	35
		Total Copper (Cu)	2011/08/28	NC		%	35
		Total Lead (Pb)	2011/08/28	3.5		%	35
		Total Mercury (Hg)	2011/08/28	NC		%	35
		Total Nickel (Ni)	2011/08/28	0.6		%	35
		Total Zinc (Zn)	2011/08/28	NC		%	35
5132143 ST4	Matrix Spike	Total Arsenic (As)	2011/08/29		92	%	75 - 125
		Total Cadmium (Cd)	2011/08/29		100	%	75 - 125
		Total Chromium (Cr)	2011/08/29		NC	%	75 - 125
		Total Cobalt (Co)	2011/08/29		101	%	75 - 125
		Total Copper (Cu)	2011/08/29		NC	%	75 - 125
		Total Lead (Pb)	2011/08/29		103	%	75 - 125
		Total Mercury (Hg)	2011/08/29		104	%	75 - 125
	QC Standard	Total Nickel (Ni)	2011/08/29		NC	%	75 - 125
		Total Zinc (Zn)	2011/08/29		NC	%	75 - 125
		Total Arsenic (As)	2011/08/29		97	%	50 - 150
		Total Chromium (Cr)	2011/08/29		115	%	41 - 159
		Total Cobalt (Co)	2011/08/29		109	%	75 - 125
		Total Copper (Cu)	2011/08/29		96	%	72 - 127
		Total Lead (Pb)	2011/08/29		106	%	54 - 146
	Spiked Blank	Total Nickel (Ni)	2011/08/29		120	%	61 - 139
		Total Zinc (Zn)	2011/08/29		104	%	72 - 128
		Total Arsenic (As)	2011/08/29		97	%	75 - 125
		Total Cadmium (Cd)	2011/08/29		99	%	75 - 125
		Total Chromium (Cr)	2011/08/29		107	%	75 - 125
		Total Cobalt (Co)	2011/08/29		107	%	75 - 125
		Total Copper (Cu)	2011/08/29		101	%	75 - 125
	Method Blank	Total Lead (Pb)	2011/08/29		105	%	75 - 125
		Total Mercury (Hg)	2011/08/29		102	%	75 - 125
		Total Nickel (Ni)	2011/08/29		106	%	75 - 125
		Total Zinc (Zn)	2011/08/29		102	%	75 - 125
		Total Arsenic (As)	2011/08/29	<1		mg/kg	
		Total Cadmium (Cd)	2011/08/29	<0.1		mg/kg	
		Total Chromium (Cr)	2011/08/29	<1		mg/kg	
	RPD	Total Cobalt (Co)	2011/08/29	<1		mg/kg	
		Total Copper (Cu)	2011/08/29	<5		mg/kg	
		Total Lead (Pb)	2011/08/29	<1		mg/kg	
		Total Mercury (Hg)	2011/08/29	<0.05		mg/kg	
		Total Nickel (Ni)	2011/08/29	<1		mg/kg	
		Total Zinc (Zn)	2011/08/29	<10		mg/kg	
		Total Arsenic (As)	2011/08/29	1.8		%	35
5133189 TDB	Matrix Spike	Total Cadmium (Cd)	2011/08/29	3.5		%	35
		Total Chromium (Cr)	2011/08/29	1.9		%	35
		Total Cobalt (Co)	2011/08/29	4.3		%	35
		Total Copper (Cu)	2011/08/29	0.6		%	35
		Total Lead (Pb)	2011/08/29	3.3		%	35
		Total Mercury (Hg)	2011/08/29	NC		%	35
		Total Nickel (Ni)	2011/08/29	0.5		%	35
		Total Zinc (Zn)	2011/08/29	2.1		%	35
		Total Arsenic (As)	2011/08/29		91	%	75 - 125
		Total Cadmium (Cd)	2011/08/29		101	%	75 - 125
		Total Chromium (Cr)	2011/08/29		95	%	75 - 125
		Total Cobalt (Co)	2011/08/29		93	%	75 - 125
		Total Copper (Cu)	2011/08/29		92	%	75 - 125

SILA REMEDIATION
Attention: ANDREW PASSALIS
Client Project #: DLCU LANDFILL MONITORING
P.O. #:
Site Location: CAM-4

Quality Assurance Report (Continued)

Maxxam Job Number: CB178299

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
5133189 TDB	Matrix Spike	Total Lead (Pb)	2011/08/29		97	%	75 - 125
		Total Mercury (Hg)	2011/08/29		106	%	75 - 125
		Total Nickel (Ni)	2011/08/29		95	%	75 - 125
		Total Zinc (Zn)	2011/08/29		NC	%	75 - 125
	QC Standard	Total Arsenic (As)	2011/08/29		101	%	50 - 150
		Total Chromium (Cr)	2011/08/29		84	%	41 - 159
		Total Cobalt (Co)	2011/08/29		90	%	75 - 125
		Total Copper (Cu)	2011/08/29		90	%	72 - 127
	Spiked Blank	Total Lead (Pb)	2011/08/29		98	%	54 - 146
		Total Nickel (Ni)	2011/08/29		94	%	61 - 139
		Total Zinc (Zn)	2011/08/29		95	%	72 - 128
		Total Arsenic (As)	2011/08/29		94	%	75 - 125
	Method Blank	Total Cadmium (Cd)	2011/08/29		100	%	75 - 125
		Total Chromium (Cr)	2011/08/29		94	%	75 - 125
		Total Cobalt (Co)	2011/08/29		97	%	75 - 125
		Total Copper (Cu)	2011/08/29		94	%	75 - 125
	RPD	Total Lead (Pb)	2011/08/29		100	%	75 - 125
		Total Mercury (Hg)	2011/08/29		102	%	75 - 125
		Total Nickel (Ni)	2011/08/29		98	%	75 - 125
		Total Zinc (Zn)	2011/08/29		99	%	75 - 125
	Method Blank	Total Arsenic (As)	2011/08/29	<1		mg/kg	
		Total Cadmium (Cd)	2011/08/29	<0.1		mg/kg	
		Total Chromium (Cr)	2011/08/29	<1		mg/kg	
		Total Cobalt (Co)	2011/08/29	<1		mg/kg	
	RPD	Total Copper (Cu)	2011/08/29	<5		mg/kg	
		Total Lead (Pb)	2011/08/29	<1		mg/kg	
		Total Mercury (Hg)	2011/08/29	0.06, RDL=0.05		mg/kg	
		Total Nickel (Ni)	2011/08/29	2, RDL=1		mg/kg	
	RPD	Total Zinc (Zn)	2011/08/29	<10		mg/kg	
		Total Arsenic (As)	2011/08/29	NC		%	35
		Total Cadmium (Cd)	2011/08/29	NC		%	35
		Total Chromium (Cr)	2011/08/29	3.4		%	35
	RPD	Total Cobalt (Co)	2011/08/29	4.5		%	35
		Total Copper (Cu)	2011/08/29	NC		%	35
		Total Lead (Pb)	2011/08/29	5.4		%	35
		Total Mercury (Hg)	2011/08/29	NC		%	35
	RPD	Total Nickel (Ni)	2011/08/29	5.0		%	35
		Total Zinc (Zn)	2011/08/29	NC		%	35

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

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

QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B178299

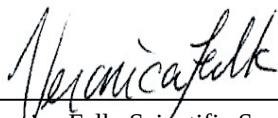
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Janet Gao, Senior Analyst, Organics Department



LILI ZHOU, Senior analyst, Inorganic department.



Veronica Falk, Scientific Specialist



LUBA SHYMUSHOVSKA, Senior Analyst, Organic Department

=====

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

Report Transmission Cover Page

Bill To:	Sila Remediation Inc.	Project:		Lot ID:	822134
Report To:	EGE	ID:	CD 9229	Control Number:	A126853
	511 Pepperloaf Cres.	Name:	Cam-4 -DLC	Date Received:	Aug 24, 2011
	Winnipeg, MB, Canada	Location:	Pelly Bay	Date Reported:	Sep 1, 2011
	R3R 1E6	LSD:		Report Number:	1464165
Attn:	A Passalis	P.O.:			
Sampled By:		Acct code:			
Company:	EGE				

Contact & Affiliation	Address	Delivery Commitments
Accounts Payable Sila Remediation Inc.	200,4495 Boul. Wilfrid-Hamel Quebec City, Quebec G1P 2J7 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: n/a	On [Lot Approval and Final Test Report Approval] send (Invoice) by Post M
JP Pelletiere Sila Remediation Inc.	200,4495 Boul. Wilfrid-Hamel Quebec City, Quebec G1P 2J7 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: jppelletier@biogenie-env.com	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (Test Report) by Email - Merge Reports
A Passalis EGE	511 Pepperloaf Cres. Winnipeg, Manitoba R3R 1E6 Phone: (204) 837-6473 Fax: (204) 837-6473 Email: apassalis@mts.net	On [Lot Verification] send (COA, COC) by Email - Merge Reports On [Report Approval] send (Test Report) by Email - Merge Reports

Notes To Clients:

- Analysis for total purgeable hydrocarbons (C6-10) was not performed on sample 7 because the sample was completely used up for PCB and total extractable hydrocarbon analysis.

Sample Custody

Bill To:	Sila Remediation Inc.	Project:		Lot ID:	822134
Report To:	EGE	ID:	CD 9229	Control Number:	A126853
	511 Pepperloaf Cres.	Name:	Cam-4 -DLC	Date Received:	Aug 24, 2011
	Winnipeg, MB, Canada	Location:	Pelly Bay	Date Reported:	Sep 1, 2011
	R3R 1E6	LSD:		Report Number:	1464165
Attn:	A Passalis	P.O.:			
Sampled By:		Acct code:			
Company:	EGE				

Sample Disposal Date: October 01, 2011

All samples will be stored until this date unless other instructions are received. Please indicate other requirements below and return this form to the address or fax number on the top of this page.

☐ Extend Sample Storage Until _____ (MM/DD/YY)

The following charges apply to extended sample storage:

Storage for an additional 30 days	\$ 2.50 per sample
Storage for an additional 60 days	\$ 5.00 per sample
Storage for an additional 90 days	\$ 7.50 per sample

☐ Return Sample, collect, to the address below via:

☐ Greyhound

☐ DHL

☐ Purolator

☐ Other (specify) _____

Name	_____
Company	_____
Address	_____

Phone	_____
Fax	_____
Signature	_____

Analytical Report

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

		Reference Number	822134-1	822134-2	822134-3	
		Sample Date	Aug 18, 2011	Aug 18, 2011	Aug 19, 2011	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	C411-11WA / 6.5°C	C411-7WA / 6.5°C	C411-14WA / 6.5°C	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion						
Mercury	Strong Acid Extractable	mg/kg	<0.01	<0.01	0.01	0.01
Arsenic	Strong Acid Extractable	mg/kg	1.5	0.9	3.8	0.2
Cadmium	Strong Acid Extractable	mg/kg	0.05	0.02	0.07	0.01
Chromium	Strong Acid Extractable	mg/kg	26.2	22.5	31.1	0.1
Cobalt	Strong Acid Extractable	mg/kg	7.7	5.8	9.1	0.1
Copper	Strong Acid Extractable	mg/kg	11	6	13	1
Lead	Strong Acid Extractable	mg/kg	11.2	4.5	13.7	0.1
Nickel	Strong Acid Extractable	mg/kg	13.7	19.4	24.3	0.5
Zinc	Strong Acid Extractable	mg/kg	50	26	50	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date			25-Aug-11	25-Aug-11	25-Aug-11	
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date			25-Aug-11	25-Aug-11	25-Aug-11	
F1 C6-C10	Dry Weight	mg/kg	<4	<4	<4	4
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date			25-Aug-11	25-Aug-11	25-Aug-11	
F2c C10-C16	Dry Weight	mg/kg	<10	<10	<10	10
F3c C16-C34	Dry Weight	mg/kg	3420	<30	98	30
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	5.71	10.80	14.70	
Polychlorinated Biphenyls - Soil						
Aroclor 1016	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1260	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate						
Decachlorobiphenyl	Surrogate	%	110	100	100	50-150

Analytical Report

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

		Reference Number	822134-4	822134-5	
		Sample Date	Aug 19, 2011	Aug 19, 2011	
		Sample Time	NA	NA	
		Sample Location			
		Sample Description	C411-21WB / 6.5°C	C411-18WA / 6.5°C	
		Matrix	Soil	Soil	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion					
Mercury	Strong Acid Extractable	mg/kg	<0.01	<0.01	0.01
Arsenic	Strong Acid Extractable	mg/kg	1.6	1.4	0.2
Cadmium	Strong Acid Extractable	mg/kg	0.04	0.04	0.01
Chromium	Strong Acid Extractable	mg/kg	15.4	16.7	0.1
Cobalt	Strong Acid Extractable	mg/kg	4.8	4.9	0.1
Copper	Strong Acid Extractable	mg/kg	8	8	1
Lead	Strong Acid Extractable	mg/kg	11.5	6.3	0.1
Nickel	Strong Acid Extractable	mg/kg	14.8	14.0	0.5
Zinc	Strong Acid Extractable	mg/kg	42	32	1
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date			25-Aug-11	25-Aug-11	
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date			25-Aug-11	25-Aug-11	
F1 C6-C10	Dry Weight	mg/kg	<4	<4	4
Extractable Petroleum Hydrocarbons - Soil					
Extraction Date			25-Aug-11	25-Aug-11	
F2c C10-C16	Dry Weight	mg/kg	<10	<10	10
F3c C16-C34	Dry Weight	mg/kg	<30	<30	30
Silica Gel Cleanup					
Silica Gel Cleanup			Done	Done	
Soil % Moisture					
Moisture	Soil % Moisture	% by weight	4.24	18.10	
Polychlorinated Biphenyls - Soil					
Aroclor 1016	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1221	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1232	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1242	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1248	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1254	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1260	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1262	Dry Weight	mg/kg	<0.1	<0.1	0.1
Aroclor 1268	Dry Weight	mg/kg	<0.1	<0.1	0.1
Total PCBs	Dry Weight	mg/kg	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Soil - Surrogate					
Decachlorobiphenyl	Surrogate	%	100	120	50-150

Analytical Report

Bill To: Sila Remediation Inc.
Report To: EGE
511 Pepperloaf Cres.
Winnipeg, MB, Canada
R3R 1E6
Attn: A Passalis
Sampled By:
Company: EGE

Project:
ID: CD 9229
Name: Cam-4 -DLC
Location: Pelly Bay
LSD:
P.O.:
Acct code:

Lot ID: **822134**
Control Number: A126853
Date Received: Aug 24, 2011
Date Reported: Sep 1, 2011
Report Number: 1464165

Reference Number 822134-6
Sample Date Aug 18, 2011
Sample Time NA
Sample Location
Sample Description C411-8W / 6.5°C
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Purgeable Hydrocarbons - Water					
Total Hydrocarbon (C6-C10)	mg/L	4.20			0.01

Analytical Report

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

		Reference Number	822134-6	822134-7	
		Sample Date	Aug 18, 2011	Aug 19, 2011	
		Sample Time	NA	NA	
		Sample Location			
		Sample Description	C411-8W / 6.5°C	C411-15W / 6.5°C	
		Matrix	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Metals Total					
Aluminum	Total	mg/L		1.93	0.02
Calcium	Total	mg/L		110	0.2
Iron	Total	mg/L		5.48	0.05
Magnesium	Total	mg/L		16.4	0.1
Manganese	Total	mg/L		2.42	0.005
Potassium	Total	mg/L		9.6	0.4
Silicon	Total	mg/L		6.81	0.05
Sodium	Total	mg/L		42.6	0.4
Sulfur	Total	mg/L		7.3	0.3
Antimony	Total	mg/L		0.0005	0.0002
Arsenic	Total	mg/L	0.0033	0.0030	0.0002
Barium	Total	mg/L		0.111	0.001
Beryllium	Total	mg/L		0.0001	0.0001
Bismuth	Total	mg/L		<0.0005	0.0005
Boron	Total	mg/L		0.216	0.002
Cadmium	Total	mg/L	0.00014	0.00006	0.00001
Chromium	Total	mg/L	0.0074	0.0066	0.0005
Cobalt	Total	mg/L	0.0030	0.0036	0.0001
Copper	Total	mg/L	0.006	0.003	0.001
Lead	Total	mg/L	0.0035	0.0014	0.0001
Lithium	Total	mg/L		0.004	0.001
Molybdenum	Total	mg/L		0.002	0.001
Nickel	Total	mg/L	0.0440	0.0106	0.0005
Selenium	Total	mg/L		<0.0002	0.0002
Silver	Total	mg/L		0.00005	0.00001
Strontium	Total	mg/L		0.286	0.001
Thallium	Total	mg/L		<0.00005	0.00005
Tin	Total	mg/L		<0.001	0.001
Titanium	Total	mg/L		0.176	0.0005
Uranium	Total	mg/L		0.0280	0.0005
Vanadium	Total	mg/L		0.0073	0.0001
Zinc	Total	mg/L	0.025	0.302	0.001
Zirconium	Total	mg/L		0.005	0.001
Extractable Hydrocarbons (C40) - Water					
Total C11-C40+		mg/L	1.2	8.1	0.1

Analytical Report

Bill To: Sila Remediation Inc.
Report To: EGE
511 Pepperloaf Cres.
Winnipeg, MB, Canada
R3R 1E6
Attn: A Passalis
Sampled By:
Company: EGE

Project:
ID: CD 9229
Name: Cam-4 -DLC
Location: Pelly Bay
LSD:
P.O.:
Acct code:

Lot ID: **822134**
Control Number: A126853
Date Received: Aug 24, 2011
Date Reported: Sep 1, 2011
Report Number: 1464165

		Reference Number	822134-6	822134-7		
		Sample Date	Aug 18, 2011	Aug 19, 2011		
		Sample Time	NA	NA		
		Sample Location				
		Sample Description	C411-8W / 6.5°C	C411-15W / 6.5°C		
		Matrix	Water	Water		
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Polychlorinated Biphenyls - Water						
Aroclor 1016		ug/L	<0.1	<0.1		0.1
Aroclor 1221		ug/L	<0.1	<0.1		0.1
Aroclor 1232		ug/L	<0.1	<0.1		0.1
Aroclor 1242		ug/L	<0.1	<0.1		0.1
Aroclor 1248		ug/L	<0.1	<0.1		0.1
Aroclor 1254		ug/L	<0.1	<0.1		0.1
Aroclor 1260		ug/L	<0.1	<0.1		0.1
Aroclor 1262		ug/L	<0.1	<0.1		0.1
Aroclor 1268		ug/L	<0.1	<0.1		0.1
Total PCBs		ug/L	<0.1	<0.1		0.1
Polychlorinated Biphenyls - Water - Surrogate						
Decachlorobiphenyl	Surrogate	%	75	60		50-150

Approved by: 
Randy Neumann, BSc
General Manager

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Hot Water Soluble

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Boron	mg/L	0.003	-0.0	0.0	yes
Date Acquired: August 25, 2011					

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Boron	mg/kg	0.9	0.9	10	0.1	yes
Date Acquired: August 25, 2011						

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Boron	mg/kg	0.8	0.7	1.0	yes
Date Acquired: August 25, 2011					
Boron	mg/kg	0.1	0.1	0.1	yes
Date Acquired: August 25, 2011					

Metals Strong Acid Digestion

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Mercury	ug/L	0.01	-0.07	0.13	yes
Antimony	ug/L	0.059	-0.1	0.2	yes
Arsenic	ug/L	0.072	-0.2	0.2	yes
Barium	ug/L	0.051	-0	1	yes
Beryllium	ug/L	0.003	-0.1	0.1	yes
Cadmium	ug/L	0.001	-0.01	0.01	yes
Chromium	ug/L	0.085	-0.4	0.4	yes
Cobalt	ug/L	0.004	-0.1	0.1	yes
Copper	ug/L	0.278	-0.6	1.2	yes
Lead	ug/L	0.055	-0.1	0.1	yes
Molybdenum	ug/L	0.1	-0.6	0.6	yes
Nickel	ug/L	0.149	-0.4	0.7	yes
Selenium	ug/L	0.082	-0.3	0.3	yes
Silver	ug/L	0.087	-0.09	0.14	yes
Thallium	ug/L	-0.028	-0.04	0.04	yes
Tin	ug/L	4.392	0.0	7.2	yes
Uranium	ug/L	0.0027	-0.2	0.2	yes
Vanadium	ug/L	0.037	-0.1	0.1	yes
Zinc	ug/L	0.825	-1	1	yes
Date Acquired: August 25, 2011					

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Mercury	mg/kg	<0.01	0.01	10	0.03	yes
Antimony	mg/kg	<0.2	<0.2	20	0.4	yes
Arsenic	mg/kg	6.9	5.8	20	0.4	yes
Barium	mg/kg	223	224	20	2	yes
Beryllium	mg/kg	0.9	0.9	20	0.2	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Strong Acid Digestion - Continued

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Cadmium	mg/kg	0.06	0.06	20	0.02	yes
Chromium	mg/kg	31.5	32.0	20	1.1	yes
Cobalt	mg/kg	13.1	14.9	20	0.2	yes
Copper	mg/kg	32	31	20	2.2	yes
Lead	mg/kg	8.7	10.0	20	0.2	yes
Molybdenum	mg/kg	<1	<1	20	2.2	yes
Nickel	mg/kg	39.3	39.7	20	1.1	yes
Selenium	mg/kg	0.5	0.4	20	0.7	yes
Silver	mg/kg	<0.1	<0.1	20	0.22	yes
Thallium	mg/kg	0.15	0.17	20	0.11	yes
Tin	mg/kg	<1	1	20	2.2	yes
Uranium	mg/kg	2.9	2.9	20	1.1	yes
Vanadium	mg/kg	44.2	46.1	20	0.2	yes
Zinc	mg/kg	81	80	20	2	yes

Date Acquired: August 25, 2011

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Antimony	mg/kg	38.6	35.8	43.6	yes
Arsenic	mg/kg	41.3	37.7	44.7	yes
Barium	mg/kg	192	184	209	yes
Beryllium	mg/kg	19.2	17.4	22.2	yes
Cadmium	mg/kg	2.06	1.92	2.20	yes
Chromium	mg/kg	98.8	92.2	105.8	yes
Cobalt	mg/kg	21.2	19.2	22.6	yes
Copper	mg/kg	194	176.3	207.3	yes
Lead	mg/kg	19.7	18.6	21.8	yes
Molybdenum	mg/kg	192	181.0	205.0	yes
Nickel	mg/kg	99.8	93.0	106.0	yes
Selenium	mg/kg	39.2	36.1	42.9	yes
Silver	mg/kg	19.8	17.99	22.01	yes
Thallium	mg/kg	9.84	9.57	11.23	yes
Tin	mg/kg	184	176.0	206.0	yes
Uranium	mg/kg	99.8	86.3	105.3	yes
Vanadium	mg/kg	18.7	17.0	20.4	yes
Zinc	mg/kg	204	180	220	yes

Date Acquired: August 25, 2011

Mercury	mg/kg	0.34	0.15	0.42	yes
Antimony	mg/kg	0.6	0.1	1.1	yes
Arsenic	mg/kg	89.1	70.1	97.5	yes
Barium	mg/kg	244	228	294	yes
Beryllium	mg/kg	0.9	0.5	1.1	yes
Cadmium	mg/kg	1.96	1.68	2.22	yes
Chromium	mg/kg	44.8	35.0	53.0	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Strong Acid Digestion - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Cobalt	mg/kg	14.2	11.9	15.9	yes
Copper	mg/kg	195	155.7	225.9	yes
Lead	mg/kg	112	99.6	135.6	yes
Molybdenum	mg/kg	3	2.3	4.2	yes
Nickel	mg/kg	67.0	50.4	71.4	yes
Selenium	mg/kg	1.0	0.3	1.3	yes
Silver	mg/kg	1.0	0.42	1.32	yes
Thallium	mg/kg	0.34	0.29	0.43	yes
Tin	mg/kg	3	1.0	5.4	yes
Uranium	mg/kg	1.2	0.9	1.6	yes
Vanadium	mg/kg	48.2	40.2	54.0	yes
Zinc	mg/kg	488	360	550	yes
Date Acquired: August 25, 2011					

Metals Total

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Aluminum	mg/L	<0.02	-0.01	0.02	yes
Calcium	mg/L	0.0082	-0.1	0.1	yes
Iron	mg/L	0	-0.01	0.02	yes
Magnesium	mg/L	<0.1	-0.0	0.0	yes
Manganese	mg/L	0.0006	-0.003	0.003	yes
Potassium	mg/L	0.0843	-0.1	0.2	yes
Silicon	mg/L	0.0167	-0.03	0.04	yes
Sodium	mg/L	0.0816	-0.1	0.2	yes
Sulfur	mg/L	0.0117	-0.1	0.2	yes
Antimony	ug/L	0.121	-0.2	0.2	yes
Arsenic	ug/L	<0.2	-0.2	0.2	yes
Barium	ug/L	0.109	-1	1	yes
Beryllium	ug/L	<0.1	-0.1	0.1	yes
Bismuth	ug/L	0.008	-0.5	0.5	yes
Boron	ug/L	1.528	-1	3	yes
Cadmium	ug/L	0.001	-0.01	0.01	yes
Chromium	ug/L	0.01	-0.7	0.3	yes
Cobalt	ug/L	0.013	-0.1	0.1	yes
Copper	ug/L	0.336	-1	1	yes
Lead	ug/L	0.003	-0.1	0.1	yes
Lithium	ug/L	0.018	-1	1	yes
Molybdenum	ug/L	0.051	-1	1	yes
Nickel	ug/L	0.439	-0.5	0.5	yes
Selenium	ug/L	0.168	-0.2	0.2	yes
Silver	ug/L	0.026	-0.02	0.10	yes
Strontium	ug/L	0.126	-1	1	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Total - Continued

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Thallium	ug/L	0	-0.05	0.05	yes
Tin	ug/L	0.172	-1	1	yes
Titanium	ug/L	0.07	-0.5	0.5	yes
Uranium	ug/L	0.003	-0.5	0.5	yes
Vanadium	ug/L	0.044	-0.1	0.1	yes
Zinc	ug/L	0.549	-0	1	yes
Zirconium	ug/L	0.095	-1	1	yes

Date Acquired: August 25, 2011

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Aluminum	mg/L	2.70	2.53	15	0.03	yes
Calcium	mg/L	118	118	15	0.6	yes
Iron	mg/L	2.83	2.46	15	0.20	yes
Magnesium	mg/L	69.9	68.9	15	0.4	yes
Manganese	mg/L	0.384	0.376	15	0.010	yes
Potassium	mg/L	9.9	9.7	15	1.2	yes
Silicon	mg/L	7.91	7.90	15	0.10	yes
Sodium	mg/L	36.4	36.5	15	1.2	yes
Sulfur	mg/L	78.9	79.2	15	0.1	yes
Antimony	ug/L	<0.2	<0.2	15	0.4	yes
Arsenic	ug/L	0.8	0.4	15	0.4	yes
Barium	ug/L	71	75	15	2	yes
Beryllium	ug/L	<0.1	<0.1	15	0.2	yes
Bismuth	ug/L	<0.5	<0.5	15	1.1	yes
Boron	ug/L	6	5	15	4	yes
Cadmium	ug/L	0.03	0.03	15	0.02	yes
Chromium	ug/L	7.2	6.9	15	1.1	yes
Cobalt	ug/L	2.2	2.1	15	0.2	yes
Copper	ug/L	1	1	15	2	yes
Lead	ug/L	0.5	0.4	15	0.2	yes
Lithium	ug/L	5	5	15	2	yes
Molybdenum	ug/L	<1	<1	15	2	yes
Nickel	ug/L	5.7	5.7	15	1.1	yes
Selenium	ug/L	0.5	<0.2	15	0.4	yes
Silver	ug/L	0.05	0.02	15	0.22	yes
Strontium	ug/L	62	60	15	2	yes
Thallium	ug/L	<0.05	<0.05	15	0.11	yes
Tin	ug/L	<1	<1	15	2	yes
Titanium	ug/L	8.2	8.9	15	1.1	yes
Uranium	ug/L	<0.5	0.5	15	1.1	yes
Vanadium	ug/L	2.2	2.2	15	0.2	yes
Zinc	ug/L	3	5	15	2	yes
Zirconium	ug/L	<1	<1	15	2	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Total - Continued

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Date Acquired: August 25, 2011						
Control Sample	Units	Measured	Lower Limit	Upper Limit		Passed QC
Aluminum	mg/L	3.72	3.60	4.40		yes
Calcium	mg/L	46.6	46.1	54.5		yes
Iron	mg/L	1.91	1.83	2.19		yes
Magnesium	mg/L	18.9	18.1	22.1		yes
Manganese	mg/L	0.497	0.465	0.565		yes
Potassium	mg/L	47.2	45.8	55.8		yes
Silicon	mg/L	1.86	1.81	2.21		yes
Sodium	mg/L	48.5	45.9	56.0		yes
Sulfur	mg/L	9.1	8.9	10.9		yes
Antimony	ug/L	11.9	9.7	12.7		yes
Arsenic	ug/L	11.0	9.6	12.6		yes
Barium	ug/L	63	54	68		yes
Beryllium	ug/L	5.7	4.7	6.6		yes
Bismuth	ug/L	30.8	24.8	34.4		yes
Boron	ug/L	124	102	139		yes
Cadmium	ug/L	0.55	0.47	0.78		yes
Chromium	ug/L	31.4	27.3	35.1		yes
Cobalt	ug/L	6.3	5.7	7.3		yes
Copper	ug/L	59	53	67		yes
Lead	ug/L	6.3	5.2	7.1		yes
Lithium	ug/L	67	53	77		yes
Molybdenum	ug/L	60	53	66		yes
Nickel	ug/L	30.3	26.2	35.2		yes
Selenium	ug/L	10.7	8.5	12.1		yes
Silver	ug/L	6.31	5.39	7.13		yes
Strontium	ug/L	62	54	69		yes
Thallium	ug/L	3.22	2.67	3.69		yes
Tin	ug/L	62	52	64		yes
Titanium	ug/L	31.0	26.6	35.7		yes
Uranium	ug/L	31.3	25.7	36.3		yes
Vanadium	ug/L	6.2	5.1	7.2		yes
Zinc	ug/L	57	49	67		yes
Zirconium	ug/L	62	56	68		yes
Date Acquired: August 25, 2011						
Antimony	ug/L	40.7	36.8	42.6		yes
Arsenic	ug/L	43.7	37.7	44.7		yes
Barium	ug/L	199	184	209		yes
Beryllium	ug/L	20.9	17.4	22.2		yes
Bismuth	ug/L	99.1	85.6	104.8		yes
Boron	ug/L	422	343	436		yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Total - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Cadmium	ug/L	2.13	1.92	2.20	yes
Chromium	ug/L	96.6	92.2	105.8	yes
Cobalt	ug/L	20.6	19.2	22.6	yes
Copper	ug/L	201	176	207	yes
Lead	ug/L	20.6	18.6	21.8	yes
Lithium	ug/L	213	173	222	yes
Molybdenum	ug/L	199	181	205	yes
Nickel	ug/L	98.2	93.0	106.0	yes
Selenium	ug/L	40.6	36.1	42.9	yes
Silver	ug/L	21.4	19.69	22.11	yes
Strontium	ug/L	189	182	212	yes
Thallium	ug/L	10.4	9.57	11.23	yes
Tin	ug/L	201	176	206	yes
Titanium	ug/L	97.7	91.5	106.3	yes
Uranium	ug/L	97.6	86.3	105.3	yes
Vanadium	ug/L	19.5	17.0	20.4	yes
Zinc	ug/L	206	186	219	yes
Date Acquired: August 25, 2011					
Antimony	ug/L	12.2	10.8	13.2	yes
Arsenic	ug/L	13.0	10.8	13.2	yes
Barium	ug/L	60	54	66	yes
Beryllium	ug/L	5.9	5.4	6.6	yes
Bismuth	ug/L	31.8	27.0	33.0	yes
Boron	ug/L	126	108	132	yes
Cadmium	ug/L	0.60	0.54	0.66	yes
Chromium	ug/L	30.7	27.0	33.0	yes
Cobalt	ug/L	6.2	5.4	6.6	yes
Copper	ug/L	62	54	66	yes
Lead	ug/L	6.3	5.4	6.6	yes
Lithium	ug/L	65	54	66	yes
Molybdenum	ug/L	60	54	66	yes
Nickel	ug/L	30.7	27.0	33.0	yes
Selenium	ug/L	12.1	10.8	13.2	yes
Silver	ug/L	6.57	5.40	6.60	yes
Strontium	ug/L	63	54	66	yes
Thallium	ug/L	3.22	0.00	6.00	yes
Tin	ug/L	61	54	66	yes
Titanium	ug/L	30.4	27.0	33.0	yes
Uranium	ug/L	31.6	27.0	33.0	yes
Vanadium	ug/L	6.0	5.4	6.6	yes
Zinc	ug/L	63	54	66	yes
Zirconium	ug/L	62	54	66	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Total - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Date Acquired: August 25, 2011					
Antimony	ug/L	2.1	1.8	2.2	yes
Arsenic	ug/L	1.9	1.8	2.3	yes
Barium	ug/L	10	9	11	yes
Beryllium	ug/L	1	0.8	1.1	yes
Bismuth	ug/L	5.3	4.6	5.7	yes
Boron	ug/L	22	17	23	yes
Cadmium	ug/L	0.10	0.08	0.11	yes
Chromium	ug/L	5.0	4.6	5.4	yes
Cobalt	ug/L	1.0	0.9	1.1	yes
Copper	ug/L	10	9	11	yes
Lead	ug/L	1.0	0.9	1.1	yes
Lithium	ug/L	11	9	11	yes
Molybdenum	ug/L	10	9	11	yes
Nickel	ug/L	5.0	4.5	5.5	yes
Selenium	ug/L	2.2	1.6	2.2	yes
Silver	ug/L	1.06	0.97	1.13	yes
Strontium	ug/L	10	10	11	yes
Thallium	ug/L	0.54	0.48	0.57	yes
Tin	ug/L	10	9	11	yes
Titanium	ug/L	5.2	4.5	5.4	yes
Uranium	ug/L	5.3	4.7	5.7	yes
Vanadium	ug/L	1.0	0.9	1.2	yes
Zinc	ug/L	11	9	11	yes
Zirconium	ug/L	10	10	11	yes
Date Acquired: August 25, 2011					
Aluminum	mg/L	19.3	17.99	22.01	yes
Calcium	mg/L	237	230.0	257.6	yes
Iron	mg/L	9.39	9.07	10.15	yes
Magnesium	mg/L	97.8	92.8	104.7	yes
Manganese	mg/L	2.26	2.260	2.560	yes
Potassium	mg/L	247	232.2	259.9	yes
Silicon	mg/L	9.74	9.35	10.43	yes
Sodium	mg/L	246	226.8	267.4	yes
Sulfur	mg/L	146	136.5	166.3	yes
Date Acquired: August 25, 2011					
Aluminum	mg/L	4.14	3.60	4.40	yes
Calcium	mg/L	52.1	45.0	55.0	yes
Iron	mg/L	2.11	1.80	2.20	yes
Magnesium	mg/L	21.1	18.0	22.0	yes
Manganese	mg/L	0.505	0.449	0.551	yes
Potassium	mg/L	52.7	45.0	55.0	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Metals Total - Continued

Control Sample	Units	Measured	Lower Limit	Upper Limit	Passed QC
Silicon	mg/L	2.11	1.80	2.20	yes
Sodium	mg/L	53.5	45.0	55.0	yes
Sulfur	mg/L	10.2	9.0	11.0	yes
Date Acquired: August 25, 2011					
Aluminum	mg/L	0.40	0.36	0.44	yes
Calcium	mg/L	5.1	4.6	5.6	yes
Iron	mg/L	0.20	0.18	0.22	yes
Magnesium	mg/L	2.0	1.8	2.2	yes
Manganese	mg/L	0.050	0.046	0.056	yes
Potassium	mg/L	5.0	4.5	5.5	yes
Silicon	mg/L	0.20	0.18	0.22	yes
Sodium	mg/L	5.2	4.7	5.5	yes
Sulfur	mg/L	3.0	2.8	3.2	yes
Date Acquired: August 25, 2011					

Mono-Aromatic Hydrocarbons - Soil

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Benzene	ng	102.40	85	115	yes
Toluene	ng	103.20	85	115	yes
Ethylbenzene	ng	104.40	85	115	yes
Total Xylenes (m,p,o)	ng	100.67	85	115	yes
Styrene	ng	91.80	85	115	yes
Date Acquired: August 24, 2011					

Purgeable Hydrocarbons - Water

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Total Hydrocarbon (C6-	ng	0	-0.02	0.02	yes
Date Acquired: August 29, 2011					

Volatile Petroleum Hydrocarbons - Soil

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
F1 C6-C10	ng	112.00	80	120	yes
Date Acquired: August 24, 2011					

Extractable Hydrocarbons (C40) - Water

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Total C11-C40+	ug/mL	0	-0.1	0.1	yes
Date Acquired: August 24, 2011					

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
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Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Extractable Hydrocarbons (C40) - Water -

Continued

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Total C11-C40+	ug/mL	101.89	80	120	yes
Date Acquired: August 24, 2011					

Extractable Petroleum Hydrocarbons -

Soil

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
F2c C10-C16	ug/mL	0	-10	10	yes
F3c C16-C34	ug/mL	0	-30	30	yes
F4c C34-C50	ug/mL	0	-20	20	yes
F4HTGCc C34-C50+	ug/mL	0	-20	20	yes

Date Acquired: August 24, 2011

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
F2c C10-C16	ug/mL	96.22	85	115	yes
F3c C16-C34	ug/mL	97.24	85	115	yes
F4c C34-C50	ug/mL	94.52	85	115	yes
F4HTGCc C34-C50+	ug/mL	94.53	85	115	yes

Date Acquired: August 24, 2011

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
F2c C10-C16	mg/kg	79	90	20	0	yes
F3c C16-C34	mg/kg	94	106	20	0	yes
F4c C34-C50	mg/kg	87	95	20	0	yes
F4HTGCc C34-C50+	mg/kg	88	98	20	0	yes

Date Acquired: August 24, 2011

Matrix Spike	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
F2c C10-C16	mg/kg	79	65	135	yes
F3c C16-C34	mg/kg	94	65	135	yes
F4c C34-C50	mg/kg	87	65	135	yes
F4HTGCc C34-C50+	mg/kg	89	65	135	yes

Date Acquired: August 24, 2011

Polychlorinated Biphenyls - Soil

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Aroclor 1016	ug/mL	0	-0.3	0.3	yes
Aroclor 1221	ug/mL	0	-0.3	0.3	yes
Aroclor 1232	ug/mL	0	-0.3	0.3	yes
Aroclor 1242	ug/mL	0	-0.3	0.3	yes
Aroclor 1248	ug/mL	0	-0.3	0.3	yes
Aroclor 1254	ug/mL	0	-0.3	0.3	yes

Quality Control

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Polychlorinated Biphenyls - Soil -

Continued

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Aroclor 1260	ug/mL	0	-0.3	0.3	yes
Aroclor 1262	ug/mL	0	-0.3	0.3	yes
Aroclor 1268	ug/mL	0	-0.3	0.3	yes
Date Acquired: August 25, 2011					

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Aroclor 1254	ug/mL	90.00	70	130	yes
Date Acquired: August 25, 2011					

Replicates	Units	Replicate 1	Replicate 2	% RSD Criteria	Absolute Criteria	Passed QC
Aroclor 1016	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1221	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1232	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1242	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1248	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1254	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1260	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1262	mg/kg	<0.1	<0.1	15	0.2	yes
Aroclor 1268	mg/kg	<0.1	<0.1	15	0.2	yes
Date Acquired: August 25, 2011						

Matrix Spike	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Aroclor 1254	mg/kg	104	10	190	yes
Date Acquired: August 25, 2011					

Polychlorinated Biphenyls - Soil -

Surrogate

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Decachlorobiphenyl	%	95.8638	10	190	yes
Date Acquired: August 25, 2011					

Polychlorinated Biphenyls - Water

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Aroclor 1016	ug/mL	0	-0.3	0.3	yes
Aroclor 1221	ug/mL	0	-0.3	0.3	yes
Aroclor 1232	ug/mL	0	-0.3	0.3	yes
Aroclor 1242	ug/mL	0	-0.3	0.3	yes
Aroclor 1248	ug/mL	0	-0.3	0.3	yes
Aroclor 1254	ug/mL	0	-0.3	0.3	yes
Aroclor 1260	ug/mL	0	-0.3	0.3	yes
Aroclor 1262	ug/mL	0	-0.3	0.3	yes

Quality Control

Bill To:	Sila Remediation Inc.	Project:		Lot ID:	822134
Report To:	EGE	ID:	CD 9229	Control Number:	A126853
	511 Pepperloaf Cres.	Name:	Cam-4 -DLC	Date Received:	Aug 24, 2011
	Winnipeg, MB, Canada	Location:	Pelly Bay	Date Reported:	Sep 1, 2011
	R3R 1E6	LSD:		Report Number:	1464165
Attn:	A Passalis	P.O.:			
Sampled By:		Acct code:			
Company:	EGE				

Polychlorinated Biphenyls - Water -

Continued

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Aroclor 1268	ug/mL	0	-0.3	0.3	yes
Date Acquired: August 25, 2011					

Calibration Check	Units	% Recovery	Lower Limit	Upper Limit	Passed QC
Aroclor 1254	ug/mL	90.00	80	120	yes
Date Acquired: August 25, 2011					

Polychlorinated Biphenyls - Water -

Surrogate

Blanks	Units	Measured	Lower Limit	Upper Limit	Passed QC
Decachlorobiphenyl	%	76.3708	10	190	yes
Date Acquired: August 25, 2011					

Methodology and Notes

Bill To: Sila Remediation Inc.	Project:	Lot ID: 822134
Report To: EGE	ID: CD 9229	Control Number: A126853
511 Pepperloaf Cres.	Name: Cam-4 -DLC	Date Received: Aug 24, 2011
Winnipeg, MB, Canada	Location: Pelly Bay	Date Reported: Sep 1, 2011
R3R 1E6	LSD:	Report Number: 1464165
Attn: A Passalis	P.O.:	
Sampled By:	Acct code:	
Company: EGE		

Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
BTEX-CCME - Soil	CCME	* Reference Method for Canada-Wide Standard for PHC in Soil, CWS PHCS TIER 1	24-Aug-11	Exova Calgary
BTEX-TPH - Water	US EPA	* US EPA method, 8260B/5030B	29-Aug-11	Exova Calgary
Mercury (Hot Block) in Soil	US EPA	* Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	25-Aug-11	Exova Edmonton
Metals ICP-MS (Hot Block) in soil	SW-846	* Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B	25-Aug-11	Exova Edmonton
Metals ICP-MS (Total) in water	APHA/USEPA	* Metals By Inductively Coupled Plasma/Mass Spectrometry, APHA 3125 B / USEPA 200.8	25-Aug-11	Exova Edmonton
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	25-Aug-11	Exova Edmonton
PCB - Soil	US EPA	* Polychlorinated Biphenyls (PCBs) by Gas Chromatography, 8082A	25-Aug-11	Exova Calgary
PCB - Water	US EPA	* Polychlorinated Biphenyls (PCBs) by Gas Chromatography, 8082A	25-Aug-11	Exova Calgary
TEH - Water	MMCA	* Petroleum Hydrocarbons in water, A108.0	24-Aug-11	Exova Calgary
TEH-CCME-Soil (Shake)	CCME	* Reference Method for Canada-Wide Standard for PHC in Soil, CWS PHCS TIER 1	24-Aug-11	Exova Calgary

* Reference Method Modified

References

Alta. Env. Method	Alberta Environment Method
APHA	Standard Methods for the Examination of Water and Wastewater
CCME	Canadian Council of Ministers of the Environment
SW-846	Test Methods for Evaluating Solid Waste
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Analysis for total purgeable hydrocarbons (C6-10) was not performed on sample 7 because the sample was completely used up for PCB and total extractable hydrocarbon analysis.

Methodology and Notes

Bill To:	Sila Remediation Inc.	Project:		Lot ID:	822134
Report To:	EGE	ID:	CD 9229	Control Number:	A126853
	511 Pepperloaf Cres.	Name:	Cam-4 -DLC	Date Received:	Aug 24, 2011
	Winnipeg, MB, Canada	Location:	Pelly Bay	Date Reported:	Sep 1, 2011
	R3R 1E6	LSD:		Report Number:	1464165
Attn:	A Passalis	P.O.:			
Sampled By:		Acct code:			
Company:	EGE				

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

Analytical Report

Bill To:	Sila Remediation Inc.	Project:		Lot ID:	822134
Report To:	EGE	ID:	CD 9229	Control Number:	A126853
	511 Pepperloaf Cres.	Name:	Cam-4 -DLC	Date Received:	Aug 24, 2011
	Winnipeg, MB, Canada	Location:	Pelly Bay	Date Reported:	Sep 1, 2011
	R3R 1E6	LSD:		Report Number:	1464165
Attn:	A Passalis	P.O.:			
Sampled By:		Acct code:			
Company:	EGE				

Petroleum Hydrocarbons in Soil

Batch Notes

1. The method used complies with the Reference Method for the Canada Wide Standards for Petroleum Hydrocarbons in Soil - Tier 1, April 2001, including Addendum 1, and is accredited for use in Exova.
2. Modifications of the method: See Notes and Methodology for nonconformances (if applicable).
3. Qualifications on results: See Notes and Methodology for nonconformances (if applicable).
4. Silica gel treatment is performed for fractions F2, F3, F4.
5. F1-BTEX: BTEX has been subtracted from the F1 fraction.
6. If analyzed, naphthalene has been subtracted from fraction F2 and selected PAHs have been subtracted from fraction F3.
7. F4HTGC is reported when more than 5% of the total carbon envelope elutes past C₅₀.
8. Exova does not routinely report Gravimetric Heavy Hydrocarbons (F4G or F4G-sg), F4HTGC through extended range high temperature GC is reported instead.
9. When both F4(C₃₄-C₅₀) and F4HTGC are reported, F4HTGC is the final F4 that is to be used for interpreting the CWS.
10. Quality criteria met for the batch: Data is reported in Quality Control Section of report (if requested).
 - nC₆ and nC₁₀ response factors (RF) are within 30% of RF for toluene
 - nC₁₀, nC₁₆ and nC₃₄ RFs are within 10% of each other
 - nC₅₀ RF is within 30% of the average RF for nC₁₀+nC₁₆+nC₃₄
 - linearity is within 15% for each of the calibrated carbon ranges
11. Batch data for analytical quality control are available on request.
12. Extraction and analysis holding times were met: See Notes and Methodology for nonconformances (if applicable).

Approved by:



Randy Neumann, BSc
General Manager



Sample Information Sheet

on of this form is required in order to proceed with analysis
or your nearest Bodycote location and proper sampling protocol

Billing Address:

Company: **SILA REMEDIATION**
Address: **4495 WILFRID HAMEL BLVD**
SUITE 200, QUEBEC, QUEBEC
Attention: **J.P. PELLETIER**
Phone: **418-653-4422**
Fax:
Cell: **418-569-9677**
e-mail: **jppelletier@brogenie-env.com**

QA/QC Report ☒

Report Results:

Fax ☐
Mail ☒
Courier ☐
e-mail ☒
e-Service ☐

Company: **EZE ENGINEERING**
Address:

Attention: **A. PASSALIS**
Phone: **204-791-4938**
Fax:
Cell:
e-mail: **apassalis@mts.net**

Copy of Invoice:

Mail Invoice to this
address for approval ☐

Report Results:

Fax ☐
Mail ☐
Courier ☐
e-mail ☒
e-Service ☐

Information to be included on Report and Invoice

Project ID: **CD9229**
Project Name: **CAM-4 - DLC**
Project Location: **Pelly Bay**
Legal Location:
PO#:
Proj. Acct. Code:
Agreement ID:

Rush Please contact the laboratory
to confirm rush dates and times
before submitting samples.

Upon filling out this section, client accepts that
surcharges will be attached to this analysis

RUSH All analysis As indicated
required on: ☐ or ☐

Date Required: _____
Signature: _____
Bodycote Authorization: _____

Sample Custody (Please Print)

Sampled by:
Company **EZE** Signature **[Signature]**

I authorize Bodycote to proceed with the
work indicated on this form:

Date: **2/28/11** Initial: **[Initials]**
Received by: **First Air Cargo** Sample Temp: _____
Waybill # **6.5** Date **2453523**
Company **ADG 24 AM 10:14** Time **9702**

Special Instructions / Comments

TOTAL METALS - Cu, Ni, Co, Cr, Cd, Pb,
Hg, Zn, As ONLY.

FOR LAB USE ONLY

Condition of containers /
coolers upon arrival at lab

Please indicate which regulations you are required to meet:

☐ Check here if Bodycote is required
to report results directly to a regulatory body
(Please include contact information)
☐ Check here if you're testing POTABLE
WATER for **HUMAN CONSUMPTION.**

	Sample Identification	Location	Depth			Date/Time Sampled	Matrix	Sampling Method	Number of Containers	Enter tests above (✓ relevant samples below)									
			IN	CM	M					PCB'S	ARM FI-PE	METALS	USE LIST	T. METALS	TPH				
1	C411-11WA		-			18/8/11	S	S	3	X	X	X							
2	C411-9WA		-			18/8/11			3	X	X	X							
3	C411-14WA		-			19/8/11			3	X	X	X							
4	C411-21WB		-			19/8/11			3	X	X	X							
5	C411-18WA		-			19/8/11			3	X	X	X							
6			-																
7	C411-8W		-			18/8/11	W		4	X	X			X	X				
8	C411-15W		-			19/8/11	W		3	X	X			X	X				
9			-																
10			-																
11			-																
12			-																
13			-																
14			-																
15			-																

NOTE: All hazardous samples must be labeled according to WHMIS guidelines.

Confirmation of Service Request

Lot ID: **822134**

Number of Samples: 7

Printed Date: Aug 28, 2011

Please verify the following service request. If you have corrections or questions, please contact Client Services.

Main Contact:	Primary Administrator	Invoice Delivery To:	Bill Paid by:
Attn: A Passalis	Attn: A Passalis	Attn: Accounts Payable	Attn: Accounts Payable
EGE	EGE	Sila Remediation Inc.	Sila Remediation Inc.
511 Pepperloaf Cres.	511 Pepperloaf Cres.	200,4495 Boul. Wilfrid-Hamel	200,4495 Boul. Wilfrid-Hamel
Winnipeg, MB R3R 1E6	Winnipeg, MB R3R 1E6	Quebec City, QC G1P 2J7	Quebec City, QC G1P 2J7
Phone: (204) 837-6473	Phone: (204) 837-6473	Phone: (418) 653-4422	Phone: (418) 653-4422
Fax: (204) 837-6473	Fax: (204) 837-6473	Fax: (418) 653-3583	Fax: (418) 653-3583

Agreement Id	90921	Well Name	
Project Id	CD 9229	Well Location	
Project Name	Cam-4 -DLC	Field	
Project Location	Pelly Bay	Formation	
Project Legal		Elevation KB	
PO#		Elevation GR	
Proj. Acct. Code		Drilling License	

Control Id	A126853	Sampled By	
Report Due	Sep 01, 2011	Sampling Company	EGE
Received Date	Aug 24, 2011	Est. Disposal Date	Oct 01, 2011

Service Information

Sample Id		Service	Service Name
1			
3803465		05	Drying and Grinding
		PCB2	B PCBs in soil or sediments
		TT44	CCME metals in soil
		DISP	Disposal of Soil/Water Sample
		CCMEC	B CCME Petroleum Hydrocarbons in Soil by Cold Extraction
Date Sampled	08-18-2011		
Priority	Normal		
Sample Description	C411-11WA		

Sample Id		Service	Service Name
2			
3803466		05	Drying and Grinding
		PCB2	B PCBs in soil or sediments
		TT44	CCME metals in soil
		DISP	Disposal of Soil/Water Sample
		CCMEC	B CCME Petroleum Hydrocarbons in Soil by Cold Extraction
Date Sampled	08-18-2011		
Priority	Normal		
Sample Description	C411-7WA		

Sample Id		Service	Service Name
3			
3803467		05	Drying and Grinding
		PCB2	B PCBs in soil or sediments
		TT44	CCME metals in soil
		DISP	Disposal of Soil/Water Sample
		CCMEC	B CCME Petroleum Hydrocarbons in Soil by Cold Extraction
Date Sampled	08-19-2011		
Priority	Normal		
Sample Description	C411-14WA		

Sample Id		Service	Service Name
4			
3803468		05	Drying and Grinding
		PCB2	B PCBs in soil or sediments
		TT44	CCME metals in soil
		DISP	Disposal of Soil/Water Sample
		CCMEC	B CCME Petroleum Hydrocarbons in Soil by Cold Extraction
Date Sampled	08-19-2011		
Priority	Normal		
Sample Description	C411-21WB		

Confirmation of Service Request

Lot ID: **822134**
Number of Samples: 7
Printed Date: Aug 28, 2011

Please verify the following service request. If you have corrections or questions, please contact Client Services.

Sample Id	5 3803469	Service	Service Name
Date Sampled	08-19-2011	05	Drying and Grinding
Priority	Normal	PCB2	B PCBs in soil or sediments
Sample Description	C411-18WA	TT44	CCME metals in soil
		DISP	Disposal of Soil/Water Sample
		CCMEC	B CCME Petroleum Hydrocarbons in Soil by Cold Extraction
Sample Id	6 3803470	Service	Service Name
Date Sampled	08-18-2011	TW22	Total metals - water
Priority	Normal	PCB3	B PCBs in water
Sample Description	C411-8W	TPEW	B TVH and TEH in water
		DISP	Disposal of Soil/Water Sample
Sample Id	7 3803471	Service	Service Name
Date Sampled	08-19-2011	TW22	Total metals - water
Priority	Normal	PCB3	B PCBs in water
Sample Description	C411-15W	TPEW	B TVH and TEH in water
		DISP	Disposal of Soil/Water Sample

Other Billable Services	Service	Service Name	Quantity
-------------------------	---------	--------------	----------

Sample Service Count

Service Name	Service Code	Service Quantity
CCME metals in soil	TT44	5
CCME Petroleum Hydrocarbons in Soil by Cold Extraction	CCMEC	5
Disposal of Soil/Water Sample	DISP	7
Drying and Grinding	05	5
PCBs in soil or sediments	PCB2	5
PCBs in water	PCB3	2
Total metals - water	TW22	2
TVH and TEH in water	TPEW	2

Notes

If required for invoice approval, please sign and return to the address indicated at the top of the page.

(Signature) _____

Confirmation of Service Request

Lot ID: **822134**
Number of Samples: 7
Printed Date: Aug 28, 2011

Please verify the following service request. If you have corrections or questions, please contact Client Services.

Report Delivery Plan

Contact	Company	Address						
JP Pelletiere	Sila Remediation Inc.	511 Pepperloaf Cres. Winnipeg, MB R3R 1E6 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: jppelletier@biogenie-env.com						
<table><tr><th>Copies</th><th>Delivery</th><th>Format</th></tr><tr><td>1</td><td>Email - Merge Reports</td><td>PDF</td></tr></table>	Copies	Delivery	Format	1	Email - Merge Reports	PDF		
Copies	Delivery	Format						
1	Email - Merge Reports	PDF						
A Passalis	EGE	511 Pepperloaf Cres. Winnipeg, MB R3R 1E6 Phone: (204) 837-6473 Fax: (204) 837-6473 Email: apassalis@mts.net						
<table><tr><th>Copies</th><th>Delivery</th><th>Format</th></tr><tr><td>1</td><td>Email - Merge Reports</td><td>PDF</td></tr></table>	Copies	Delivery	Format	1	Email - Merge Reports	PDF		
Copies	Delivery	Format						
1	Email - Merge Reports	PDF						

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT

ANNEX 2

QA/QC

QUALITY ASSURANCE / QUALITY CONTROL

The 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 ensure that sampling data and analysis results are complete, precise, exact, representative and comparable. The review consisted in evaluating sample collection/handling methodology, general laboratory comments, field (blind) duplicate samples, and inter-laboratory duplicate samples. Samples collected during the monitoring program were submitted to laboratories accredited by the Canadian Association for Environmental Analytical Laboratories (CAEAL).

All samples were collected following strict Biogenie sampling procedures. Samples were uniquely labelled and control was maintained through use of chain of custody forms. All samples were collected in laboratory-supplied containers and preserved in insulated coolers. Appropriate QA/QC procedures were adhered to at all times.

Blind duplicate samples were submitted to Maxxam for intra-laboratory analysis, with additional duplicate samples sent to Exova for interlaboratory comparison purposes. Both laboratories are located in Edmonton, Alberta.

The relative percent difference (RPD) is used to evaluate the sample result's variability. Average RPD values of less than 100 % for soil samples and 30 % for groundwater samples are considered an indication of acceptable duplicate sample variability. For groundwater samples, an RPD of greater than 30 % may reflect difference in sample turbidity or variance in the sample procedures. Individual RPD values greater than 50 % are not considered to reflect acceptable variability. RPD values are not used to evaluate those compounds that are present at concentrations less than five times the method detection limit (MDL).

SOIL SAMPLES

In the case of soil samples, five blind duplicate samples were submitted for intra- and inter-laboratory comparisons. Review of results indicated relatively minor differences in concentrations within the Maxxam and Exova metals results when duplicates were compared, and considered to be within acceptable limits. It should be noted that many individual parameter concentrations were less than five times the MDL. The most elevated metal RPD values were reported for chromium (77% and 88%) and nickel (80 %).

Minor differences in TPH concentrations were also noted between the Maxxam and Exova results when duplicates were compared, with the exception of one sample which slightly exceeded the acceptable RPD limit (116 % and 105 %). All of PCB concentrations were below the MDL in the intra- and inter laboratory samples. The soil chemical analysis results and the evaluation of analytical data for the 2011 QA/QC samples are presented in Table LI and LII below.

Overall, the soil sample results are coherent and within the same range of results for intra- and inter-laboratory samples. In general, the reliability of soil analytical results is considered as good.

Table I: Soil Chemical Analysis Results – QA/QC Samples

Lab ID		822134-1	822134-2	822134-3	822134-4	822134-5	Nominal Detection Limit
Sample Name		C411-11WA	C411-7WA	C411-14WA	C411-21WA	C411-18WA	
Sampling Date (yyyy-mm-dd)		2011-08-18	2011-08-18	2011-08-19	2011-08-19	2011-08-19	
Parameters	Unit						
Mercury	mg/kg	<0.01	<0.01	0.01	<0.01	<0.01	0.01
Arsenic - Total	mg/kg	1.5	0.9	3.8	1.6	1.4	0.2
Cadmium	mg/kg	0.05	0.02	0.07	0.04	0.04	0.01
Chromium	mg/kg	26.2	22.5	31.1	15.4	16.7	0.1
Cobalt	mg/kg	7.7	5.8	9.1	4.8	4.9	0.1
Copper	mg/kg	11	6	13	8	8	1
Lead	mg/kg	11.2	4.5	13.7	11.5	6.3	0.1
Nickel	mg/kg	13.7	19.4	24.3	14.8	14	0.5
Zinc	mg/kg	50	26	50	42	32	1
PHC(F1)	mg/kg	<4	<4	<4	<4	<4	4
PHC(F2)	mg/kg	<10	<10	<10	<10	<10	10
PHC(F3)	mg/kg	3,420	<30	98	<30	<30	30
Total PCBs	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1	0.1

PHC (F1): Petroleum hydrocarbon C₆ to C₁₀, does not include BTEX fractions

PHC (F2): Petroleum hydrocarbon C_{>10} to C₁₆

PHC (F3): Petroleum hydrocarbon C_{>16} to C₃₄

S/P/CD/CAM-3/2011/T/11-C1-METSOIL-QA/QC-Soil.xls

Table II: Water Chemical Analysis Results – QA/QC Samples

Sample ID		822134-6	822134-7	Nominal Detection Limit
Sample Name		C411-8W	C411-15W	
Sampling Date (yyyy-mm-dd)		2011-08-18	2011-08-19	
Parameters	Unit			
Aluminum	mg/L	-	1.93	0.02
Antimony	mg/L	-	0.0005	0.0002
Arsenic - Total	mg/L	0.0030	0.0030	0.0002
Barium	mg/L	-	0.111	0.001
Beryllium	mg/L	-	0.0001	0.0001
Bismuth	mg/L	-	<0.0005	0.0005
Boron	mg/L	-	0.216	0.002
Cadmium	mg/L	0.00014	0.00006	0.00001
Calcium	mg/L	-	110	0.2
Chromium	mg/L	0.0074	0.0066	0.0005
Cobalt	mg/L	0.0030	0.0036	0.0001
Copper	mg/L	0.006	0.003	0.001
Iron	mg/L	-	5.48	0.05
Lead	mg/L	0.0035	0.0014	0.0001
Lithium	mg/L	-	0.004	0.001
Magnesium	mg/L	-	16.4	0.1
Manganese	mg/L	-	2.42	0.005
Molybdenum	mg/L	-	0.002	0.001
Nickel	mg/L	0.0440	0.106	0.005
Potassium	mg/L	-	9.6	0.4
Silicon	mg/L	-	6.81	0.05
Selenium - Total	mg/L	-	<0.0002	0.0002
Silver	mg/L	-	0.00005	0.00001
Sodium	mg/L	-	42.6	0.4
Strontium	mg/L	-	0.286	0.001
Sulphur	mg/L	-	7.3	0.3
Thallium - Total	mg/L	-	<0.00005	0.00005
Tin	mg/L	-	<0.001	0.001
Titanium	mg/L	-	0.176	0.0005
Uranium - Total	mg/L	-	0.0280	0.0005
Vanadium	mg/L	-	0.0073	0.0001
Zinc	mg/L	0.025	0.302	0.001
Zirconium	mg/L	-	0.005	0.001
PCBs	mg/L	<0.1	<0.1	0.1
Extractable Carbon C ₁₁ -C ₄₀₊	mg/L	1.2	8.1	0.11

S/MO/Tables/AB/Metals-GW.xls

GROUNDWATER SAMPLES

In the case of groundwater samples, two blind duplicate samples were submitted for intra- and interlaboratory comparisons. The PCB duplicate results were below the MDL in both intra- and interlab duplicate comparisons.

A comparison of intra-laboratory results for total metals indicates RPDs are outside acceptable limits for select parameters in intralaboratory duplicate comparisons for zinc (35 %) and mercury (59 %), and in interlaboratory duplicate comparison for chromium (74 %), cobalt (108 %) and nickel (161 %). RPDs for PHC were outside acceptable limits in one intra- and interlaboratory duplicate comparison, however a layer of free product was observed at this well location.

Results from one field blank indicated trace concentrations of copper, lead, zinc and mercury with all other metal parameters less than the method detection limit (MDL).

Overall, the groundwater sample results are coherent and within the same range of results for intra- and inter-laboratory samples. The laboratory comparisons for TPH and PCBs in groundwater are coherent, whereas the intra- and inter-lab comparisons for a select number of total metals were outside the acceptable range, suggesting possible variances in the samples' turbidity.

COLLECTION OF LANDFILL MONITORING DATA – FINAL REPORT, 2011
CAM-4 DISTANT EARLY WARNING (DEW) LINE SITE, NUNAVUT

ANNEX 3

Field Notes and COC's

(46)

CAM-4 PELU BAY
Sunny, 30°C E, 12°C.
3-3⁰⁰ TRAVEL

download dataloggers e TIER II
US LF
LS LF
- retrieve data logger from VT-1
to check battery status

630-7⁰⁰ TRAVEL BACK TO P.B.

(47)

CAM-4 Clear, Sunny, 10°C, 20-30°C
830-915 TRAVEL

MW-8 WP 88 2'φ 2.8 m. N
SLUP = 1.02
R 1.035 F/P-φ
bott 2.18

8WA 0-15 (3) BROWN SAND,
B 40-50 (3) WITH GRAVEL, DAM
WETEC. 4 n
SLHC-0502R

T 4.9/4.2/4.3 CLEAR,
COND 1545/1489/481
PH 9.34/8.54/8.24 3x1.2
TURN 15/24/30 6x500
BDWI + EXOVA 3x250
TOTAL 2.5 L.

MW-9 WP 89 4.0 m SSW
SLUP -0.32
Z 0.69 F/P-φ
bott 2.11

LEVEL

(48)

T. 3.5/3.5/3.4 C+C

Cond 1067/994/958

pH 12.6/12.3/12.3

Turb

3x500, 1x250

9WA 0-15 (3)

Brown sand

9WB 40-50 (3)

w/ gravel,
damp.

MW-5 WP 40

2.3m SE

slup 0.98

Σ 1.285

FIP - φ

bot. 3.13

SWA 0-15 (3)

Brown sand +

B 40-50 (3)

gravel, γ @ 40,
wg.

T. 4.3/2.2/2.9

C+C

Cond 763/777/772

pH 8.73/8.42/8.0

TOTAL

Turb 25/36/35

4°L

3x500, 1x250

(49)

MW-11 WP 91 3.3 E

slup 0.74-0.18 ~ 0.56

Σ 2.155 FIP - φ

bot. 3.55

11WA 0-15 (3) + BDI + EXOVA +
B 40-50 (3) (3) (3) ES
(2)

pH 7.86/7.60/7.51

Cond 715/698/689

CLEAN

T 3.6/2.9/3.2

TOTAL 3.0L

Turb 42, 56, 57

3x500, 1x250

L + brown sand, some gravel +
silt, damp

MW-13 WP 92, 2.1m NW

slup 0.74

Σ dry FIP - φ

bot. 2.47 ~

13WA 0-15 (3)

BROWN SAND.

13WB 40-50 (3)

TR GRAVEL, DAMP
+ CRUS

LEVEL

(50)

WP 94 - V-N NW 2 RIR RAS
095 PAN: N-SW

MW-12 WP 96 3.8m NW
SLUP 0.71-0.03 = 0.68
II 194 FIP = ϕ
Bott 2.18

* 12WA - 0-15
B - 35-45 - BLODS

2x 500 ONLY SL. YELLOW, FT. HC ODDOR
1x 250 LT BRN SILTY SAND
INSUFF SAMPLE DRY-DAMP

MW-10 WP 98 2.1m W-
SLUP 0.72-0.05 = 0.67
II dry FIP = ϕ
Bott 2.48

10WA 0-15 (3) LT BRN.
10WB 40-50 SAND-FG,
DRY, TRGRAVEL

CGA PAR. 10-SE From EQ MW-10

(51)

US NWLF

MW-3 WP 100
SLUP 0.85-0.16 = 0.69
II - FIP = 4.885
Bott 5.17 NO WATER
NOT SAMPLED, TRIPLE RISE PROBE

3WA 0-15 BROWN SAND +
B 40-50 SILT, tr gravel

MW-4 A/B WP 102
2.6m NE A - LABELED AS #27

A SLUP 0.65-0.16 = 0.49
II dry FIP = ϕ
Bott 4.09

B SLUP 0.66-0.12 = 0.54
II dry FIP = ϕ
Bott 2.14

4WA 0-15 Lt. brown sand
B 40-50 some silt +
gravel.

WP 101 PAN W-SE From N & LF

LEVEL

(52)

MW-2 WP 103. 2.3m SW
 SLP 0.76-0.16 = 0.60
 Z - 2.08 FIP - 4
 bott. 2.19, HC odour

2WA 0-15 (3) Brown F med gr
 B 40-50 (3) to gravel, dry damp

1x250 pl only, insuff. sample vol.

MW-6A (#24) WP 104 Lock Broken
 SLP 0.71-0.13 = 0.58
 Z - dry FIP = 0
 bott 1.91

MW-6B HC odour
 SLP 0.80-0.18 = 0.62
 Z 1.57 FIP - 0
 bott 2.28

GWA 0-15 (3) BRN SAND
 B 40-50 (3) F med gr
 Some gravel

(53)

T. 6.4/2.6/2.7 CTC
 Cond 456/455/442
 PH 7.16/6.92/6.78
 Turb 114, 152, 132.

TOTAL
 1.5L

3x500, 1x250

MW-1 Lock Broken WP 105 2.2m N
 SLP 0.73-0.19 = 0.54
 Z 2.205 FIP - 0
 bott. 2.29

1WA 0-15 LT BRN SAND
 B 40-50 F-m gr, some
 gravel/chis. dry-
 damp
 1x250 pl, insuff. sample vol.

MW-7A WP 106 Lock Broken
 SLP 0.72-0.13 = 0.59
 Z - FIP - 5.033
 bott. 5.06 NO WATER

LEVEL

MW-70

3.1 m. NW

SLUP 0.81-0.10-0.71

Σ 0.90 FIP = ϕ

both 1.92

WITH
BRN ST+GRV.
W.G. DAMP
X0.5

FWA 0-15 +BDZ

B 40-50

- NO ODOUR

T 5.3/3.3/3.4 Grey/born turb.

Cond 714/686/660

pH 8.92/8.91/8.94

TURB 71000

TOTAL 2.12

3x500, 1x250

Bmw1

UP 507

3.3m NNW-

SLUP 75-0.08-0.67

Σ 2.701

FIP = 2.505
2.701

both 2.89

LTBRN

Bmw1A 0-15 (3)

B 40-50 (3)

STG
W.G.
DRY

FIP IN BOTTLES 1x250
1x300

(55)

2 LARGE HOLES IN TIRE ON RINO

UNABLE TO PATCH, LEAVE 2 CUSDLERS/

MULTIMETER IN CASIN ON BORROW LAKE

REMAINING WELLS

MW-16

S. NNWLF

MW-14

TIER II DF.

15

Bmw-3

Mw-21

LS NNWLF

22

23

MW-17

LSLF

-18

-19

-20

Bmw-4

/12

LEVEL

(56)

AUGUST 19, 2011.

30-40 km/h E

845-915 TRAVEL

MW-16

WP 109

35 m NE.

SLUP 0.63 - 0.08 - 0.55

Z 2.84

F/P = ϕ

bott 2.87

strong HC odour.

16 WA 0-15 (3) BRN/LGY SAND

B 40-50 (3) WITH GRAVEL, TR SALT

MW-15

WP 110

1.5 NE

SLUP 0.67 - 0.17 - 0.54

Z 0.60

F/P = ϕ

bott 2.45

15 WA 0-15 (3)

brn sand, w

B 40-50 (3)

gravel, damp-wet, tr. salt

T 5.2 / 3.0 / 2.9

sewerage type

COND 714 / 722 / 740

odour C+C.

PH 6.93 / 6.77 / 6.70

Turb 4.2 / 8.9 / 9.1

BDW2

6x500

2x12 AM

3x250 PL

Sunny 12°C, 80° km W.

(57)

MW-14A

WP 111

SLUP 0.58 - 0.05 - 0.53

Z 1.105

F/P = ϕ

bott 2.52

14 WA

0-15 (11) BD3

B 40-50 (3)

T 6.4 / 2.1 / 2.7

COND 600 / 634 / 641

PH 8.66 / 7.54 / 7.35

Turb 16 / 21 / 24

3x500, 1x250 PL

MW-14B

28 m SE

SLUP 0.63 - 0.08 - 0.55

Z dry F/P = ϕ

bott 4.30

B MW2

WP 112 NEVER SAMPLED

- NOT ON LIST, V - N1

LEVEL

(58)

BMW3 WP-113 2. m S
 SLUP 0.77-0.02 = 0.75
 D 1.07 F/P = 0
 bott 2.40

BMW3 A 0-15 (3)
 B 40-50 (3)

BRN med gr
 sand, damp
 fr-gravel

T 6.9/6.8/3.4
 Cond 413/350/419
 PH 8.94/8.94/8.71
 Turb 742, 71000, 71060
 3x500, 1x250 PL

Heavy siltation

TOTAL
 3:1 L

LSLF

MW-20 WP 114
 SLUP 0.77-0.1 = 0.67
 D 2.71 F/P = 0
 bott 3.03

20WA 0-15 (3)
 B 40-50 (3)

LT BRN.
 SAND, FINE GRAV.
 CLAY, TRSILT
 DRY

(59)

T 5.0/4.6/4.9 C+C
 Cond 834/819/830
 PH 9.21/7.87/7.67
 TURB 571, 764, 924

TOTAL
 1:1 L

3x500, 1x250

WP 115 PAN N-SW @ LSLF

MW-23 WP 116 2.1 m S
 SLUP 0.32-0.16 = 0.16
 D 1.79 F/P = 0
 bott 2.815

23WA 0-15 BRN SAND,
 B 40-50 some grav. med
 damp

T 7.8/3.26/2.50
 PH 8.38/8.14/7.96
 Cond 715/735/729
 Turb 8.1, 12.4, 16.8

TOTAL
 2:5 L

3x500, 1x250 PL

LEVEL

(60)

MW-22	WP: 117	2.3 ^M NW	
Slup	0.62-0.13 = 0.49		
Σ	2.28	FIP = ∅	
bot	2.55		
22 WA	0-15	LT BRN SAND, W GRAV. DRY.	
B	40-50	+CBLS	
T	64/3.5/2.8	C+C.	
COND	259/202/154		
pH	7.27/9.24/10.58	TOTAL	
Turb.	101, 146, 159	0.9L	
	3x500, 1x250 PL	2~S	
MW-21	WP: 118		
Slup	0.67-0.11 = 0.56		
Σ	2.58	FIP = ∅	
bot	2.90		
21 WA	0-15 (3)	Brn. Sand,	
BD4	B 40-50 (11)	fined, some gravel, dry	

(61)

T	63/48	C+C.	
COND	246/238	LIMITED Σ	
pH	12.02/11.23	TOTAL 0.7L	
Turb	105, 132		
	2x500, 1x250 PL		
Bmw4	WP 120		
Slup	0.73-0.11 = 0.63		
Σ	2.03	FIP = ∅	
bot	2.92		
Bmw4A	0-15 (3)	LT Brn sand	
B	40-50 (3)	fined, some grav. dry	
T	7.1/43/42	C+C	
COND	674/680/734		
pH	10.31/10.22/10.22		
Turb	92, 107, 121	TOTAL 2.1L	
	3x500, 1x250 PL		
WP	121	V-NNW @ MW-19	

LEVEL

(62)

MW-19 39ms. WP 122

Slup 0.70 - 0.05 = 0.65

X 0.77 FIP = ϕ

bott. 2.17

19WA 0-15 (3)

B 40-50 (3)

BEN SAND,

F.G. SOME SILT

X 0.45

T 7.1/3.4/3.2 SITUATION - BEN

Cond 939/1005/891

PH 8.71/8.03/7.69

TURB 881, 71000, 71000

TOTAL
3.02

MW-18 WP-123 4m W.

Slup 0.79 - 0.21 = 0.58

X 0.865 FIP = ϕ

bott. 2.21

18WA 0-15 (11)

B 40-50 (3)

BD5 X 0.4

BEN SAND

med gr. some
gravel

C+C

T 4.5/2.7/2.6

Cond 338/315/319

PH 8.55/7.70/7.21

Turb 18, 26, 31

3x500, 1x250pL

TOTAL-30
L

(63)

WP 125 PAN 5 - NNE from

STREAM W. OF LSLF

V-3

MW-17 WP 126 2.2m NW

Slup 0.78 - 0.04 = 0.74

X 1.71 FIP = ϕ

bott. 2.48

17WA 0-15 (3) dk brn sand +
B 40-50 (3) organics, damp,
some silt

T 4.5/3.1/3.0

Cond 405/420/415

PH 8.87/7.91/7.62

Turb 48, 56, 61

TOTAL
1.62

C4-3 WP 127

C4-3A 0-15

-3B 40-50

dk brn sand, w/
gravel, tr org/rocks

LEVEL

WP-128
C4-2A (3) FRACTURED BIR
B (3) W/ BIR SAND, TR SILT
C4-1A (3) WP 129 LT STON STG
B (3) 30-40 TR FINES, DRY
↳ PIECE OF STEEL ON E SIDE
STP
130 PAN SE - N FROM SW CRNR
131 V-SE @ SETTLEMENT ON S
SIDE OF WBE 100E UP
1.5 x .60 x 20-50 ↓ hole. FEAT D.
132 PAN NE - W FROM SE CRNR
133 V- NW @ EROS ON SLOPE
134 V SE " " 20-50 W
10-20 ↓ 3 SPOTS 2.5 m AREA
135 NE CRNR V- W @ ↑
PAN N-SE
136 1.5 x 0.5 x 0.4 ↓ ON SIDE V-E
137 V- NE/SE
138 DEPRESSOR 0.8 L x 0.2 U x 10 ↓
V-E
139 TOP OF SETT./EROS - 4 m L x 50 W x
10-20 ↓ V-SE

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140 MIN. EROS. 3 m L x 30 W x 5-10 ↓
V-SE
141 TOP OF EROS. - WASH B1 FINE MATL
V. NNE./SSW. → 142
20-60 W, 13 L, 5-15 ↓
143 N-TIP. PAN-SSW-E.
144 V-SE. FEAT C - SOME
145 V-NE ↗ V-E @ FEAT C
EROS./SETT. LONG TO E TOE
5-10 ↓, 20-30 W.
146 LIN DEPRESSION 2 m L, 30 W x 5-10 ↓
V-W.
147 V-W ALONG LIN DEPRESSION - TO W
TOE 10-15 W x 5 ↓
148 CAT TRACK METAL DEBRIS
SOME SETTLEMENT C.S. 1.0 W x 11 m L.
X 5-15 ↓

BD1 11WA
BD2 9WA
BD3 14WA
BD4 21WB
BD5 18WA

(66)

AUGUST 20, 2011. P. Cloudy -
15.25 km/h SE, 10°C - 14°C.

STATION NW/LE

- 150 V-SW/^{NE} ALONG S TOE, DRAINAGE
ALONG ROADWAY @ TOE 1 m.w.
151 EXTENDS DOWNSLOPE TO
BLDR FIELD
- 151 V-NW ALONG NE TOE -
NO V.P. PAN - N-S. FROM NE TOP
- 152 V-SE / WNW. e (202)
- 153 V-NNE @ ORANGE STAINING ON
SLOPE. ALSO MIN SETT. 1m below
SAME crest to E. 0.5 L x 15 x 5 V-NE
- 154 MIN DEPR. 30 x 30 x 10 V-NE
- 155 NE END OF STAINING - CHANNELS TO
50-20 W. @ TOE, V-SW. NO SEEP.
- 156 V-NE MINERALS, 4W UP TOE,
50W S-10 ↓
- 157 V-SW ALONG W TOE
- 158 PAN W-W ACROSS TOP FROM N CORNER
- 159 TYPE 1 MISSING ON COVER 5m x
1m W. // CREST. V-NE, POSS
SETTLEMENT UP TO 10 ↓

(67)

- 160 PAN SE-NW FROM W CORNER
- 161 V-SSW ALONG TOE
- 162 V-N / SE ALONG TOE, S CORNER
- 163 LIN. DEPR. @ CREST - SAME
FEET A 2.5m L x 40 x 5-10 ↓ V-SE
- 164 DEPR. ON CREST - FEET A. 1.5m L.
30W x 10-15 ↓ V-SE / NW
VERT. STEEL BAR EXP. ↑ 6cm x 2cm φ.
- 165 POND @ TOE. AS IN 2010. NO SHEEN
V-NW.
- 166 PAN NE-NW FROM S TOP
- 167 V-NW / NE ALONG TOE
- 167 V-SE / NW @ ^{SURF} DRAINAGE ON RD + TIER II TOE of
- 169 EXP GEOTEXT. IN ROAD 30 x 30 +
TIER II. 10 x 5.
- 170 V-SW @ SEEP PT IN RD, IRON STAIN /
SHEEN. NO V.
- SHEEN IN DRAIN. TO SW ALONG TOE
START @ 171, V-NE
- 172 SEEP PT? @ TOE OF TIER II, IRON ST +
SHEEN. V-NE, NO STAIN / SHEEN TO
SW.
- 173 SEEP @ TOE? NO STAIN / SHEEN - V-NE

LEVEL

(65)

174	- V-NE/SE ALONG TOE @ W CNR	E
175	PAN S-N ACROSS TOP.	E
176	PAN SE-N FROM GRAVEL PILE	E
177	V-SE @ DRAINAGE/ALONG SW TOE POND IN RUTS.	E
178	V- NW/SE @ TOE, SEEP PT? @ TOE, SHEEN + IRON ST. for ~10m SE	E
179	V- NW/ ESE @ TOE, DRAINAGE.	E
180	V- E @ RUNOFF CH, MIN EROS S-15↓	E
181	V- NE ALONG SE TOE	E
182	PAN W- E ACROSS TOP FROM S CNR	E
183	PAN N-S ACROSS TOP " " E "	E
184	V- N/S @ PONDERS AREAS ON TOE	E
185	MIN DEPRESSION // CREST 4m L.	E
186	10-30 W, 5-10↓ V. NW/SE	E
187	" " 0.8 L, 30 W, 5-7↓	E
188	V- SE, CONT. OF 182 MAKE 1 AREA	E
189	PAN W- E ACROSS TOP FROM N CNR	E
190	PAN NE + NW @ N HLF.	E
191	V- S @ SE @ TOE - IRON ST	E
192	V- SE ALONG NE TOE MIN, POND	E
193	NEAR MW-2	E
194	V: S @ MIN SEEP @ TOE 15 W	E
195	" " 20 W / SHEEN + STAN.	E

MUST NOTE ABLE FLOW

189	MIN SEEP 10 W. @ TOE - MID - V-S	
190	NO ST/SH.	
191	" " 15 W. V-S	
192	2 AREAS.	
193	EERT A. , V-S , INACTIVE	
194	2 - MIN EROSION TOP - TOE	
195	10 - 15 W, 1 m APART 2 - S ↓ V. SW	
196	SEEP / ACTIVE @ TOE , V-W / N	
197	NO STAN / SHEEN.	

USLF

194	V- S @ MW-5. @ TOE	
195	PAN S- NW ACROSS TOP @ NW CNR	
196	MIN DEPRESSION ON CREST, 1x1.5x	
197	5-7↓ V- NW	
198	V- W / SE	
199	V- SE @ TYPE 1 @ TOE	
200	PAN N-S ACROSS TOP	
201	S- N @ TYPE 1	
202	MIN EROS. OF FINEER MAT. INTO TYPE 1.	
203	5m W 5-10↓ , V- E / W	
204	EXT. UP PAST VT-2	
205	PAN NE-SW FROM SE - TOP CNR	
206	SW-NE @ TYPE 1.	

LEVEL

(70)

200	V-S @ SOUTH LOBE
201	V-E @ DRAIN/EROSION B/W LOBES FINES, UP TO 40" B/W BUDS
202	V-S @ SLOPE
203	MIN. EROS. ON SLOPE 0.8L x 20W x 15" V-SW
204	V-SW DOWN SE TDE
205	SETTLE @ CREST/EROS 1.5 DOWN XL x 10-15" V-NE
206	PAN NE-NW @ SE CORN
207	MIN. EROS 3" I CREST x 30W x 10" V-N
208	MIN. EROS. @ SW 7" L x 30W x 5" V-SW
211	PAN SE-N ACROSS TOP SW CORN
212	DEBRIS EXP - FABRIC SAME TOP OF EROS. @ 208
213	V-NE @ RUNOFF ^{CH.} W OF WEDGE NO 2
214	PAN - SE-N ACROSS TOP
215	MIN. EROS/SETT. "Y" FROM N+E 1" L x 10-15W x 2-5" V-E/W PLUS 2ND DEPR. TO S 2W. 1" L x 30W x 5" FEAT A

(71)

216	PAN S-N. NEAR VT-4 V-N / SSE ALONG TDE, MIN. PONDING
217	V-S ALONG TDE
218	PAN NW-SW @ TIER II V-NW @ PONDING E OF TIER II
219	<u>LS NW LF</u> V-SW ALONG NW TDE SE " NE TDE
220	PAN SW-E ACROSS TOP FROM N
222	V-NE/SW @ MIN. DEPR. ON CREST 1" x 0.25 x 2.5"
223	PAN N-SW FROM E CORN
224	PAN NE-NW " S
225	V-NE / NW ALONG TDE
226	FEAT A - SUTLE DEPR. ON SURFACE 2" x 4" - SAME S & V-E/N
227	PAN SE-NE FROM W CORN
228	V-SE ALONG TDE

LEVEL

(72)

LOWER	SIZE	LF	
229	TOP OF DR. FEATURE	V. N/SW	
230	PAN N-SW, V-SW ALONG SE SLOPE, MIN. VEG ON SLOPE		
231	PAN NE-W from S tip		
233	TOP OF DR. FEATURE @ S. END	V. WNW/NE	
234	FEET 3, MIN. DEPRESS. SAME UP TO 15 ↓ V. SE WIEROS		
	3m x 0.3-2m W.		
235	V. N ALONG DR. OF DE.		
236	V-SE ALONG DR. FEAT.		
	PT OF SEEP @ TOE 30W, SHEEN/ST.		
	WETTED AREA V-SE		
237	SEEP 10W V-SE /N.		
238	2-3 pts of seep W/ST/SH.		
239	" "		
	CRACK EXT // toe. 3-10m W.		
	4m L, V-N		
240	START OF CRACKS, MULTI-DIR		
	MOSTLY W/IN BOTTOM 1-2m.		
241	V-S/N, ALSO @ STREAM		
	↳ UP TO 10cm W, SWAMP 2 of TYPE 1		
	@ TOE. TO N of 241		
242	V-S/N, CRACKS EXT 5-6 up		
	from toe 5-10m. - close up		

(73)

243	V-NNE ALONG BENCH		
	5m up from crack term. e top.		
244	MIN VEG @ top of slope - SW CORNER		
	V-S. AND ON BENCH @ S. END.		
245	PAN S-NW ACROSS TOP		
246	MIN DEPR. @ TOP SLOPE		
	20x40x5-7 ↓ V-NE.		
247	lin dep 45° slope NW DIR		
	V-W 2m x 10x5 ↓ 7m below top		
248	PAN SE-N ACROSS TOP		
249	V-NE 1x0.5x5 ↓		
250	V-SW/NE ON BENCH		
251	V-SE @ FORMER SEEP / WHITE		
252	" "		
253	V-SE @ SW EROS. ON SLOPE TOP-BENCH.		
	0.3x1.5W, 5-15 ↓ 254 TOP		
255	V-SE @ FORMER SEEP N of UT-9.		
	V-NE/SW ALONG BENCH		
256	V-SE/SW ALONG SLOPE		
257	MIN LINEAR DEPRESSION SW/NE,		
	5m L x 1.5W x 5 ↓ V-SW		
258	PAN SW-E ACROSS TOP		
259	PAN SW-SE FROM N. OF LF		
260	V-S UP DR. FEAT @ END.		
261	MIN EROS. OF FINER GR. COVER		
	1m W - NO ↓ V-NE		

LEVEL

(74)

262 U - NE (SW) IN CH

263 MIN. DEPRESS. 2x0.8x5-10d
WLFINES.

COOLERS

MAXXAM - 7

EXOVA - 1

BOXES - BIOGENIE

LARGE - MULTI METER, TURBIDIMETER

RADIOS, INTERFACE PROBE,

DATA LOGGER, VT-1, FIRST AID KIT

SMALL - SOIL SCOOPS, FLOW CELL, TUBING

988-2918. WLF (EXPEDITION)

Invoice To: Require Report? Yes ☐ No ☐

Company Name: **SILA REMEDIATIONS (Client# 4781)**

Contact Name: **J.P. PELLETIER**

Address: **4495 WILFRID-HAMEL BLVD, SUITE 200**

Prov: **QUEBEC, QC** PC:

Contact #: **418-653-4422** Fax:

Report To:

Prov: PC:

Ph: Fax:

PO# / AFE#:

Quotation #: **A90192**

Project #: **DLCU LANDFILL MONITORING PROJECT**

Proj. Name: **C411-PELLEY BAY**

Location: **CAM-4**

Sampler's Initials: **A.P.**

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1

☐ CCME

☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

apassalis@mts.net

jppelletiere@biogenie-env.com

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)

Date Required:

☒ REGULAR Turnaround (5 to 7 Days)

Sample Identification			Matrix S/W	Date & Time Sampled Year/Month/Day	BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)	Assessment ICP Metals 2	Paint Filter	Flashpoint	pH (1:1)	TCLP	BTEX	Metals	TPHIR	Ammonia	TKN	COD	DOC	TOC	SEE LIST	Regulated Metals (CCME / AT1)	Mercury	PCB	HOLD for 60 Days	# of Containers Submitted
1	C411-1W		W	18/8/11																							1
2	-2W																										1
3	-6W																										4
4	-7W																										4
5	C411-5W																										4
6	-8W																										4
7	-9W																										4
8	-14W			19/8/11																							4
9	-15W			"																							4
10	-Bmw1			18/8/11																							3
11	C411-11W																										4
12	-12W *																										3

* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: Date/Time: **21/8/11**

Sign and Print: **APASSALIS**

COMMENTS/SPECIAL INSTRUCTIONS: **TOTAL METALS - Cu, Ni, Co, Cr, Cd, Pb, Zn, As, Hg**

JARS USED & NOT SUBMITTED:

Received By: **21/8/11**

Temperature: Ice:

CUSTODY SEAL YES / NO:

Maxxam Analytics International Corporation o/a Maxxam Analytics CAL FCD-00357 Rev6 08/12

Limited Sample Vol. * Analysis Priority - metals ① PCBs ②, TPH ③

Invoice To: Require Report? Yes ☐ No ☐

Company Name: **SILA REMEDIATIONS (Client# 4761)**

Contact Name: **J.P. Pelletier**

Address:

Prov: PC: Ph: Fax:

Report To:

Prov: PC: Ph: Fax:

PO# / AFE#:

Quotation #: A90192

Project #: **DLCU LANDFILL MONITORING PROJECT**

Proj. Name:

Location: **CAM-4**

Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1

☐ CCME

☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)

Date Required:

☒ REGULAR Turnaround (5 to 7 Days)

Sample Identification			Matrix S/W	Date & Time Sampled Year/Month/Day	BTEX F	Sieve (75)	Salinity	Regulated	Assess	Paint	TCLP			TPHIR	Ammonia	TOC	REGULATED METALS (CCME / AT1)		Mercury	PCB																*HOLD	Co
1	C411-21W	W	19/8/11											X			X		X																	4	
2	-22W													X			X		X																	4	
3	-23W													X			X		X																	4	
4	C411-17W													X			X		X																	4	
5	-18W													X			X		X																	4	
6	-19W													X			X		X																	4	
7	-20W													X			X		X																	4	
8	C411-Bmw3		1											X			X		X																	4	
9	Bmw4													X			X		X																	4	
10	C411-BDW1		18/8/11											X			X		X																	4	
11	-BDW2		19/8/11											X			X		X																	4	
12	C411-FB		"											X			X		X																	4	

ARRIVED AT DEPOT:
AUG 22 2011
TEMP: 81.8/10

* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: A. Passalis Date/Time: 21/8/11

Sign and Print: A. Passalis

COMMENTS/SPECIAL INSTRUCTIONS:

TOTAL METALS - Cu, Ni, Co, Cr, Cd, Pb, Zn, As, Hg

JARS USED & NOT SUBMITTED

Received By: 24/2/2015

Temperature

Ice

CUSTODY SEAL YES / NO

Maxxam Analytics International Corporation o/a Maxxam Analytics CAL FCD-00357 Rev6 08/12

* LIMITED SAMPLE VOL - ANALYSIS PRIORITY

metals ①

PCBs ②

TPM ③

ARRIVED AT DEPOT:

AUG 22 2011

TEMP: 8/18/10

Invoice To: Require Report? Yes ☐ No ☐

Company Name: **SILA REMEDIATIONS (Client# 4781)**

Contact Name: **J.P. Pelletier**

Address:

Prov: _____ PC: _____

Contact #: Ph: _____ Fax: _____

Report To:

Prov: _____ PC: _____

Ph: _____ Fax: _____

PO# / AFE#:

Quotation #: A80192

Project #: **DLCU LANDFILL MONITORING PROJECT**

Proj. Name:

Location: **CAM-4**

Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1 _____

☐ CCME _____

☐ OTHER _____

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ **RUSH** (Please ensure you contact the lab to reserve)

Date Required: _____

☒ **REGULAR** Turnaround (5 to 7 Days)

Sample Identification			Matrix S/W	Date & Time Sampled Year/Month/Day	BTEX F1-	Sieve (75	Salinity 4	Regulate	Assessm	Paint	TCLP			TPHIR	Ammo	TOC	REGULATED METALS (CCME/AT1)			Mercury	PCB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: A. Passalis Date/Time: 21/8/11

Sign and Print: _____

COMMENTS/SPECIAL INSTRUCTIONS:
Total Metals - Cu, Ni, Co, Cr, Cd, Pb, Zn, As, Hg

Maxxam Job #:

JARS USED & NOT SUBMITTED

Received By: 28/8/11

Temperature

Ice

CUSTODY SEAL YES / NO

ARRIVED AT DEPOT:
AUG 22 2011
TEMP: 12°C

	Invoice To: Require Report? Yes ☒ No ☐
Company Name:	SILA REMEDIATIONS (Client# 4781)
Contact Name:	4495 WILFRID HAMEL BLVD
Address:	SUITE 202, QUEBEC, QUEBEC
	Prov: _____ PC: _____
Contact #s:	Ph: 418-653-4422 Fax: _____

Report To:	
apassalis@mts.net jpelletier@biogenie-env.com	
Prov:	PC:
Ph:	Fax:

PO# / AFE#:	
Quotation #:	A90192
Project #:	DLCU LANDFILL MONITORING PROJECT
Proj. Name:	C411 - P624 BAY
Location:	CAM-4
Sampler's Initials:	A.P.

L.P. Pelletier

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1

CCME

☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ **RUSH** (Please ensure you contact the lab to reserve)

Date Required:

☒ REGULAR Turnaround (5 to 7 Days)[illegible]

^a All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By:

Sign and Print:

COMMENTS/SPECIAL INSTRUCTIONS:

TEST/SPECIAL INSTRUCTIONS:
Metals - Cu, Ni, Co, Cr, Cd, Pb, Zn, As, Hg only

Date/Time:

JARS USED & NOT SUBMITTED

Received By _____

AUG 23 2011
74212815

CUSTODY SEAL YES / NO

Temperature

	Ice
--	-----

Company Name: **SILA REMEDIATIONS (Client# 4781)**
Contact Name: J.P. Pelletier
Address:
Contact #s:

Invoice To: Require Report? Yes ☐ No ☐

Prov: PC: Ph: Fax:

Report To:

Prov: PC: Ph: Fax:

PO# / AFE#:
Quotation #: A90192
Project #: **DLCU LANDFILL MONITORING PROJECT**
Proj. Name:
Location: **CAM-4**
Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1
☐ CCME
☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)

Date Required:

☒ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	TEX-104	Sieve (75 micron)	Salinity	Regulated Metals (CCME / AT1)	Assessment	Paint Filter	TCLP	pH	TPH	Ammonia	TOC	REGULATED METALS (CCME / AT1)	Mercury	PCB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</
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* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: [Signature] Date/Time: 21/8/11
Sign and Print: A. PASALIS
COMMENTS/SPECIAL INSTRUCTIONS:
Metals - Cu, Ni, Co, Cr, Cd, Pb, Zn, As, Hg

JARS USED & NOT SUBMITTED: 1
Received By: [Signature] Date: 23/8/11
Temperature: 15
Ice: 1
CUSTODY SEAL: YES / NO

Invoice To: Require Report? Yes ☐ No ☐

Company Name: **SILA REMEDIATIONS (Client# 4781)**

Contact Name: **J.P. Pelletier**

Address:

Prov: PC: **PC**

Contact #s: Ph: Fax:

Report To:

Prov: PC: **PC**

Ph: Fax:

PO# / AFE#:

Quotation #: **A90192**

Project #: **DLCU LANDFILL MONITORING PROJECT**

Proj. Name:

Location: **CAM-4**

Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1 _____

☐ CCME _____

☐ OTHER _____

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)

Date Required: _____

☒ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	Sieve (75 micron)	Salinity	Regulated Metals (CCME/AT1) ¹	Assessment ICP Metals ²	Paint Filter	TCLP	PCB	TPH/IR	Ammonia	TKN	COD	DOC	REGULATED METALS (CCME/AT1) ³	Mercury	PCB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: _____ Date/Time: **21/8/11**

Sign and Print: **A. PASSALUS**

COMMENTS/SPECIAL INSTRUCTIONS:

Metals - Cu, Ni, Co, Cr, Cd, Pb, Zn, As, Hg

JARS USED & NOT SUBMITTED

Received By: **Aug 22 2011**

Temperature: _____ Ice: _____

CUSTODY SEAL YES / NO

PO# / AFE#:	
Quotation #:	A90192
Project #:	DLCU LANDFILL MONITORING PROJECT
Proj. Name:	
Location:	CAM-4
Sampler's Initials:	

EMAIL ADDRESS(S):

☒ REGULAR Turnaround (5 to 7 Days)

ARRIVED AT DEPOT
AUG 22 2011
TEMP: / / /

CUSTODY SEAL YES / NO

Company Name:

SILA REMEDIATIONS (Client# 4781)

Contact Name:

J.P. Pelletier

Address:

Prov:

PC:

Contact #s:

Ph:

Fax:

Report To:

Prov:

PC:

Ph:

Fax:

PO# / AFE#:

Quotation #: A90192

Project #: DLCO LANDFILL MONITORING PROJECT

Proj. Name:

Location: CAM-4

Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1

☐ CCME

☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)

Date Required:

☒ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	Prepared	Sieve (75 micron)	Salinity	Regulated Metals	Assessment	Paint Filter	TCLP	pH	TPH	Ammonia	TOC	REGULATED METALS (CCME/AT1)	Mercury	PCB																*HOLD for 60 Days	# of Containers Submitted
1	C411-21WA	S	19/8/11	X		X				X																							3	
2	-21WB			X		X				X																							3	
3	-22WA			X		X				X																							3	
4	-22WB			X		X				X																							3	
5	-23WA			X		X				X																							3	
6	-23WB			X		X				X																							3	
7	-BMW3A			X		X				X																							3	
8	-BMW3B			X		X				X																							3	
9	-BMW4A			X		X				X																							3	
10	-BMW4B			X		X				X																							3	
11	C411-BD1		18/8/11	X		X				X																							3	
12	-BD2		"	X		X				X																							3	

ARRIVED AT DEPT
AUG 22 2011
TEMP: 11.1

* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By:

Date/Time:

21/8/11

Sign and Print:

COMMENTS/SPECIAL INSTRUCTIONS:

A. PASSALIS

JARS USED & NOT SUBMITTED

Received By:

21/8/11

Temperature

Ice

CUSTODY SEAL YES / NO

Invoice To: Require Report? Yes ☐ No ☐

Company Name: **SILA REMEDIATIONS (Client# 4781)**

Contact Name: J.P. Pelletier

Address:

Prov: PC: Ph: Fax:

Report To:

Prov: PC: Ph: Fax:

PO# / AFE#:

Quotation #: A90192

Project #: **DLCU LANDFILL MONITORING PROJECT**

Proj. Name:

Location: **CAM-4**

Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

☐ AT1

☐ CCME

☐ OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):

SERVICE REQUESTED:

☐ RUSH (Please ensure you contact the lab to reserve)

Date Required:

☒ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS (footnotes defined on back)										WATERS (footnotes defined on back)										OTHER TEST(S)										# of Containers																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
				BTEXFA4	Sieve (75 micron)	Salinity	Regulated Metals (CCME/AT1)	Assessment	Paint Filter	Flashpoint	pH (1:1)	TCLP	BTEX	Metals	TPHIR	Ammonia	TKN	COD	DOC	Total	Preserved	Not Preserved	Dissolved	Preserved	Not Preserved	Filtered	Not Filtered	Mercury	Total	Dissolved	PCB																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Relinquished By: [Signature] Date/Time: 21/8/11

Sign and Print: A. PASALIS

COMMENTS/SPECIAL INSTRUCTIONS:

JARS USED & NOT SUBMITTED

Received By: [Signature] Temperature: Ice:

CUSTODY SEAL YES / NO