

**THE COLLECTION OF LANDFILL
MONITORING DATA AT THE FORMER
PIN-3 DEW LINE SITE**

Lady Franklin Point, Nunavut

REVISED FINAL REPORT – 2014

(O/Ref.: CD2656) (Y/Ref.: DLCLFMP2 (KITIK12))

DEFENCE CONSTRUCTION CANADA

APRIL 2015



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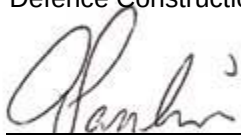
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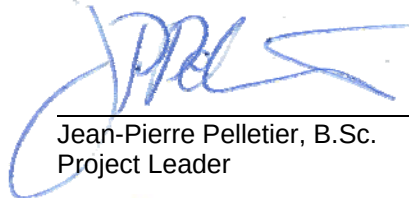
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TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	OBJECTIVE AND SCOPE OF WORK	1
1.2	FIELD PROGRAM STAFF AND TIMING	2
1.3	2014 WEATHER CONDITIONS	2
1.4	REPORT FORMAT	2
2	METHODOLOGY	5
2.1	VISUAL INSPECTION	5
2.2	SOIL SAMPLING.....	5
2.3	GROUNDWATER SAMPLING.....	7
2.4	THERMAL MONITORING	8
2.5	QUALITY CONTROL	8
2.6	QA/QC PROCEDURES	9
2.7	PROJECT REFERENCES.....	9
3	MAIN LANDFILL	10
3.1	SUMMARY	10
3.2	PRELIMINARY STABILITY ASSESSMENT.....	14
3.3	LOCATION PLAN.....	15
3.4	PHOTOGRAPHIC RECORDS	17
3.5	THERMAL MONITORING DATA	20
3.6	SOIL SAMPLE ANALYTICAL DATA.....	25
3.7	GROUNDWATER SAMPLE ANALYTICAL DATA	26
3.8	MONITORING WELL SAMPLING/INSPECTION LOGS (MW-5 TO MW-8)	27
4	NWS LANDFILL	32
4.1	SUMMARY	32
4.2	PRELIMINARY STABILITY ASSESSMENT.....	35
4.3	LOCATION PLAN.....	36

4.4	PHOTOGRAPHIC RECORDS	38
4.5	SOIL SAMPLE ANALYTICAL DATA	40
5	SOUTH LANDFILL	41
5.1	SUMMARY	41
5.2	PRELIMINARY STABILITY ASSESSMENT.....	45
5.3	LOCATION PLAN.....	46
5.4	PHOTOGRAPHIC RECORDS	48
5.5	SOIL SAMPLE ANALYTICAL DATA	51
6	NORTH LANDFILL	52
6.1	SUMMARY	52
6.2	PRELIMINARY STABILITY ASSESSMENT.....	55
6.3	LOCATION PLAN.....	56
6.4	PHOTOGRAPHIC RECORDS	58
6.5	SOIL SAMPLE ANALYTICAL RESULTS	60
7	NON-HAZARDOUS WASTE LANDFILL	61
7.1	SUMMARY	61
7.2	PRELIMINARY STABILITY ASSESSMENT.....	64
7.3	LOCATION PLAN.....	65
7.4	PHOTOGRAPHIC RECORDS	67
7.5	SOIL SAMPLE ANALYTICAL DATA	69
7.6	GROUNDWATER SAMPLE ANALYTICAL DATA	70
7.7	MONITORING WELL SAMPLING/INSPECTION LOGS (MW-13 TO MW-16).....	71
8	TIER II SOIL DISPOSAL FACILITY	76
8.1	SUMMARY	76
8.2	PRELIMINARY STABILITY ASSESSMENT.....	79
8.3	LOCATION PLAN.....	80
8.4	PHOTOGRAPHIC RECORDS	82

8.5	THERMAL MONITORING DATA	85
8.6	SOIL SAMPLE ANALYTICAL DATA.....	90
8.7	GROUNDWATER SAMPLE ANALYTICAL DATA.....	91
8.8	MONITORING WELL SAMPLING/INSPECTION LOGS (MW-9 TO MW-12)	92

LIST OF TABLES

Table I: 2014 Monitoring Requirements for PIN-3 Landfills	1
Table II: Summary of Soil Sampling at PIN-3 – August 2014	7
Table III: Summary of Groundwater Sampling at PIN-3 – August 2014	8
Table IV Visual Inspection Checklist / Report – Main Landfill.....	11
Table V: Preliminary Stability Assessment – Main Landfill	14
Table VI: Landfill Visual Inspection Photo Log – Main Landfill (page 1 of 3)	17
Table VII: Soil Chemical Analysis Results – Main Landfill.....	25
Table VIII: Groundwater Chemical Analysis Results – Main Landfill	26
Table IX: Visual Inspection Checklist / Report – NWS Landfill	33
Table X: Preliminary Stability Assessment – NWS Landfill	35
Table XI: Landfill Visual Inspection Photo Log – NWS Landfill (page 1 of 2)	38
Table XII: Soil Chemical Analysis Results – NWS Landfill	40
Table XIII: Visual Inspection Checklist / Report – South Landfill	42
Table XIV: Preliminary Stability Assessment – South Landfill	45
Table XV: Landfill Visual Inspection Photo Log – South Landfill (page 1 of 3)	48
Table XVI: Soil Chemical Analysis Results – South Landfill	51
Table XVII: Visual Inspection Checklist / Report – North Landfill	53
Table XVIII: Preliminary Stability Assessment – North Landfill.....	55
Table XIX: Landfill Visual Inspection Photo Log – North Landfill (page 1 of 2).....	58
Table XX: Soil Chemical Analysis Results – North Landfill	60
Table XXI: Visual Inspection Checklist / Report – NHWLF.....	62
Table XXII: Preliminary Stability Assessment – NHWLF	64

Table XXIII: Landfill Visual Inspection Photo Log – NHWLF (page 1 of 2)	67
Table XXIV: Soil Chemical Analysis Results – Non-Hazardous Waste Landfill.....	69
Table XXV: Groundwater Chemical Analysis Results – Non-Hazardous Waste Landfill	70
Table XXVI: Visual Inspection Checklist / Report – Tier II Soil Disposal Facility	77
Table XXVII: Preliminary Stability Assessment – Tier II Soil Disposal Facility	79
Table XXVIII: Landfill Visual Inspection Photo Log – Tier II Soil Disposal Facility (page 1 of 3)	82
Table XXIX: Soil Chemical Analysis Results – Tier II Soil Disposal Facility	90
Table XXX: Groundwater Chemical Analysis Results – Tier II Soil Disposal Facility.....	91

LIST OF FIGURES

Figure 1 : PIN-3.1 Overall Site Plan	4
Figure 2 : PIN-3.2 Location Plan of Main Landfill	16
Figure 3 : PIN-3.3 Location Plan of NWS Landfill.....	37
Figure 4 : PIN-3.4 Location Plan of South Landfill.....	47
Figure 5 : PIN-3.5 Location Plan of North Landfill	57
Figure 6 : PIN-3.6 Location Plan of NHWLF.....	66
Figure 7 : PIN-3.7 Location Plan of Tier II Soil Disposal Facility	81

LIST OF APPENDICES

ANNEX 1 LABORATORY RESULTS

ANNEX 2 QA/QC DISCUSSION

ANNEX 3 FIELD NOTES AND CHAINS OF CUSTODY FORMS

1 INTRODUCTION

1.1 OBJECTIVE AND SCOPE OF WORK

The objective of the Defence Construction Canada (DCC) Landfill Monitoring Program is to collect sufficient information to assess the performance of landfills at former Distant Early Warning (DEW) line sites that have been remediated, from a geotechnical and environmental perspective. DCC has specified the requirements for the Landfill Monitoring Program in the document entitled *“Terms of Reference (TOR) - Services for the Collection of Landfill Monitoring Data, PIN-3 Lady Franklin Point, CAM-M Cambridge Bay, CAM-2 Gladman Point, CAM-3 Shepherd Bay, CAM-4 Pelly Bay, DEW LINE SITES, NUNAVUT TERRITORY, KITIKMEOT REGION, DCC PROJECT #: DLCLFMP2 (KITIK12), March 20, 2012.”*. This report contains a summary of the findings from the 2014 inspection of the PIN-3 Lady Franklin Point.

Table I summarizes the monitoring requirements of the 2014 season. No deviations from the TOR were experienced while completing the 2014 monitoring.

Table I: 2014 Monitoring Requirements for PIN-3 Landfills

Landfill	Visual Inspection	Soil Sampling	Groundwater Sampling	Thermal Monitoring
Main Landfill	✓	✓	✓	✓
NWS Landfill	✓	✓		
South Landfill	✓	✓		
North Landfill	✓	✓		
Non-Hazardous Waste Landfill	✓	✓	✓	
Tier II Disposal Facility	✓	✓	✓	✓

1.2 FIELD PROGRAM STAFF AND TIMING

The 2014 on-site field program at PIN-3 Lady Franklin Point took place between August 17-19, 2014. Biogenie sub-contracted Sila Remediation Inc. from Igloolik, Nunavut to perform the field work. The Sila field program was executed by Mr. Andrew Passalis and 4 local Inuit representatives.

The team was made up of the following individuals:

- Andrew Passalis, Project Engineer (Sila)
- John Henry Etegak, Field Technician (Sila)
- Benjamin Kaniak, Field Technician (Sila)
- Dyson Koaha, Field Technician (Sila)
- Joe Koaha, Wildlife Monitor (Sila)

1.3 2014 WEATHER CONDITIONS

Seasonally warm weather conditions were observed during the PIN-3 Lady Franklin Point monitoring event with daytime temperatures ranging between 5-13°C. Skies were mixed with periods of sun and cloud throughout the monitoring period with light winds out of the northwest ranging between 10-20 km/h. Precipitation was not observed during the monitoring period.

1.4 REPORT FORMAT

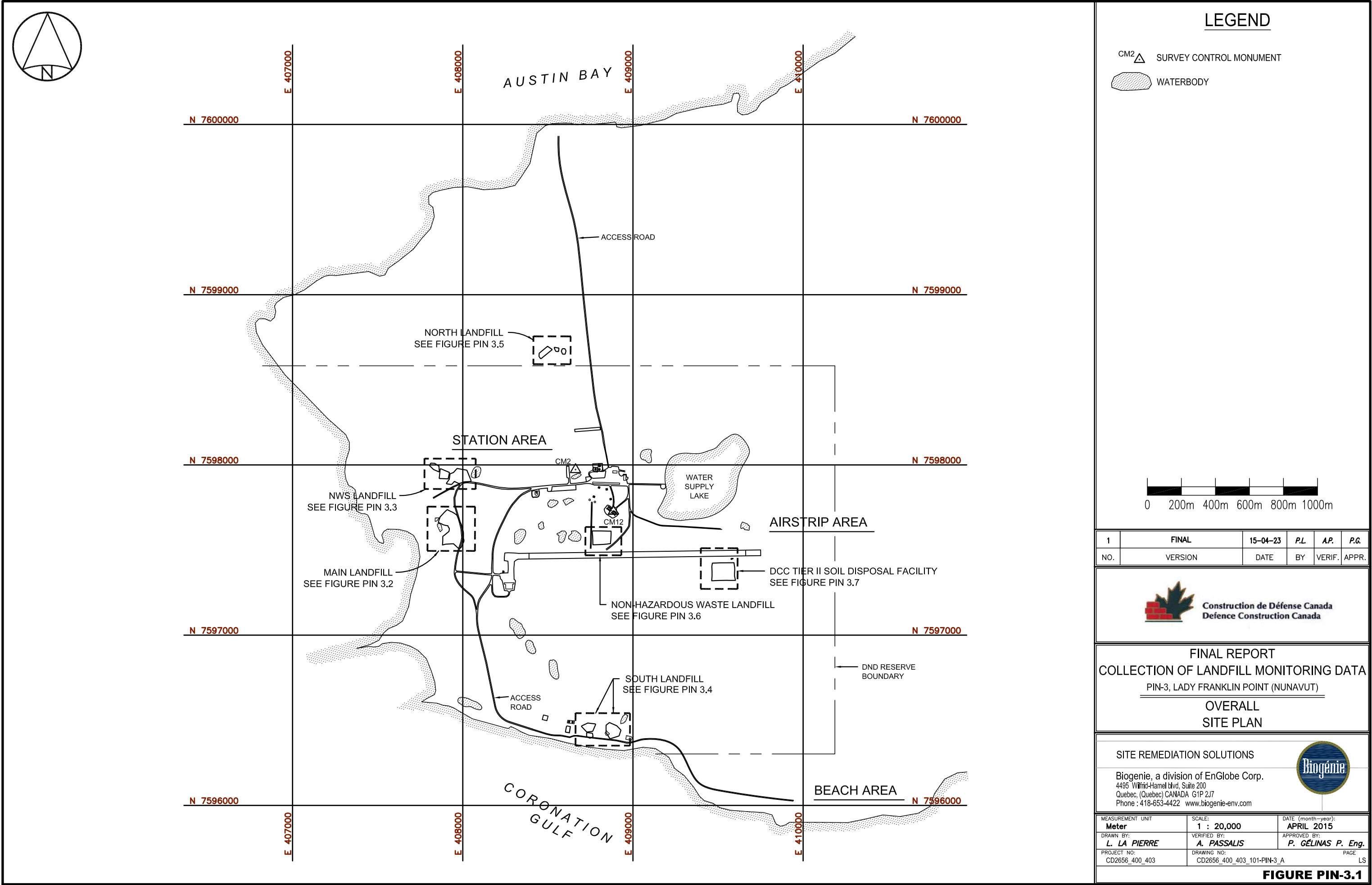
This report describes the work carried out in August 2014 at six landfill sites at PIN-3 Lady Franklin Point. Results from soil and groundwater sampling, thermal monitoring, and visual inspection of the sites are also presented in the formats described in the TOR. An electronic version of the report 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 2014 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 2014 soil analytical data
- Summary of 2014 groundwater analytical data (where applicable)
- Monitoring well development/sampling reports (where applicable)

For the photographic record, the printed copy of the report only includes an index of photos for each of the landfill areas. The actual photos are included in electronic format in the Addendum DVD-ROM to the report. Only one aerial photo of the Main Landfill is provided. Certificates of Analysis, QA/QC analytical results and field notes are attached in appendices.

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2 METHODOLOGY

2.1 VISUAL INSPECTION

Data and information collected during the visual inspection of the PIN-3 landfills are included in the visual inspection datasheets. These data sheets 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 or numerical tag to be used consistently each year in an effort to track changes in conditions for each specific feature.

Digital photos were taken to illustrate the current state of the landfills as well as features of interest. Annotated sketches/diagrams are included in the 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 Draft 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.

2.2 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)

Testpits were dug using a hand shovel down to refusal or permafrost. The shovel was cleaned between testpits. Soil samples were placed directly in the laboratory provided jars/bottles and were not mixed. Disposable nitrile glove were worn and disposed of after each sample collection. Jars/bottles were cleaned prior to placement into the cooler. For the 2014 monitoring event, 28 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 stations during the August 2014 sampling.

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

- Where required, the soil samples were collected from locations between a two to four metre radius of the monitoring wells, making sure to stay away from soil disturbed during previous years sampling campaigns;
- 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 ten percent of soil samples taken were sent to the owner's representative (ESG OPS CENTRE) in Kingston for archiving as specified by DCC.

The soil samples were analyzed for requested parameters (TPH (F1-F3), total metals and PCBs) as specified by DCC. It should be noted that Exova performed Total PCBs analysis with a method detection limit of 0.1 mg/kg, whereas the contractual requirement is 0.05 mg/kg. Given that the DLCU Tier I Criteria for Total PCBs is 1 mg/kg, the results provided by Exova are still valid.

Table II below summarizes the soil sampling at PIN-3 during the August, 2014 field program.

Table II: Summary of Soil Sampling at PIN-3 – August 2014

Landfill Site	Soil Sample Locations						
Main Landfill	MW-5	MW-6	MW-7	MW-8			
NWS Landfill	P3-1	P3-2	P3-3	P3-4			
South Landfill	P3-5	P3-6	P3-7	P3-8	P3-9	P3-10	P3-11
North Landfill	P3-12	P3-13	P3-14	P3-15	P3-16		
Non-Hazardous Waste Landfill	MW-13	MW-14	MW-15	MW-16			
Tier II Disposal Facility	MW-9	MW-10	MW-11	MW-12			

2.3 GROUNDWATER SAMPLING

The groundwater sampling methodology conformed to guidance provided in the following CCME documents:

- CCME EPC-NCS62E Guidance Manual on *Sampling, Analysis and Data Management for Contaminated Sites* - Volume I: Main Report, Dec 1993 (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. 1993 (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. The samples were not acidified and were not filtered (as directed in the TOR).

The 2014 field program included the monitoring of twelve locations at PIN-3. Two of the four wells at the Tier II Soil Disposal Facility (MW-9 and MW-10) were dry at the time of monitoring and consequently could not be sampled. A summary of the status of the monitoring wells are summarized in Table III.

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

Table III: Summary of Groundwater Sampling at PIN-3 – August 2014

Landfill Site	Groundwater Sample Locations			
Main Landfill	MW-5	MW-6	MW-7	MW-8
Non-Hazardous Waste Landfill	MW-13	MW-14	MW-15	MW-16
Tier II Disposal Facility	MW-9 (dry)	MW-10 (dry)	MW-11	MW-12

2.4 THERMAL MONITORING

The 2014 thermal monitoring program at PIN-3 consisted of an inspection of eight thermistors and data loggers, the downloading of all datasets, the manual reading of thermistors and the replacement of batteries at all datalogger locations. Specific detailed information regarding temperature data is contained in the report section on the Main Landfill and Tier II Disposal Facility.

2.5 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 2.2 and 2.3 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 nitrile gloves that were used only once;
- 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 respective laboratory.

Chains 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 directly to Maxxam (via Yellowknife) and 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.

Annex 1 provides a sample integrity report from Exova. This report indicates that all samples received were acceptable for analysis.

2.6 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% field Blind Duplicate Samples of soil and water were sent to Exova. Results can be found in Annex 1
- 10% Inter-laboratory Duplicate Samples were sent to Maxxam (to determine if variation in procedures may cause significant difference in analytical results).
- 10% Archival Samples to ESG (soils)

2.7 PROJECT REFERENCES

The following references are specifically relevant to the 2014 Landfill Monitoring activities:

- Terms of Reference –Services for the Collection of Landfill Monitoring Data – PIN-3 Lady Franklin Point, CAM-M Cambridge Bay, CAM-2 Gladman Point, CAM-3 Shepherd Bay, CAM-4 Pelly Bay, DEW LINE SITES, NUNAVUT TERRITORY, KITIKMEOT REGION, DCC PROJECT #: DLCLFMP2 (KITIK12), March 20, 2012.*
- Technical Proposal – The Collection of Landfill Monitoring Data for the DEW Line Sites: PIN-3 Lady Franklin Point, CAM-M Cambridge Bay, CAM-2 Gladman Point, CAM-3 Shepherd Bay, CAM-4 Pelly Bay, DEW LINE SITES, NUNAVUT, KITIKMEOT REGION, June 2012.*
- Post-Field Progress Report, PIN-3 Landfill Monitoring 2014, October 2014.*

3 MAIN LANDFILL

3.1 SUMMARY

On August 17, 2014 soil sampling and a visual inspection were completed at the Main Landfill. Visual inspection, groundwater sampling and thermistor datalogger downloading was performed on August 19, 2014.

TPH, PCBs or relatively high metal concentrations were not detected in the collected soil samples. Relatively high concentrations of chromium and nickel were found in most ground water samples. Sample P314-8W exhibited the highest concentration of all metals.

As of 2014, no features with “significant” or “unacceptable” severity ratings were identified in the Preliminary Stability Assessment of the Main Landfill. No exposed debris was noticed. A number of minor settlement and erosional features, consistent with observations from the previous inspection period, were noted during the 2014 investigation. Eight new features were noted.

At this time, the overall performance of the landfill is rated as acceptable.

The Visual Inspection Checklist/Report has been completed as per the TOR and is included as Table IV of this report.

Table IV Visual Inspection Checklist / Report – Main Landfill

**DEW LINE CLEANUP: POST-CONSTRUCTION – LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST
INSPECTION REPORT – PAGE 1 of 3**

SITE NAME: PIN-3 – Lady Franklin Point
LANDFILL DESIGNATION: Main Landfill (Containment Landfill)
DATE OF INSPECTION: August 17 and 19, 2014
DATE OF PREVIOUS INSPECTION: August 10, 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.

TABLE IV: MAIN LANDFILL VISUAL INSPECTION (PAGE 2 OF 3)

Site Name: PIN-3 Lady Franklin Point
Landfill: Main Landfill
Designation: Existing Containment Landfill
Date Inspected: August 17-19, 2014
Inspected by: Andrew Passalis, P.Eng.

Signature: 

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	Feature A See Figure PIN-3.2 (landfill cap NW of VT-1)	30 m	30 m	0.2 to 0.4 m (est.)	5%	Subtle depression northwest of VT-1	MLF-42	Acceptable	Large subtle depression. Consistent with 2009 observation
		Feature B See Figure PIN-3.2 (landfill cap NE of VT-3)	3 m	2 m	0.15 m	Isolated	Subtle depression east of VT-3	MLF-75	Acceptable	Subtle depression. Consistent with 2009 observation
		Feature G See Figure PIN-3.2 (N toe) - New Obs.	1 - 4 m	0.3 - 0.8 m	0.1 - 0.15 m	Isolated	Minor depressions	MLF-13-15	Acceptable	2 isolated minor depressions on north toe
		Feature H See Figure PIN-3.2 (W crest) - New Obs.	6 m	0.4 - 0.5 m	0.05 m	Isolated	Minor depression	MLF-26	Acceptable	Single linear depression parallel to west crest
		Feature I See Figure PIN-3.2 (SW corner) - New Obs.	1.5 - 3.5 m	0.3 - 3 m	0.1 - 0.15 m	Occasional	Minor depressions	MLF-35, 36, 63	Acceptable	Triangular-shaped depression at SW toe and linear depression below crest
		Feature J See Figure PIN-3.2 (S crest) - New Obs.	0.9 - 3.5 m	0.15 - 0.5 m	0.05 - 0.1 m	Occasional	Minor depressions	MLF-64-66	Acceptable	Linear shaped depressions along south crest
		Feature K See Figure PIN-3.2 (E crest) - New Obs.	0.5 m	0.2 m	0.1 m	Isolated	Minor depression	MLF-81, 82	Acceptable	Small depression below east crest
Erosion	Yes	Feature C See Figure PIN-3.2 (S side slope)	15 m	0.15 - 0.3 m	0.05 - 0.1 m	Isolated	Minor erosion	MLF-69, 70	Acceptable	3 areas of minor erosion on south side slope. Appears to be self armouring. Consistent with previous observation
		Feature D See Figure PIN-3.2 (W side slope)	4 m	1.4 m	0.05 - 0.1 m	Isolated	Minor erosion from crest	MLF-52-53	Acceptable	Shallow erosion along west inside slopes appear stable and self armouring. Consistent with previous observation
		Feature E See Figure PIN-3.2 (W side slope)	11 m	0.4 - 1.0 m	0.05 - 0.1 m	Isolated	Minor erosion from top crest	MLF-27-29	Acceptable	
		Feature F See Figure PIN-3.2 (W side slope)	13 m	0.3 - 0.5 m	0.02 - 0.05 m	Isolated	Minor erosion from crest	MLF-24, 25	Acceptable	
		Feature L See Figure PIN-3.2 (W side slope) - New Obs.	7 m	0.3 m	0.05 - 0.1 m	Isolated	Minor erosion crest to toe	MLF-18, 19	Acceptable	Minor erosion on northwest slopes appear stable and self armouring
		Feature M See Figure PIN-3.2 (SW side slope) - New Obs.	2 m	0.25 m	0.05 m	Isolated	Minor erosion along crest	MLF-57, 58	Acceptable	Minor erosion on southwest slopes appear stable and self armouring
		Feature N See Figure PIN-3.2 (SE side slope) - New Obs.	10 m	0.1 m	0.05 m	Isolated	Minor erosion crest to toe	MLF-80	Acceptable	Minor erosion on southeast slopes appear stable and self armouring

TABLE IV: MAIN LANDFILL VISUAL INSPECTION (PAGE 3 OF 3)

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
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	Yes	See Figure PIN-3.2 (localized areas along most side slopes and cover)	N/A	N/A	N/A	Sparse	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	N/A	N/A	N/A	N/A	N/A	VT-1, VT-2, VT-3,VT-4,MW- 5, MW-6, MW-7 and MW-8	MLF-1- 4, 41, 48, 59, 74	Acceptable	All Instrumentation remains functional.
Other Features of Note:	Yes	Feature O See Figure PIN-3.2 (SW slope) - New Obs.	12 m	0.2 m	0.05 m	Isolated	ATV tracks	MLF-60	Acceptable	All-terrain vehicle tracks on southwest side slope appears stable
Additional Photos	Yes	See Figure PIN-3.2 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	N/A	No features of note in the photographic record
Overall Landfill Performance:	Acceptable									

3.2 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for Main Landfill has been completed as per the TOR and is included as Table V below.

Table V: Preliminary Stability Assessment – Main Landfill

Feature	Severity Rating	Extent
Settlement	Acceptable	Occasional
Erosion	Acceptable	Occasional
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	

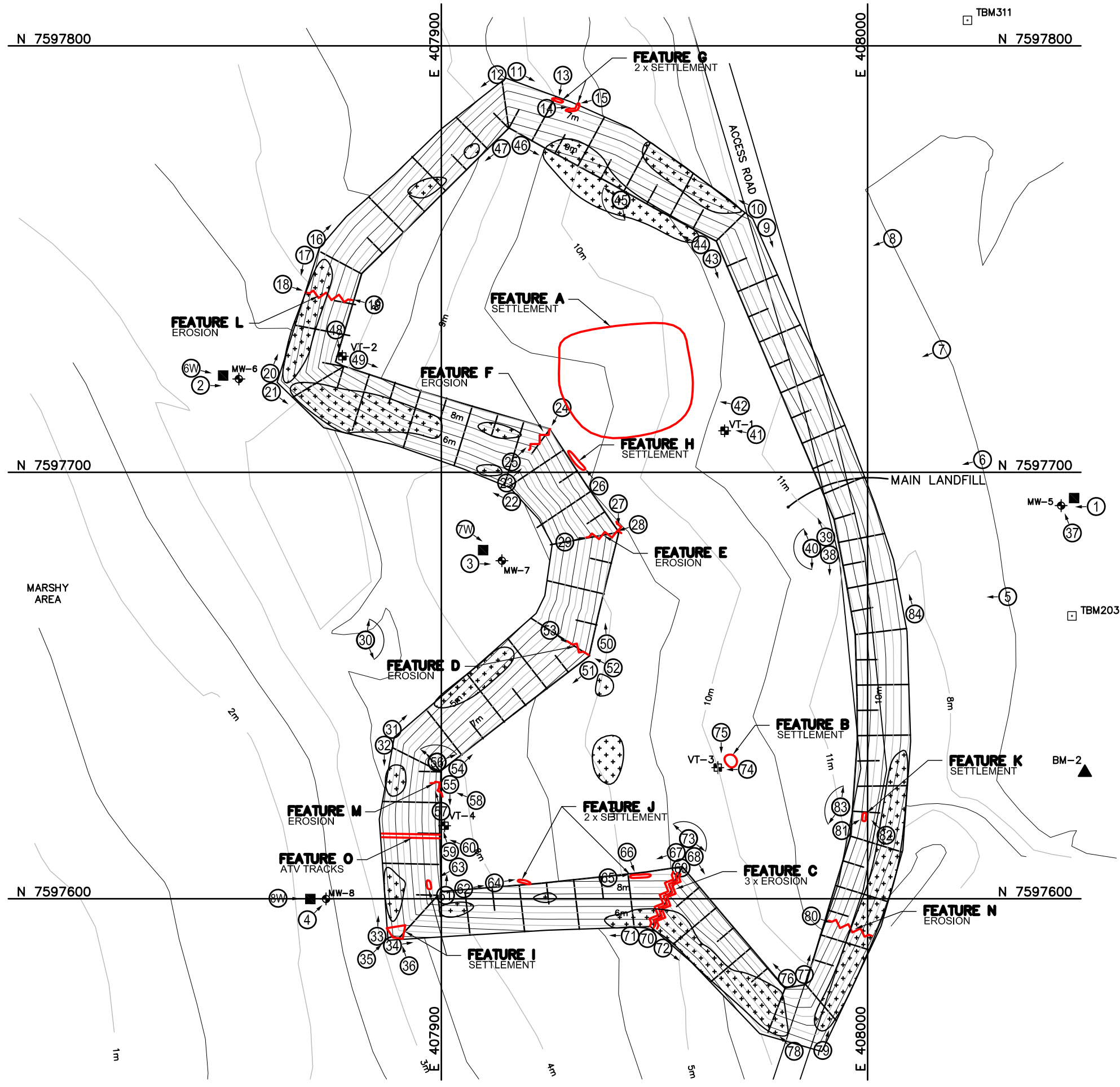
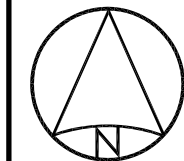
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears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

3.3 LOCATION PLAN

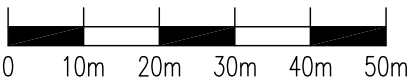
The Location Plan for the Main Landfill has been completed as per the TOR and is presented in Figure PIN-3.2.

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LEGEND

- TBM203 □ TEMPORARY BENCHMARK
BM-2 ▲ PERMANENT BENCHMARK
MW-5 ◆ MONITORING WELL LOCATION
VT ◆ VERTICAL THERMISTOR
■ MONITORING SAMPLE LOCATION
○ SETTLEMENT (NTS)
- - - EROSION (NTS)
= = = ATV TRACKS (NTS)
○ + ○ SPARSE VEGETATION
① → APPROX. PHOTOGRAPHIC VIEWPOINT



1	FINAL	15-04-23	P.L.	A.P.	P.G.
NO.	VERSION	DATE	BY	VERIF.	APPR.



Construction de Défense Canada
Défence Construction Canada

FINAL REPORT COLLECTION OF LANDFILL MONITORING DATA PIN-3, LADY FRANKLIN POINT (NUNAVUT) EXISTING MAIN 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 www.biogenie-env.com



MEASUREMENT UNIT Meter	SCALE: 1 : 1,000	DATE (month-year): APRIL 2015
DRAWN BY: L. LA PIERRE	VERIFIED BY: A. PASSALIS	APPROVED BY: P. GÉLINAS P. Eng.
PROJECT NO: CD2656_400_403	DRAWING NO: CD2656_400_403_101-PIN-3_B	PAGE PL

FIGURE PIN-3.2

3.4 PHOTOGRAPHIC RECORDS

The Photographic Record for the Main Landfill has been completed as per the TOR and is included as Table VI hereafter. The Photographic Record contains only an index of photographs. Full sized photographs are contained in the Addendum DVD-ROM.

Table VI: Landfill Visual Inspection Photo Log – Main Landfill (page 1 of 3)

Site Name: PIN-3, Lady Franklin Point
Landfill: Main Landfill
Date Inspected: August 17-19, 2014
Inspected by: Andrew Passalis, P.Eng.

Photo (MLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
1	P314_2139	4273	17/08/14	408052	7597692	View looking west at MW-5
2	P314_2140	4317	17/08/14	407844	7597720	View looking east at MW-6
3	P314_2141	4316	17/08/14	407908	7597679	View looking east at MW-7
4	P314_2142	4303	17/08/14	407870	7597596	View looking northeast at MW-8
5	P314_2144	4341	17/08/14	408033	7597671	View looking east at west side of Main Landfill
6	P314_2145	4290	17/08/14	408027	7597703	View looking east at west side of Main Landfill
7	P314_2146	4334	17/08/14	408017	7597729	View looking east at west side of Main Landfill. VT-1 visible in background.
8	P314_2148	4324	17/08/14	408005	7597755	View looking east at west side of Main Landfill
9	P314_2150	4363	17/08/14	407975	7597759	View looking south-southeast along east toe of Main Landfill
10	P314_2151	4349	17/08/14	407974	7597761	View looking northwest along north toe of Main Landfill
11	P314_2152	4344	17/08/14	407917	7597794	View looking southeast along north toe of Main Landfill
12	P314_2153	4339	17/08/14	407915	7597793	View looking southwest along west side slope of Main Landfill
13	P314_2154	4391	17/08/14	407928	7597792	View looking south at small depression near toe at north end of Main Landfill - FEATURE G
14	P314_2155	4391	17/08/14	407926	7597785	View looking northeast at linear depression near toe at north end of Main Landfill - FEATURE G
15	P314_2156	4431	17/08/14	407937	7597787	View looking southwest at linear depression near toe at north end of Main Landfill - FEATURE G
16	P314_2157	4285	17/08/14	407870	7597753	View looking northeast along west toe of Main Landfill
17	P314_2158	4332	17/08/14	407869	7597752	View looking south along west toe of Main Landfill. MW-6 in background.
18	P314_2159	4391	17/08/14	407865	7597743	View looking east-southeast at minor erosion on west side slope - FEATURE L
19	P314_2160	4435	17/08/14	407882	7597739	View looking west-northwest at minor erosion on west side slope - FEATURE L
20	P314_2164	4416	17/08/14	407860	7597722	View looking northeast along west toe of Main Landfill
21	P314_2165	4297	17/08/14	407861	7597720	View looking southeast along west toe of Main Landfill
22	P314_2166	4315	17/08/14	407917	7597693	View west-northwest at vegetation along inside toe on west side of Main Landfill
23	P314_2167	4457	17/08/14	407916	7597698	View looking northeast at vegetation on inside slope on west side of Main Landfill
24	P314_2168	4387	17/08/14	407926	7597712	View looking southwest at minor erosion at crest on inside corner of Main Landfill - FEATURE F
25	P314_2169	4270	17/08/14	407917	7597703	View looking northeast at minor erosion at crest on inside corner of Main Landfill - FEATURE F

Table VI: Landfill Visual Inspection Photo Log – Main Landfill (page 2 of 3)

Photo (MLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
26	P314_2170	4463	17/08/14	407936	7597698	View looking northwest at minor depression along crest of Main Landfill - FEATURE H
27	P314_2172	4464	17/08/14	407941	7597691	View looking south at minor erosion along crest of Main Landfill - FEATURE E
28	P314_2173	4377	17/08/14	407945	7597687	View looking southwest at minor erosion along crest of Main Landfill - FEATURE E
29	P314_2174	4300	17/08/14	407931	7597684	View looking northeast at minor erosion along crest of Main Landfill - FEATURE E
30	P314_2177	1235	17/08/14	407883	7597661	Panoramic view looking north to south at west side of landfill
31	P314_2178	4316	17/08/14	407888	7597639	View looking northeast along west toe of Main Landfill
32	P314_2179	4260	17/08/14	407887	7597637	View looking south along west toe of Main Landfill. MW-8 in back right.
33	P314_2183	4327	17/08/14	407886	7597591	View looking north along west side of Main Landfill
34	P314_2184	4235	17/08/14	407887	7597589	View looking east along south side of Main Landfill
35	P314_2185	4389	17/08/14	407885	7597588	View looking northeast at minor depression on southwest corner of Main Landfill - FEATURE I
36	P314_2186	4446	17/08/14	407892	7597587	View looking north-northwest at minor depression on southwest corner of Main Landfill - FEATURE I
37	P314_2475	4470	19/08/14	408047	7597688	Water sampling at MW-5
38	P314_2476	4307	19/08/14	407991	7597682	View looking south along east crest of Main Landfill
39	P314_2477	4365	19/08/14	407991	7597683	View looking north along east crest of Main Landfill
40	P314_2478	1323	19/08/14	407989	7597682	Panoramic view looking south to north from west crest of landfill
41	P314_2479	4407	19/08/14	407973	7597709	View looking west-northwest at VT-1 and ATV tracks on north central area of Main Landfill cover
42	P314_2480	4390	19/08/14	407969	7597716	View looking northwest at slight depression on north cover of Main Landfill - FEATURE A
43	P314_2481	4264	19/08/14	407963	7597751	View looking south along east crest on northeast cover of Main Landfill
44	P314_2482	4346	19/08/14	407961	7597752	View looking northwest at vegetation along northeast crest of Main Landfill
45	P314_2483	1565	19/08/14	407943	7597764	Panoramic view looking south to northwest across north cover of Main Landfill
46	P314_2484	4389	19/08/14	407917	7597777	View looking southeast along north crest of Main Landfill
47	P314_2485	4267	19/08/14	407916	7597777	View looking southwest along northwest crest of Main Landfill
48	P314_2486	4294	19/08/14	407876	7597732	View looking south at VT-2
49	P314_2488	4259	19/08/14	407881	7597727	View looking east-southeast along northwest crest of Main Landfill
50	P314_2491	4290	19/08/14	407938	7597660	View looking north across west crest of Main Landfill
51	P314_2492	4272	19/08/14	407936	7597654	View looking southwest across crest of Main Landfill
52	P314_2493	4287	19/08/14	407939	7597654	View looking north-northwest at minor erosion on top west slope of Main Landfill - FEATURE D
53	P314_2494	4340	19/08/14	407926	7597662	View looking southeast at minor erosion on top west slope of Main Land - FEATURE D
54	P314_2495	4347	19/08/14	407903	7597629	View looking northeast along southwest crest of Main Landfill
55	P314_2496	4262	19/08/14	407902	7597628	View looking south along southwest crest of Main Landfill. VT-4 in foreground.
56	P314_2497	1165	19/08/14	407899	7597632	Panoramic view looking northwest to northeast across inside slope on west side of Main Landfill
57	P314_2498	4264	19/08/14	407900	7597620	View looking north at minor erosion near southwest crest of Main Landfill - FEATURE M
58	P314_2499	4276	19/08/14	407906	7597624	View looking northwest at minor erosion near southwest crest of Main Landfill - FEATURE M
59	P314_2500	4378	19/08/14	407901	7597612	View north at VT-4
60	P314_2501	4387	19/08/14	407905	7597613	View looking northwest at ATV ruts near crest on southwest corner of Main Landfill - FEATURE O
61	P314_2502	4298	19/08/14	407901	7597603	View looking north along southwest crest of Main Landfill
62	P314_2503	4372	19/08/14	407903	7597602	View looking east along south crest of Main Landfill
63	P314_2504	4394	19/08/14	407902	7597605	View looking southeast at linear depression 1m below crest on southwest corner of Main Landfill - FEATURE I
64	P314_2505	4368	19/08/14	407913	7597603	View looking east at minor depression at south crest of Main Landfill - FEATURE J

Table VI: Landfill Visual Inspection Photo Log – Main Landfill (page 3 of 3)

Photo (MLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
65	P314_2506	4402	19/08/14	407940	7597605	View looking east at linear depression on south crest of Main Landfill - FEATURE J
66	P314_2507	4420	19/08/14	407944	7597609	View looking south at linear depression on south crest of Main Landfill - FEATURE J
67	P314_2508	4387	19/08/14	407955	7597609	View looking west along south crest of Main Landfill
68	P314_2509	4275	19/08/14	407958	7597609	View looking southeast along south crest of Main Landfill
69	P314_2510	4431	19/08/14	407957	7597608	View looking south-southwest at 3 areas of erosion on south side slope of Main Landfill - FEATURE C
70	P314_2511	4353	19/08/14	407950	7597592	View looking north-northeast at 3 areas of erosion on south side slope of Main Landfill - FEATURE C
71	P314_2512	4350	19/08/14	407946	7597591	View looking west along south toe of Main Landfill
72	P314_2513	4371	19/08/14	407951	7597590	View looking southeast along south toe of Main Landfill
73	P314_2514	1415	19/08/14	407958	7597613	Panoramic view looking west to east across south cover of Main Landfill
74	P314_2515	4273	19/08/14	407970	7597630	View looking west at VT-3. VT-4 in background.
75	P314_2516	4415	19/08/14	407966	7597637	View looking south at localized depression on southeast side of VT-3 - FEATURE B
76	P314_2517	4317	19/08/14	407983	7597581	View looking northwest along crest from southeast corner of Main Landfill
77	P314_2518	4320	19/08/14	407984	7597582	View looking north along crest from southeast corner of Main Landfill
78	P314_2520	4330	19/08/14	407984	7597565	View looking northwest along toe on southeast corner of Main Landfill
79	P314_2521	4261	19/08/14	407989	7597565	View looking north along toe from southeast corner of Main Landfill
80	P314_2522	4358	19/08/14	407988	7597595	View looking east-southeast at minor erosion on southeast side slope of Main Landfill - FEATURE N
81	P314_2523	4364	19/08/14	407996	7597617	View looking northeast at linear depression below crest on southeast slope of Main Landfill - FEATURE K
82	P314_2524	4419	19/08/14	408003	7597617	View looking northwest at linear depression below crest on southeast slope of Main Landfill - FEATURE K
83	P314_2525	1383	19/08/14	407994	7597621	Panoramic view looking southwest to north across south cover of Main Landfill
84	P314_2526	4307	19/08/14	408049	7597694	View north at vegetation along east side slope of Main Landfill.
Soil Sampling and Groundwater Wells						
MW5	P314_2143	4269	17/08/14	408048	7597693	Sampling location P314-5W located downgradient of Main Landfill
MW6	P314_2161	4393	17/08/14	407849	7597723	Sampling location P314-6W located downgradient of Main Landfill
6W	P314_2162	4368	17/08/14	407843	7597724	View looking east MW-6 located downgradient of Main Landfill
MW7	P314_2175	4299	17/08/14	407911	7597681	Sampling location P314-7W located downgradient of Main Landfill
7W	P314_2176	4419	17/08/14	407907	7597685	View looking southeast MW-7 located downgradient of Main Landfill
MW8	P314_2180	4426	17/08/14	407869	7597599	Sampling location P314-8W located downgradient of Main Landfill
8W	P314_2181	4298	17/08/14	407864	7597600	View looking east at MW-8 located downgradient of Main Landfill

3.5 THERMAL MONITORING DATA

All thermistors at the Main Landfill were inspected and found to be in good condition with no significant concerns identified. Data from all thermistors was successfully retrieved and all analogues/thermocouples were observed to be functioning properly at the time of the inspection. All clocks exhibited slight drift and were synchronized using the Prolog software.

Batteries were replaced in all dataloggers with new manufacturer supplied batteries (ULB-1 and ULB-15) and are expected to be functional until summer 2019.

Thermistor Annual Maintenance Reports (VT-1 to VT-4) are presented in the following pages.

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location: Main Landfill
Thermistor Number: VT-1	Inclination: Vertical
Install Date: 2004-09-05	First Date Event: 2007-08-23 Last Date Event: 2009-08-09
Coordinates and Elevation: N 9681.35 E 9291.581 Elev 10.714	
Length of Cable (m) 7.8	Cable Lead Above Ground (m) 2.6 Nodal Points: 11
Datalogger Serial # 108043	Cable Serial Number: 1607

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads	x		
Battery Installation Date	17/08/2014 (new)		
Battery Levels	Main 11.34	Aux 12.9	
	(11.34 prior to change)	(12.53 prior to change)	

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	11.784	6.6293
2	12.668	5.154
3	13.929	3.2344
4	15.337	1.3116
5	16.523	-0.2068
6	17.306	-1.0953
7	18.801	-2.7468
8	19.89	-3.9362

Bead	ohms	Degrees C
9	20.78	-4.8391
10	22.00	-5.9812
11	22.56	-6.4357

Observations and Proposed Maintenance

Download file: Site_043_PIN 3 VT-1_Aug_17_2014
Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location: Main Landfill
Thermistor Number: VT-2	Inclination: Vertical
Install Date: 2004-09-05	First Date Event: 2007-08-23 Last Date Event: 2009-08-09
Coordinates and Elevation: N 9698.82 E 9209.988 Elev 7.92	
Length of Cable (m) 9.5	Cable Lead Above Ground (m) 4.6 Nodal Points: 14
Datalogger Serial # 111103	Cable Serial Number: 1608

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads	x		
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main	11.34	Aux 13.63
		11.34 (prior to change)	13.14 (prior to change)

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	8.424	13.5622
2	7.152	17.0282
3	8.559	13.2915
4	7.845	15.1154
5	10.757	8.511
6	12.476	5.4509
7	13.345	4.0736
8	14.907	1.8519

Bead	ohms	Degrees C
9	16.316	0.0012
10	16.981	-0.7968
11	17.69	-1.5995
12	18.447	-2.4931
13	19.05	-3.1026
14	19.867	-3.8365

Observations and Proposed Maintenance

Download file: Site_003_PIN-3 VT-2_Aug_17_2014 Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19
--

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location: Main Landfill
Thermistor Number: VT-3	Inclination: Vertical
Install Date: 2004-09-05	First Date Event: 2007-08-23 Last Date Event: 2009-08-09
Coordinates and Elevation: N 9602.44 E 9298.113 Elev 10.014	
Length of Cable (m): 7.8	Cable Lead Above Ground (m): 2.5 Nodal Points: 11
Datalogger Serial #: 111108	Cable Serial Number: 1609

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads	x		
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main	11.34	Aux 13.26
		11.34 (prior to change)	12.90 (prior to change)

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	11.691	-
2	12.622	-
3	13.918	-
4	15.329	-
5	16.671	-
6	17.508	-
7	19.069	-
8	20.04	-

Bead	ohms	Degrees C
9	21.26	-5.2703
10	22.18	-6.1513
11	22.8	-6.6286

Observations and Proposed Maintenance

Download file: Site_103_VT-3_Aug_17_2014
Unable to read sensors 1 through 8 on Prolog2 software.

Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location Main Landfill
Thermistor Number: VT-4	Inclination Vertical
Install Date: 2004-09-05	First Date Event 2007-08-23 Last Date Event 2009-08-09
Coordinates and Elevation N 9588.91 E 9233.938 Elev 7.82	
Length of Cable (m) 8.2	Cable Lead Above Ground (m) 3.4 Nodal Points 12
Datalogger Serial # 108093	Cable Serial Number 1610

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads	x		
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main 11.34	Aux 13.5	
	(11.34 prior to change)	(13.14 prior to change)	

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	8.383	13.3591
2	8.223	14.0667
3	11.543	7.0468
4	12.78	4.9391
5	13.818	3.3743
6	15.365	1.2587
7	16.477	-0.1763
8	17.235	-1.0647

Bead	ohms	Degrees C
9	17.895	-1.846
10	18.81	-2.8298
11	19.566	-3.6427
12	19.896	-3.9179

Observations and Proposed Maintenance

Download file: Site_093_PIN-3 VT-4_Aug_17_2014 Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19
--

3.6 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results for the 2014 Main Landfill samples are presented in Table VII hereafter. Certificates of analyses and results of field duplicates collected as part of the QA/QC program are presented in Annexes 1 and 2 at the end of this report.

Table VII: Soil Chemical Analysis Results – Main Landfill

Sample #	Location	Depth (cm)	Parameters												F1 C ₆ -C ₁₀ [mg/kg]	F2 C ₁₀ -C ₁₆ [mg/kg]	F3 C ₁₆ -C ₃₄ [mg/kg]
			As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	Hg [mg/kg]	PCBs [mg/kg]					
Detection Limit			0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.01	0.1	10	50	50		
Upgradient Soil Samples																	
P314-5WA	MW-5	0-15	1.4	0.01	4.7	2.4	4.8	<5	3.0	8	<0.01	<0.1	<10	<50	<50		
P314-5WB		40-50	0.9	<0.01	6.3	2.1	3.9	<5	3.3	6	<0.01	<0.1	<10	<50	<50		
Downgradient Soil Samples																	
P314-6WA	MW-6	0-15	0.9	0.02	6.0	3.3	14.1	<5	6.1	8	<0.01	<0.1	<10	<50	<50		
P314-6WB		40-50	0.8	<0.01	4.0	3.2	14.2	<5	4.6	6	<0.01	<0.1	<10	<50	<50		
P314-7WA	MW-7	0-15	2.0	<0.01	4.5	2.0	7.2	<5	3.4	8	<0.01	<0.1	<10	<50	<50		
P314-7WB		40-50	1.1	0.01	4.3	2.3	7.3	<4.9	3.7	7	<0.01	<0.1	<10	<50	<50		
P314-8WA	MW-8	0-15	0.7	<0.01	4.0	2.0	5.1	<5	3.1	5	<0.01	<0.1	<10	<50	<50		
P314-8WB		40-50	0.6	<0.01	6.4	2.4	7.3	<5	4.6	5	<0.01	<0.1	<10	<50	<50		

3.7 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results of analytical data for the 2014 Main Landfill samples are presented in Table VIII. Certificates of analysis and groundwater samples collected as part of the QA/QC program are presented in Annexes 1 and 2.

Table VIII: Groundwater Chemical Analysis Results – Main Landfill

Sample #	Location	Parameters												
		As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Ni [mg/L]	Zn [mg/L]	Hg [mg/L]	PCBs [ug/L]	F1	F2	F3
												C ₆ -C ₁₀ [mg/L]	C ₁₀ -C ₁₆ [mg/L]	C ₁₆ -C ₃₄ [mg/L]
Detection Limit		0.0002	0.00001	0.0005	0.0001	0.001	0.0001	0.0005	0.001	0.000005	0.1	0.2	0.2	0.1
Upgradient Groundwater Sample														
P314-5W	MW-05	0.0010	<0.00001	0.0069	0.0048	0.003	0.0002	0.0235	0.008	0.000011	<0.1	<0.2	0.2	<0.1
Downgradient Groundwater Samples														
P314-6W	MW-06	0.0187	<0.00001	0.6250	0.0093	0.041	0.0174	0.2200	0.507	0.000020	<0.1	<0.2	<0.2	<0.1
P314-7W	MW-07	0.0044	0.00009	0.0506	0.0005	0.007	0.0016	0.0125	0.014	<0.000005	<0.1	<0.2	0.2	<0.1
P314-8W	MW-08	0.0172	0.00083	0.2310	0.0167	0.026	0.0088	0.1920	0.076	0.000026	<0.1	<0.2	0.2	<0.1

3.8 MONITORING WELL SAMPLING/INSPECTION LOGS (MW-5 TO MW-8)

The monitoring well sampling and inspection logs for MW-5 to MW-8 are presented in this section.

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	09:45
Names of Samplers:	A.Passalis		
Landfill Name:	Main Landfill		
Monitoring Well ID:	MW-5		
Sample Number:	P314-5W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	47		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	390		
Length screened section (cm)=	333		
Depth to top of screen (cm)= (from ground surface)	57		
Depth to water surface (cm)= (from top of pipe)	189	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	142		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	287.5	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	98.5		
Static volume of water in well (mL)=	1934		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	1.5 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.5		
Final Conductivity (uS/cm)=	1100		
Final Temperature (degC)=	2.6		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	09:20
Names of Samplers:	A.Passalis		
Landfill Name:	Main Landfill		
Monitoring Well ID:	MW-6		
Sample Number:	P314-6W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	55		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	473		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	53		
Depth to water surface (cm)= (from top of pipe)	168	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	113		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	284	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	116		
Static volume of water in well (mL)=	2278		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	4.0 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.6		
Final Conductivity (uS/cm)=	1472		
Final Temperature (degC)=	2.6		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	08:50
Names of Samplers:	A.Passalis		
Landfill Name:	Main Landfill		
Monitoring Well ID:	MW-7		
Sample Number:	P314-7W	Slow recovery	
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	30		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	480		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	60		
Depth to water surface (cm)= (from top of pipe)	240	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	210		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	278	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	38		
Static volume of water in well (mL)=	746		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	800 mL		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	8.5		
Final Conductivity (uS/cm)=	2010		
Final Temperature (degC)=	4.5		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	08:30
Names of Samplers:	A.Passalis		
Landfill Name:	Main Landfill		
Monitoring Well ID:	MW-8		
Sample Number:	P314-8W	(Dup: P314-BDW1)	
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	53		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	475		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	55		
Depth to water surface (cm)= (from top of pipe)	122	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	69		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	256	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	134		
Static volume of water in well (mL)=	2631		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	4.0 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.6		
Final Conductivity (uS/cm)=	2250		
Final Temperature (degC)=	2.5		

4 NWS LANDFILL

4.1 SUMMARY

On August 17, 2014 soil sampling and a visual inspection were completed at the NWS Landfill.

PCBs concentrations were not detected in the collected soil samples. PHC F3 fraction was detected in surface sample at P3-1, and in surface and depth samples at P3-4. Slightly elevated levels of zinc were also detected in surface sample at P3-1 and in surface sample at P3-4.

As of 2014, no features with “significant” or “unacceptable” severity ratings were identified in the Preliminary Stability Assessment of the NWS Landfill. No exposed debris was noticed. A number of minor settlement and erosional features, consistent with observations from the previous inspection period, were noted during the 2014 investigation. Two new features were noted.

At this time, the overall performance of the landfill is rated as acceptable.

The Visual Inspection Checklist/Report has been completed as per the TOR and is included as Table IX of this report.

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Table IX: Visual Inspection Checklist / Report – NWS Landfill

**DEW LINE CLEANUP: POST-CONSTRUCTION – LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST**

INSPECTION REPORT – PAGE 1 of 2

SITE NAME: PIN-3 – Lady Franklin Point
LANDFILL DESIGNATION: NWS Landfill (Regrade Landfill)
DATE OF INSPECTION: August 17, 2014
DATE OF PREVIOUS INSPECTION: August 9, 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.

TABLE IX: NWS LANDFILLLANDFILL VISUAL INSPECTION (PAGE 2 OF 2)

Site Name: PIN-3 Lady Franklin Point
Landfill: NWS Landfill
Designation: Existing Regrade Area
Date Inspected: August 17, 2014
Inspected by: Andrew Passalis, P.Eng.

Signature: 

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE B See Figure PIN-3.3 (NW crest) - New Obs.	0.5 - 2 m	0.2 - 0.4 m	0.15 - 0.2 m	Isolated	Minor depressions	NWS-5, 8	Acceptable	Depressions on North side slope below crest
Erosion	Yes	FEATURE C See Figure PIN-3.3 (Between central and E lobes) - New Obs.	15 m	0.3 - 1.0 m	0.1 - 0.15 m	Isolated	Minor erosion	NWS-16	Acceptable	Located along west toe of East lobes
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	Yes	See Figure PIN-3.3 (central and E lobes)	N/A	N/A	N/A	Sparse	N/A	NWS-11, 12, 15-18, 21-23	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	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Other Features of Note:	Yes	FEATURE A See Figure PIN-3.3 (SE of central lobe)	5 m	3 m	0.1 m	Isolated	Ponded-stagnant water	NWS-9, 10, 13	Acceptable	Possible construction artifact. No clear evidence of seepage. Similar to 2009 observations
Additional Photos	Yes	See Figure PIN-3.3 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									

4.2 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for the NWS Landfill has been completed as per the TOR and is included as Table X below.

Table X: Preliminary Stability Assessment – NWS 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
Debris exposure	Not observed	None
Overall Landfill Performance	Acceptable	

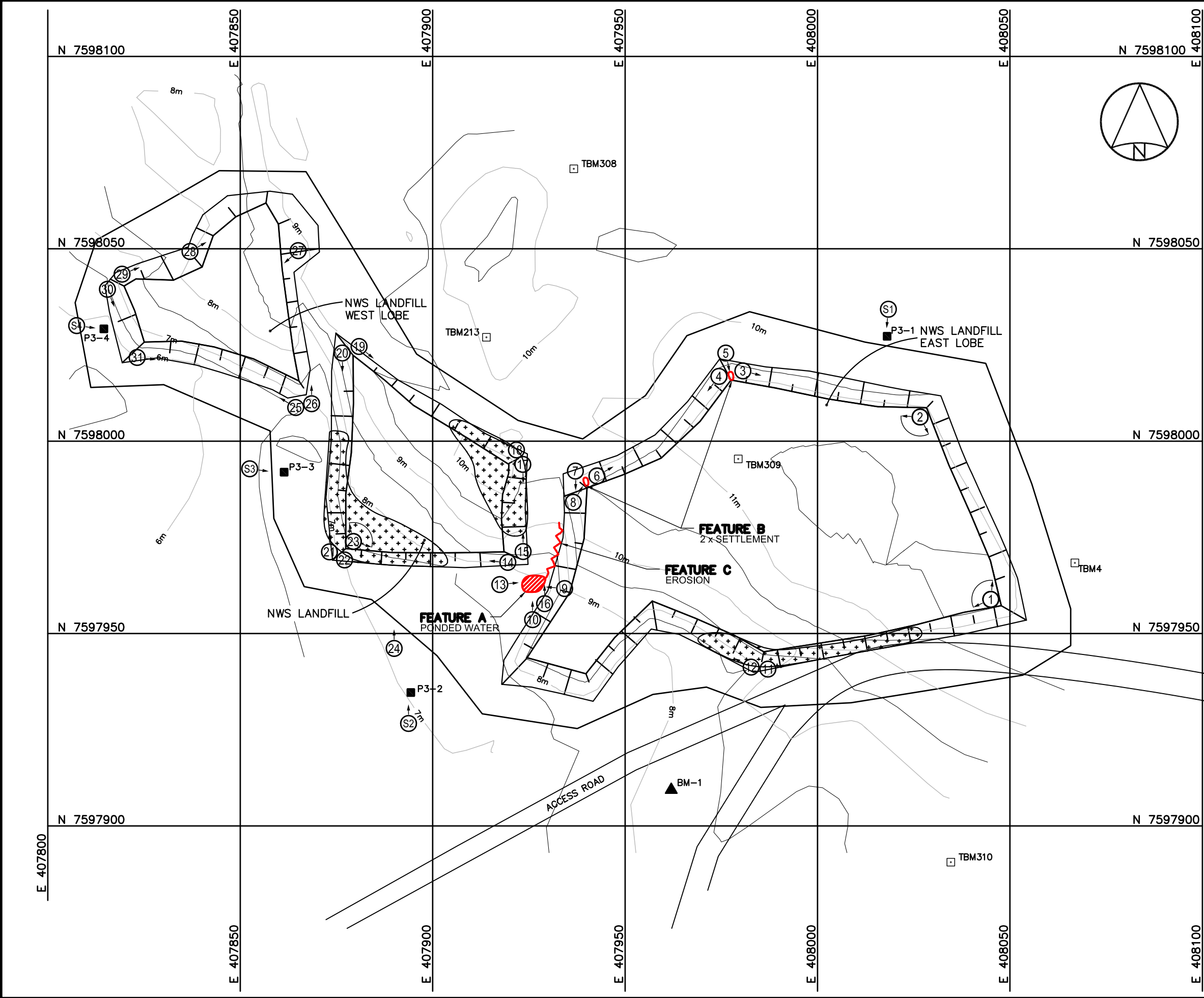
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears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

4.3 LOCATION PLAN

The Location Plan for the NWS Landfill has been completed as per the TOR and is presented in Figure PIN-3.3.

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LEGEND

- TBM4 □ TEMPORARY BENCHMARK
- BM-1 ▲ PERMANENT BENCHMARK
- MONITORING SOIL SAMPLE LOCATION
- SETTLEMENT (NTS)
- ~ EROSION (NTS)
- ▨ PONDED WATER
- ⊕ SPARSE VEGETATION
- ① → APPROX. PHOTOGRAPHIC VIEWPOINT

1	FINAL	15-04-23	P.L.	A.P.	P.G.
NO.	VERSION	DATE	BY	VERIF.	APPR.

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Défence Construction Canada

FINAL REPORT

COLLECTION OF LANDFILL MONITORING DATA

PIN-3, LADY FRANKLIN POINT (NUNAVUT)

EXISTING NWS 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 www.biogenie-env.com

MEASUREMENT UNIT	SCALE:	DATE (month-year):
Meter	1 : 1,000	APRIL 2015
DRAWN BY:	VERIFIED BY:	APPROVED BY:
L. LA PIERRE	A. PASSALIS	P. GÉLINAS P. Eng.
PROJECT NO:	DRAWING NO:	PAGE
CD2656_400_403	CD2656_400_403_101-PIN-3_C	PL

FIGURE PIN-3.3

4.4 PHOTOGRAPHIC RECORDS

The Photographic Record for the NWS Landfill has been completed as per the TOR and is included as Table XI hereafter. The Photographic Record contains only an index of photographs. Full sized photographs are contained in the Addendum DVD-ROM.

Table XI: Landfill Visual Inspection Photo Log – NWS Landfill (page 1 of 2)

Site Name: PIN-3, Lady Franklin Point
Landfill: NWS Landfill
Date Inspected: August 17, 2014
Inspected by: Andrew Passalis, P.Eng.

Photo (NWS-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
1	P314_2187	1591	17/08/14	408046	7597958	Panoramic view looking southwest to north from southeast corner of NWS Landfill
2	P314_2188	1426	17/08/14	408027	7598006	Panoramic view looking south-southeast to west from northeast corner of NWS Landfill
3	P314_2189	4316	17/08/14	407978	7598018	View looking east along north toe of NWS Landfill
4	P314_2190	4408	17/08/14	407975	7598017	View looking southwest along north toe of NWS Landfill
5	P314_2191	4375	17/08/14	407976	7598021	View looking south at minor depression on north side slope of NWS Landfill - FEATURE B
6	P314_2192	4288	17/08/14	407940	7597989	View looking northeast along north side of NWS Landfill
7	P314_2193	4348	17/08/14	407938	7597988	View looking south along west side of lobe at NWS Landfill
8	P314_2194	4436	17/08/14	407939	7597986	View looking north-northeast at minor depression on north side slope - FEATURE B
9	P314_2195	4441	17/08/14	407933	7597962	View looking west at ponded water between lobes - FEATURE A
10	P314_2196	4346	17/08/14	407926	7597955	View looking north at ponded water between lobes - FEATURE A
11	P314_2197	4309	17/08/14	407986	7597941	View looking west along south side of lobe at NWS Landfill
12	P314_2198	4323	17/08/14	407984	7597941	View looking northeast along south side of lobe at NWS Landfill
13	P314_2201	4426	17/08/14	407919	7597963	View looking east at ponded water located between lobes - FEATURE A
14	P314_2202	4327	17/08/14	407921	7597969	View looking west along south side of middle lobe at NWS Landfill
15	P314_2203	4408	17/08/14	407923	7597971	View looking north along east side of middle lobe at NWS Landfill
16	P314_2204	4293	17/08/14	407930	7597960	View looking north at minor erosion north of ponded water between lobes - FEATURE C
17	P314_2205	4370	17/08/14	407923	7597995	View looking south along east side of middle lobe at NWS Landfill
18	P314_2206	4389	17/08/14	407922	7597997	View looking northwest along north side of middle lobe of NWS Landfill
19	P314_2207	4391	17/08/14	407879	7598024	View looking southeast along north side of middle lobe of NWS Landfill
20	P314_2208	4319	17/08/14	407877	7598023	View looking south along west side of middle lobe of NWS Landfill

Table XI: Landfill Visual Inspection Photo Log – NWS Landfill (page 2 of 2)

Photo (NWS-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
21	P314_2209	4420	17/08/14	407874	7597971	View looking north along west side of middle lobe of NWS Landfill
22	P314_2210	4316	17/08/14	407876	7597970	View looking east along south side of middle lobe of NWS Landfill
23	P314_2211	1431	17/08/14	407878	7597972	Panoramic view looking north to east from southwest corner of middle lobe at NWS Landfill
24	P314_2214	4408	17/08/14	407890	7597948	View looking north at south side of middle lobe at NWS Landfill
25	P314_2215	4395	17/08/14	407866	7598009	View looking northwest along south side of west lobe at NWS Landfill
26	P314_2216	4368	17/08/14	407867	7598010	View looking north along east side of west lobe at NWS Landfill
27	P314_2217	4254	17/08/14	407864	7598049	View looking southwest across cover of west lobe at NWS Landfill
28	P314_2219	4284	17/08/14	407837	7598049	View looking northeast at disturbed area on north end of west lobe at NWS Landfill
29	P314_2220	4326	17/08/14	407819	7598043	View looking northeast along northwest side of west lobe at NWS Landfill
30	P314_2221	4408	17/08/14	407817	7598041	View looking south-southeast along west side of west lobe at NWS Landfill
31	P314_2222	4284	17/08/14	407824	7598021	View looking east-southeast along south side of west lobe at NWS Landfill
Soil Sampling						
1	P314_2199	4392	17/08/14	408018	7598027	Sampling location P314-1 located upgradient of NWS Landfill
S1	P314_2200	4382	17/08/14	408018	7598032	View looking south at P314-1 located upgradient of NWS Landfill
2	P314_2212	4366	17/08/14	407894	7597934	Sampling location P314-2 located downgradient of NWS Landfill
S2	P314_2213	4405	17/08/14	407895	7597928	View looking north at P314-2 located downgradient of NWS Landfill
3	P314_2223	4420	17/08/14	407860	7597992	Sampling location P314-3 located downgradient of NWS Landfill
S3	P314_2224	4466	17/08/14	407854	7597993	View looking northeast at P314-3 located downgradient of NWS Landfill
4	P314_2225	4324	17/08/14	407814	7598029	Sampling location P314-4 located downgradient of NWS Landfill
S4	P314_2226	4378	17/08/14	407809	7598030	View looking east at P314-4 located downgradient of NWS Landfill

4.5 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results for the 2014 NWS Landfill samples are presented in Table XII below. Certificate of analysis and field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Annexes 1 and 2 at the end of this report.

Table XII: Soil Chemical Analysis Results – NWS Landfill

Sample #	Location	Depth (cm)	Parameters												F1	F2	F3
			As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	Hg [mg/kg]	PCBs [mg/kg]					
			C ₆ -C ₁₀ [mg/kg]	C ₁₀ -C ₁₆ [mg/kg]	C ₁₆ -C ₃₄ [mg/kg]												
Detection Limit			0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.01	0.1	10	50	50		
Upgradient Soil Samples																	
P314-1A	P3-1	0-15	2.1	0.28	5.2	3.0	13.5	5.7	4.9	57	0.07	<0.1	<10	<50	108		
P314-1B		25-35	1.0	<0.01	2.6	1.3	1.9	<5	1.5	4	<0.01	<0.1	<10	<50	<50		
Downgradient Soil Samples																	
P314-2A	P3-2	0-15	1.5	0.03	4.9	2.7	6.9	<5	3.4	7	0.01	<0.1	<10	<50	<50		
P314-2B		40-50	1.0	<0.01	7.0	3.1	5.3	<5	4.5	7	<0.01	<0.1	<10	<50	<50		
P314-3A	P3-3	0-15	1.4	0.05	4.3	2.3	7.6	<5	3.5	7	<0.01	<0.1	<10	<50	<50		
P314-3B		40-50	2.4	0.27	5.3	3.9	14.8	<5	6.8	7	0.01	<0.1	<10	<50	<50		
P314-4A	P3-4	0-15	1.5	0.53	2.8	1.1	8.9	5.9	2.8	55	0.10	<0.1	<10	<50	60		
P314-4B		40-50	6.2	0.53	8.8	3.1	22.2	6.6	10.3	13	0.04	<0.1	<10	<50	53		

5 SOUTH LANDFILL

5.1 SUMMARY

On August 18, 2014 soil sampling and a visual inspection were completed at the South Landfill.

PCBs or relatively high metal concentrations were not detected in the collected soil samples. TPH (PHC Fraction F3) was detected in upgradient station P3-5 (surface) and P3-9 (depth) and at both depth at downgradient station P3-8.

As of 2014, no features with “significant” or “unacceptable” severity ratings were identified in the Preliminary Stability Assessment of the South Landfill. Crushed drums and small pieces of metals are exposed at various locations. No erosion features and two new minor settlements were noted during the 2014 investigation. Three previously observed and one new stainings were noticed.

At this time, the overall performance of the landfill is rated as acceptable.

The Visual Inspection Checklist/Report has been completed as per the TOR and is included as Table IV of this report.

Table XIII: Visual Inspection Checklist / Report – South Landfill

**DEW LINE CLEANUP: POST-CONSTRUCTION – LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST**

INSPECTION REPORT – PAGE 1 of 3

SITE NAME: PIN-3 – Lady Franklin Point
LANDFILL DESIGNATION: South Landfill (Regrade Landfill)
DATE OF INSPECTION: August 18, 2014
DATE OF PREVIOUS INSPECTION: August 9, 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.

TABLE XV: SOUTH LANDFILL VISUAL INSPECTION (PAGE 2 OF 3)

Site Name: PIN-3 Lady Franklin Point
Landfill: South Landfill
Designation: Existing Regrade Area
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Signature: 

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	Feature I See Figure PIN-3.4 (S cover of E lobe) - New Obs.	8 m	8 m	0.3 - 0.5 m	Isolated (<3%)	Subtle depression	SLF-15	Acceptable	Bowl shaped depression
		Feature J See Figure PIN-3.4 (NE and SW sides of E lobe) - New Obs.	0.25 - 3 m	0.25 - 0.5 m	0.1 - 0.2 m	Occasional	Minor depression	SLF-16, 25	Acceptable	Pothole and linear depressions on side slopes
Erosion	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	Landfill cover is stable. Equipment rutting around perimeter contributing to localized ponding of water adjacent to landfill cells
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	Yes	See Figure PIN-3.4 (E, W, S side slopes)	N/A	N/A	N/A	Sparse	N/A	SLF-7, 9, 10, 14, 15, 22-24, 29, 31, 34, 49	N/A	Sparse vegetation growth on south, east and west side slopes of all lobes.
Staining	Yes	Feature A See Figure PIN-3.4 (NW corner of West-North lobe)	7 m	2 m	unknown	N/A	Rust coloured staining in low lying area adjacent to toe of landfill	SLF-46, 48	Acceptable	Rust colour staining in previously identified area adjacent to toe of landfill. Consistent with 2009 observation
		Feature B See Figure PIN-3.4 (E side of West-North lobe)	0.7 m	0.4 m	unknown	N/A	Rust coloured staining adjacent to ponded water	SLF-38	Acceptable	Rust colour staining in vegetated area on east side of landfill resulting from intermittent ponding and possible seepage. Consistent with 2009 observation
		Feature C See Figure PIN-3.4 (SE of East lobe)	8 m	4 m	0.15 m	N/A	Heavily stained/oxidized area adjacent to lobe	SLF-10, 17-20	Acceptable	Rust colour staining and precipitate. Consistent with 2009 observation
		Feature K See Figure PIN-3.4 (NE of East lobe) - New Obs.	5 m	0.5 m	unknown	N/A	Stained/oxidized area adjacent to lobe	SLF-8	Acceptable	Small localized rust colour staining

TABLE XV: SOUTH LANDFILL VISUAL INSPECTION (PAGE 3 OF 3)

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
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 D See Figure PIN-3.4 (S side of East lobe)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not visible at time of inspection
		Feature E See Figure PIN-3.4 (E of East lobe)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not visible at time of inspection
Debris Exposed	Yes	Feature F See Figure PIN-3.4 (S of West lobe)	0.15 m	0.2 m	unknown	Isolated	Partially exposed crushed drum	SLF-50	Acceptable	N/A
		Feature G See Figure PIN-3.3 (E of West-South lobe)	0.05 m	0.05 m	0.05 m	Isolated	Small piece of miscellaneous metal and wire	SLF-8, 9	Acceptable	N/A
		Feature H See Figure PIN-3.4 (SE of West-North lobe)	0.35 m	0.05 m	unknown	Isolated	Small piece of metal strapping	SLF-14	Acceptable	N/A
		Feature L See Figure PIN-3.4 (NE of East lobe) - New Obs.	0.4 m	0.2 m	unknown	N/A	Partially exposed crushed drum	SLF-1	Acceptable	Located 4 m north of east lobe
Presence/Condition of Monitoring Instruments	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Other Features of Note:	Yes	FEATURE M See Figure PIN-3.4 (E and W of East lobe, N and E of West-North lobe)	N/A	N/A	N/A	N/A	Occasional areas of ponded water in low lying areas adjacent to lobes	SLF-13, 23-26, 30, 37, 39, 43 and 44	Acceptable	Acceptable as not in contact with landfill lobes
Additional Photos	Yes	See Figure PIN-3.4 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									

5.2 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for South Landfill has been completed as per the TOR and is included as Table XVI below.

Table XIV: Preliminary Stability Assessment – South Landfill

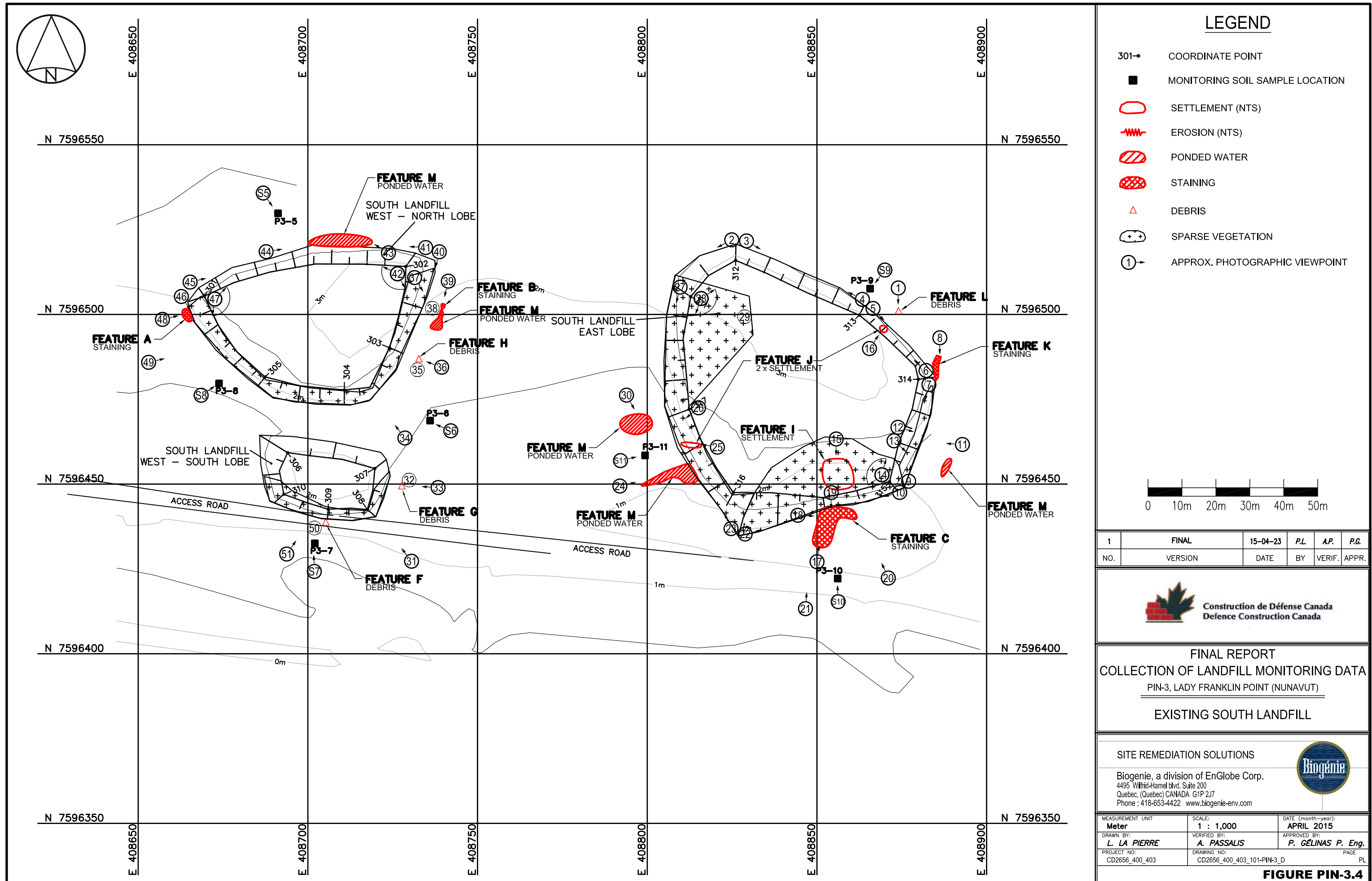
Feature	Severity Rating	Extent
Settlement	Acceptable	Occasional
Erosion	Not observed	None
Frost Action	Not observed	None
Staining	Acceptable	Occasional
Vegetation Stress	Not observed	None
Seepage/Ponded Water	Acceptable	N/A (outside landfill area)
Debris exposure	Acceptable	N/A (outside landfill area)
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

5.3 LOCATION PLAN

The Location Plan for the South Landfill has been completed as per the TOR and is presented in Figure PIN-3.4.



5.4 PHOTOGRAPHIC RECORDS

The Photographic Record for the South Landfill has been completed as per the TOR and is included as Table XV hereafter. The Photographic Record contains only an index of photographs. Full sized photographs are contained in the Addendum DVD-ROM.

Table XV: Landfill Visual Inspection Photo Log – South Landfill (page 1 of 3)

Site Name: PIN-3, Lady Franklin Point
Landfill: South Landfill
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Photo (SLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
EAST LOBE						
1	P314_2358	4430	18/08/14	408867	7596506	View south at partially exposed crushed drum debris - FEATURE L (new)
2	P314_2359	4391	18/08/14	408819	7596521	View looking southwest from northwest corner of East Lobe
3	P314_2360	4343	18/08/14	408822	7596522	View looking east-southeast from northwest corner of East Lobe
4	P314_2361	4330	18/08/14	408857	7596504	View looking west-northwest along north side of East Lobe
5	P314_2362	4350	18/08/14	408858	7596503	View looking southeast along north side of East Lobe
6	P314_2363	4262	18/08/14	408876	7596483	View looking northwest from northeast corner of East Lobe. Sampling at P314-9
7	P314_2364	4332	18/08/14	408876	7596481	View looking south along east side of East Lobe
8	P314_2365	4393	18/08/14	408879	7596491	View looking south at iron colored staining near northeast toe of East Lobe - FEATURE K (new)
9	P314_2366	4389	18/08/14	408869	7596450	View looking north along east side of East Lobe
10	P314_2367	4380	18/08/14	408868	7596449	View looking southwest along south side of East Lobe
11	P314_2368	4406	18/08/14	408884	7596462	View looking west at orange discoloration east of East Lobe
12	P314_2369	4402	18/08/14	408868	7596466	View looking east at orange discoloration east of East Lobe
13	P314_2370	4426	18/08/14	408867	7596462	View looking southeast at ponded water south east of East Lobe
14	P314_2371	1537	18/08/14	408863	7596451	Panoramic view looking southwest to north from southeast corner of East Lobe
15	P314_2372	4406	18/08/14	408849	7596462	View looking south at depression on southeast cover of East Lobe - FEATURE I
16	P314_2375	4367	18/08/14	408859	7596491	View north at small pothole depression on northeast side of East Lobe - Feature J (new)
17	P314_2376	4387	18/08/14	408843	7596429	View looking north at ponded area and rust colored staining along south toe of East Lobe - FEATURE C
18	P314_2377	4265	18/08/14	408839	7596441	View looking east at ponded area and rust colored staining along south toe of East Lobe - FEATURE C
19	P314_2378	4384	18/08/14	408848	7596446	View looking south at ponded area and rust colored staining along south toe of East Lobe - FEATURE C
20	P314_2379	4229	18/08/14	408864	7596424	View looking northwest at southeast corner of East Lobe

Table XV: Landfill Visual Inspection Photo Log – South Landfill (page 2 of 3)

Photo (SLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
EAST LOBE (CONT'D)						
21	P314_2380	4415	18/08/14	408840	7596414	View looking N at south side of East Lobe
22	P314_2383	4312	18/08/14	408821	7596435	View looking east-northeast along south side of East Lobe
23	P314_2384	4327	18/08/14	408818	7596436	View looking northwest along west side of East Lobe
24	P314_2385	4432	18/08/14	408786	7596450	View looking northeast at ponded water west of East Lobe
25	P314_2386	4397	18/08/14	408812	7596462	View looking northwest at depression on west toe of East Lobe - FEATURE J (new)
26	P314_2388	4313	18/08/14	408807	7596472	View looing southwest at ponded area along west toe of East Lobe
27	P314_2389	4303	18/08/14	408802	7596507	View looking south along west side of East Lobe
28	P314_2390	1559	18/08/14	408808	7596506	Panoramic view looking northeast to south from northwest corner of East Lobe
29	P314_2391	4369	18/08/14	408821	7596500	Typical sparse vegetation on cover of East Lobe
30	P314_2394	4340	18/08/14	408787	7596475	View looking southeast at ponded water southwest of East Lobe
WEST LOBE						
31	P314_2396	4300	18/08/14	408723	7596428	View looking northwest at West Lobe
32	P314_2397	4367	18/08/14	408723	7596450	View of partially buried miscellaneous metal debris east of West Lobe - FEATURE G
33	P314_2399	4266	18/08/14	408732	7596449	View looking west at metal debris on east side of West Lobe - FEATURE G
34	P314_2400	4431	18/08/14	408721	7596463	View looking northwest at West Lobe
35	P314_2401	4457	18/08/14	408725	7596485	Metal surface debris located near east toe of West Lobe - FEATURE H
36	P314_2402	4357	18/08/14	408731	7596485	View looking west at metal debris east of West Lobe - FEATURE H
37	P314_2406	4361	18/08/14	408724	7596511	View looking southeast at ponded water east of West Lobe
38	P314_2407	4469	18/08/14	408732	7596502	View of orange coloured staining and precipitate adjacent to ponded water east of West Lobe - FEATURE B
39	P314_2408	4351	18/08/14	408734	7596508	View looking south at ponded water east of West Lobe
40	P314_2409	4375	18/08/14	408730	7596519	View looking south along east side of West Lobe
41	P314_2410	4351	18/08/14	408729	7596520	View looking west along north side of West Lobe
42	P314_2411	1545	18/08/14	408719	7596512	Panoramic view looking south to west from northeast corner of West Lobe
43	P314_2412	4415	18/08/14	408717	7596518	View looking northwest at ponded area north of West Lobe - FEATURE M
44	P314_2413	4445	18/08/14	408680	7596518	View looking east-northeast at ponded area north of West Lobe - FEATURE M
45	P314_2416	4317	18/08/14	408658	7596509	View looking northeast along north side of West Lobe
46	P314_2417	4373	18/08/14	408656	7596507	View looking south along west side of West Lobe
47	P314_2418	1623	18/08/14	408664	7596505	Panoramic view looking northeast to south from northwest corner of West Lobe
48	P314_2419	4408	18/08/14	408650	7596498	View east at orange coloured staining adjacent to northwest corner of West Lobe - FEATURE A
49	P314_2420	4351	18/08/14	408646	7596486	View looking northeast at west side of West Lobe
50	P314_2424	4407	18/08/14	408696	7596438	View of partially buried miscellaneous metal debris south of West Lobe - FEATURE F
51	P314_2425	4353	18/08/14	408688	7596430	View looking northeast at south side of West Lobe

Table XV: Landfill Visual Inspection Photo Log – South Landfill (page 3 of 3)

Photo (SLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
Soil Sampling						
5	P314_2426	4334	18/08/14	408684	7596531	Sampling location P314-5 located upgradient of South Landfill - West
S5	P314_2427	4411	18/08/14	408681	7596534	View looking southeast at P314-5 located upgradient of South Landfill - West
6	P314_2404	4378	18/08/14	408729	7596469	Sampling location P314-6 located downgradient of South Landfill - West
S6	P314_2405	4421	18/08/14	408733	7596466	View looking west-northwest at P314-6 located downgradient of South Landfill - West
7	P314_2414	4414	18/08/14	408695	7596433	Sampling location P314-7 located downgradient of South Landfill - West
S7	P314_2415	4332	18/08/14	408695	7596428	View looking north at P314-7 located downgradient of South Landfill - West
8	P314_2421	4327	18/08/14	408667	7596479	Sampling location P314-8 located upgradient of South Landfill - West
S8	P314_2422	4351	18/08/14	408663	7596477	View looking northeast at P314-8 located upgradient of South Landfill - West
9	P314_2373	4397	18/08/14	408859	7596507	Sampling location P314-9 located downgradient of South Landfill - East
S9	P314_2374	4259	18/08/14	408861	7596511	View looking southwest at P314-9 located downgradient of South Landfill - East
10	P314_2381	4364	18/08/14	408849	7596422	Sampling location P314-10 located upgradient of South Landfill - East
S10	P314_2382	4369	18/08/14	408849	7596417	View looking north at P314-10 located upgradient of South Landfill - East
11	P314_2392	4303	18/08/14	408792	7596459	Sampling location P314-11 located upgradient of South Landfill - East
S11	P314_2393	4123	18/08/14	408786	7596457	View looking east at P314-11 located upgradient of South Landfill - East

5.5 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results for the 2014 South Landfill samples are presented in Table XVI below. Certificates of analysis and field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Annexes 1 and 2 at the end of this report.

Table XVI: Soil Chemical Analysis Results – South Landfill

Sample #	Location	Depth (cm)	Parameters											F1	F2	F3
			As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	Hg [mg/kg]	PCBs [mg/kg]				
			C ₆ -C ₁₀ [mg/kg]	C ₁₀ -C ₁₆ [mg/kg]	C ₁₆ -C ₃₄ [mg/kg]											
Detection Limit			0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.01	0.1	10	50	50	
Upgradient Soil Samples																
P314-7A	P3-5	0-15	1.3	0.03	4.8	3.4	12.1	<4.9	5.0	8	0.01	<0.1	<10	<50	53	
P314-7B		40-50	0.5	<0.01	3.1	1.6	17.4	<5	2.7	4	<0.01	<0.1	<10	<50	<50	
P314-9A	P3-9	0-15	1.1	<0.01	6.3	2.9	8.9	<4.9	4.4	8	<0.01	<0.1	<10	<50	<50	
P314-9B		40-50	0.8	<0.01	4.3	2.3	6.4	<4.9	3.2	6	<0.01	<0.1	<10	230	158	
Downgradient Soil Samples																
P314-5A	P3-7	0-15	1.4	0.03	5.7	3.2	13.7	<5	5.4	10	<0.01	<0.1	<10	<50	<50	
P314-5B		40-50	1.5	0.37	5.6	3.9	17.7	5.8	5.5	12	<0.01	<0.1	<10	<50	<50	
P314-6A	P3-6	0-15	0.9	0.01	3.3	1.9	4.6	<5	3.1	5	<0.01	<0.1	<10	<50	<50	
P314-6B		40-50	1.2	0.07	4.5	3.5	12.9	<4.9	5.0	7	<0.01	<0.1	<10	<50	<50	
P314-8A	P3-8	0-15	1.0	0.04	5.9	2.6	10.1	17.5	4.1	10	<0.01	<0.1	<10	<50	467	
P314-8B		40-50	1.3	0.02	3.6	2.3	10.8	<5	4.2	7	<0.01	<0.1	<10	<50	169	
P314-10A	P3-10	0-15	0.7	<0.01	3.0	1.6	7.3	<5	2.4	5	<0.01	<0.1	<10	<50	<50	
P314-10B		40-50	1.0	<0.01	4.4	2.7	21.8	<4.9	3.8	7	<0.01	<0.1	<10	<50	<50	
P314-11A	P3-11	0-15	0.7	0.07	4.3	2.1	7.1	<5	3.3	6	<0.01	<0.1	<10	<50	<50	
P314-11B		40-50	2.2	<0.01	6.4	4.0	16.3	<4.9	6.3	12	<0.01	<0.1	<10	<50	<50	

6 NORTH LANDFILL

6.1 SUMMARY

On August 18, 2014 soil sampling and a visual inspection were completed at the North Landfill. Only surface soil samples were collected P3-13 and P3-14 soil sampling stations as bedrock was encountered at 15 cm below ground surface.

TPH, PCBs or relatively high metal concentrations were not detected in the collected soil samples.

As of 2014, no features with “significant” or “unacceptable” severity ratings were identified in the Preliminary Stability Assessment of the North Landfill. No exposed debris were noticed. Two new minor settlement features were noticed: 1 on the northwest side of the East Lobe and 1 on southwest side of the West Lobe. One new minor erosion feature on the south side of the West Lobe appears to be self-armouring. New vehicle tracks on the west side of the West Lobe do not affect the integrity of landfill cover.

At this time, the overall performance of the landfill is rated as acceptable.

The Visual Inspection Checklist/Report has been completed as per the TOR and is included as Table XVII of this report.

Table XVII: Visual Inspection Checklist / Report – North Landfill

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST

INSPECTION REPORT – PAGE 1 OF 2

SITE NAME: PIN-3 Lady Franklin Point
LANDFILL DESIGNATION: North Landfill (Regrade Landfill)
DATE OF INSPECTION: August 18, 2014
DATE OF PREVIOUS INSPECTION: August 9, 2014
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.

TABLE XIX: NORTH LANDFILL VISUAL INSPECTION (PAGE 2 OF 2)

Site Name: PIN-3 Lady Franklin Point
Landfill: North Landfill
Designation: Existing Regrade Area
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Signature: 

Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	FEATURE A See Figure PIN-3.5 (NW side of East lobe) - New Obs.	3 m	0.2 m	0.1 m	Isolated	Linear depression	NLF-6, 7	Acceptable	Isolated minor linear depression
		FEATURE B See Figure PIN-3.5 (SW side of West lobe) - New Obs.	0.5 m	0.5 m	0.1 m	Isolated	Pothole-type depression	NLF-19	Acceptable	Isolated pothole depression
Erosion	Yes	FEATURE C See Figure PIN-3.5 (S side of West lobe) - New Obs.	3 m	0.2 m	0.02 m	Isolated	Minor erosion	NLF-16	Acceptable	Fines washing. Slope appears stable
Frost Action	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Animal Burrows		N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Vegetation	Yes	See Figure PIN-3.5 (East and West lobes)	N/A	N/A	N/A	Sparse	N/A	NLF-2, 5, 26	N/A	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	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Not Observable	N/A
Other Features of Note:	No	FEATURE D See Figure PIN-3.5 (W side of West lobe) - New Obs.	20 m	0.2 m	0.1 - 0.15 m	Occasional (<2%)	Vehicle tracks	NLF-20, 21	Acceptable	Landfill cover appears stable
Additional Photos	Yes	See Figure PIN-3.5 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									

6.2 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for the North Landfill has been completed as per the TOR and is included as Table XVIII hereafter.

Table XVIII: Preliminary Stability Assessment – North 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	Not observed	None
Debris exposure	Not observed	None
Overall Landfill Performance	Acceptable	

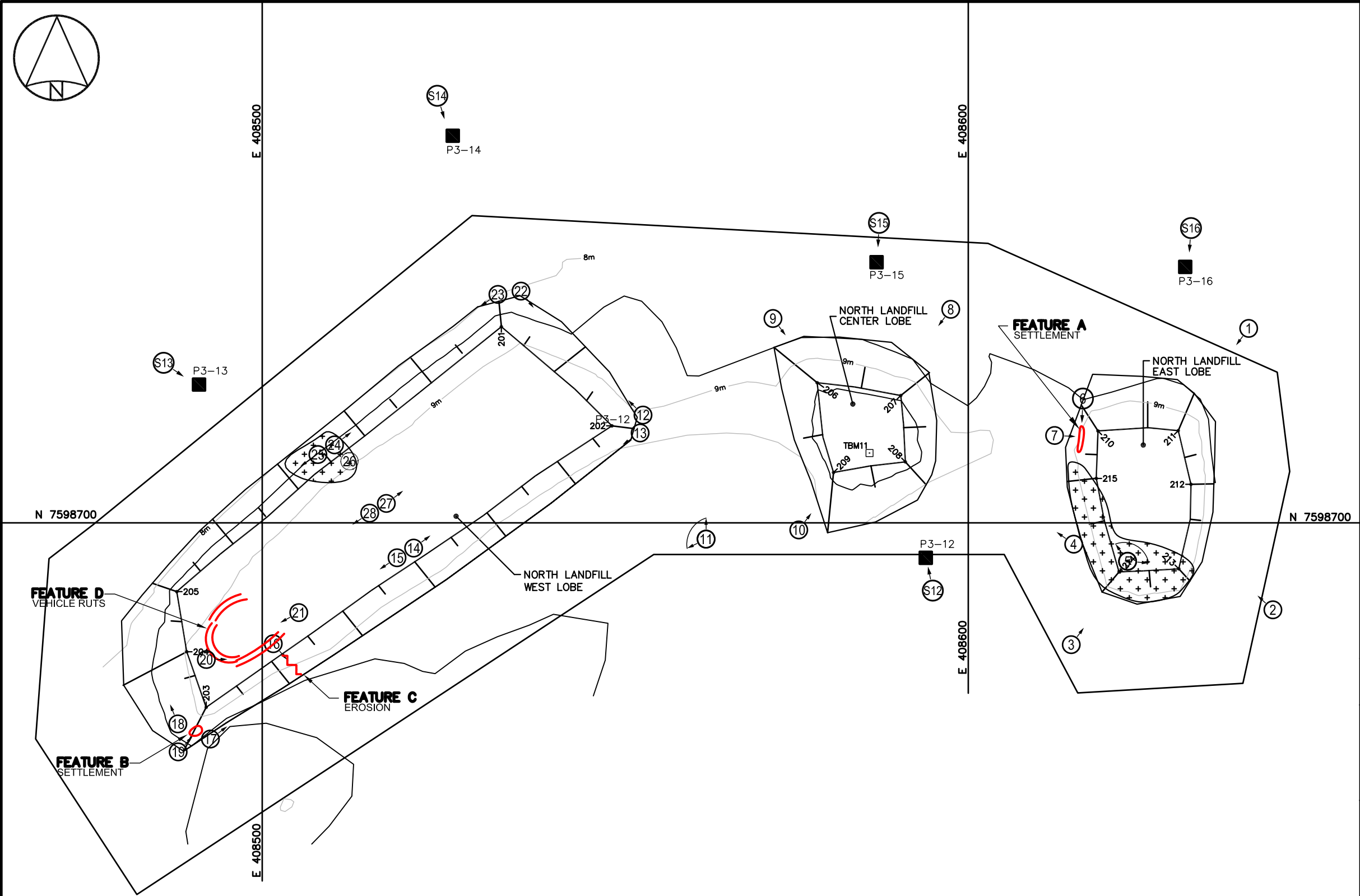
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears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

6.3 LOCATION PLAN

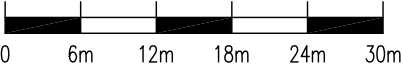
The Location Plan for the North Landfill has been completed as per the TOR and is presented in Figure PIN-3.5.

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LEGEND

- TBM11 □ TEMPORARY BENCHMARK
- 201→ COORDINATE POINT
- MONITORING SOIL SAMPLE LOCATION
- SETTLEMENT (NTS)
- ~ EROSION (NTS)
- == VEHICLE RUTS
- + + SPARSE VEGETATION
- ①→ APPROX. PHOTOGRAPHIC VIEWPOINT



1	FINAL	15-04-23	P.L.	A.P.	P.G.
NO.	VERSION	DATE	BY	VERIF.	APPR.



FINAL REPORT COLLECTION OF LANDFILL MONITORING DATA PIN-3, LADY FRANKLIN POINT (NUNAVUT) EXISTING NORTH 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 www.biogenie-env.com



MEASUREMENT UNIT	SCALE:	DATE (month-year):
Meter	1 : 600	APRIL 2015
DRAWN BY:	VERIFIED BY:	APPROVED BY:
L. LA PIERRE	A. PASSALIS	P. GÉLINAS P. Eng.
PROJECT NO:	DRAWING NO:	PAGE
CD2656_400_403	CD2656_400_403_101-PIN-3_E	PL

FIGURE PIN-3.5

6.4 PHOTOGRAPHIC RECORDS

The Photographic Record for the North Landfill has been completed as per the TOR and is included as Table XIX hereafter. The Photographic Record contains only an index of photographs. Full-sized photographs are contained in the Addendum DVD-ROM.

Table XIX: Landfill Visual Inspection Photo Log – North Landfill (page 1 of 2)

Site Name: PIN-3, Lady Franklin Point
Landfill: North Landfill
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Photo (NLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
1	P314_2429	4312	18/08/14	408639	7598727	View looking southwest at East Lobe
2	P314_2430	4396	18/08/14	408643	7598688	View looking northwest at East Lobe
3	P314_2431	4418	18/08/14	408615	7598683	View looking northeast at East Lobe
4	P314_2432	4317	18/08/14	408615	7598697	View looking northwest at Central Lobe
5	P314_2433	1761	18/08/14	408622	7598694	Panoramic view looking east to northwest from southwest corner of East Lobe
6	P314_2434	4361	18/08/14	408616	7598717	View looking south at linear depression on northwest side slope of East Lobe - FEATURE A (new)
7	P314_2435	4457	18/08/14	408613	7598712	View looking east at linear depression on northwest side slope of East Lobe - FEATURE A (new)
8	P314_2436	4394	18/08/14	408597	7598730	View looking southwest at Central Lobe
9	P314_2437	4321	18/08/14	408573	7598728	View looking southeast at Central Lobe
10	P314_2438	4246	18/08/14	408576	7598700	View looking northeast at Central Lobe
11	P314_2440	1042	18/08/14	408562	7598698	Panoramic view looking north to west-southwest at West Lobe
12	P314_2441	4366	18/08/14	408554	7598715	View looking northwest along east side of West Lobe
13	P314_2442	4375	18/08/14	408554	7598713	View looking southwest along south side of West Lobe
14	P314_2447	4293	18/08/14	408521	7598696	View looking northeast along south side of West Lobe
15	P314_2448	4323	18/08/14	408519	7598695	View looking southwest along south side of West Lobe
16	P314_2449	4394	18/08/14	408502	7598682	View looking southeast at minor erosion on south side slope of West Lobe - FEATURE C (new)
17	P314_2450	4356	18/08/14	408493	7598670	View looking northeast along south side of West Lobe
18	P314_2451	4337	18/08/14	408488	7598671	View looking northwest along west side of West Lobe
19	P314_2452	4351	18/08/14	408488	7598668	View looking northeast at minor depression on southwest toe of West Lobe - FEATURE B (new)
20	P314_2453	4321	18/08/14	408493	7598681	View looking east at vehicle ruts on west end of West Lobe - FEATURE D (new)
21	P314_2455	4348	18/08/14	408505	7598687	View looking southwest at vehicle ruts on west end of West Lobe - FEATURE D (new)
22	P314_2460	4343	18/08/14	408536	7598733	View looking southeast along east side of West Lobe
23	P314_2461	4411	18/08/14	408534	7598732	View looking southwest along north side of West Lobe
24	P314_2462	4359	18/08/14	408510	7598711	View looking northeast along north side of West Lobe
25	P314_2463	4250	18/08/14	408508	7598710	View looking southwest along west side of West Lobe
26	P314_2464	4437	18/08/14	408512	7598709	Typical vegetation noted on cover of West Lobe
27	P314_2465	4389	18/08/14	408517	7598702	View looking northeast along centerline of West Lobe
28	P314_2466	4323	18/08/14	408516	7598701	View looking southwest along centerline of West Lobe

Table XIX: Landfill Visual Inspection Photo Log – North Landfill (page 2 of 2)

Photo (NLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
Soil Sampling						
12	P314_2456	4429	18/08/14	408594	7598695	Sampling location P314-12 located upgradient of North Landfill
S12	P314_2457	4410	18/08/14	408595	7598692	View looking north at P314-12 located upgradient of North Landfill
13	P314_2467	4354	18/08/14	408490	7598720	Sampling location P314-13 located downgradient of North Landfill
S13	P314_2468	4311	18/08/14	408487	7598722	View looking southeast at P314-13 located downgradient of North Landfill
14	P314_2458	4409	18/08/14	408527	7598755	Sampling location P314-14 located downgradient of North Landfill
S14	P314_2459	4286	18/08/14	408525	7598759	View looking south at P314-14 located downgradient of North Landfill
15	P314_2443	4247	18/08/14	408588	7598737	Sampling location P314-15 located downgradient of North Landfill
S15	P314_2444	4336	18/08/14	408587	7598741	View looking south at P314-15 located downgradient of North Landfill
16	P314_2445	4372	18/08/14	408631	7598736	Sampling location P314-16 located downgradient of North Landfill
S16	P314_2446	4366	18/08/14	408632	7598741	View looking southwest at P314-16 located downgradient of North Landfill

6.5 SOIL SAMPLE ANALYTICAL RESULTS

The soil chemical analysis results for the 2014 North Landfill samples are presented in Table XX below. Certificates of analysis and field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Annexes 1 and 2 at the end of this report.

Table XX: Soil Chemical Analysis Results – North Landfill

Sample #	Location	Depth (cm)	Parameters												F1	F2	F3
			As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	Hg [mg/kg]	PCBs [mg/kg]					
			C ₆ -C ₁₀ [mg/kg]	C ₁₀ -C ₁₆ [mg/kg]	C ₁₆ -C ₃₄ [mg/kg]												
Detection Limit			0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.01	0.1	10	50	50		
Upgradient Soil Samples																	
P314-12A	P3-12	0-15	0.9	0.03	3.9	1.7	7.0	<4.9	3.1	12	0.01	<0.1	<10	<50	<50		
P314-12B		20-30	1.0	0.03	4.1	2.0	3.3	<4.9	3.0	6	<0.01	<0.1	<10	<50	<50		
Downgradient Soil Samples																	
P314-13A	P3-13	0-15	1.2	0.06	3.8	1.4	4.7	<5	2.5	16	0.01	<0.1	<10	<50	<50		
P314-14A	P3-14	0-15	1.0	0.02	3.8	1.4	3.0	<5	2.1	7	<0.01	<0.1	<10	<50	<50		
P314-15A	P3-15	0-15	1.3	0.04	4.1	2.3	7.0	<5	3.9	11	0.02	<0.1	<10	<50	<50		
P314-15B		20-30	0.6	<0.01	4.0	1.5	4.7	<4.9	2.3	4	<0.01	<0.1	<10	<50	<50		
P314-16A	P3-16	0-15	1.8	0.04	5.6	2.1	17.6	<4.9	9.9	9	0.01	<0.1	<10	<50	<50		
P314-16B		20-30	2.6	0.02	3.6	2.3	6.4	5.3	6.5	5	<0.01	<0.1	<10	<50	<50		

7 NON-HAZARDOUS WASTE LANDFILL

7.1 SUMMARY

On August 18, 2014 soil sampling and a visual inspection were completed at the NHWL Landfill. Depth soil sample could not be collected at MW-16 as bedrock was encountered at 15 cm below ground surface. Bedrock was also encountered at MW-14 at 40 cm. Groundwater sampling took place on August 19, 2014.

TPH, PCBs or relatively high metal concentrations were not detected in the collected soil samples. Water levels were sufficient to allow sampling of all wells. No PCBs were detected at any of the wells sampled. Most metals were detected in the majority of the groundwater samples, with chromium and nickel consistently showing the highest concentrations. Sample from MW-14 exhibits the highest levels for all parameters (with the exception of zinc). PHC fraction F2 was detected (0.2 mg/L) in samples P314-13W, 15W and 16W.

As of 2014, no features with “significant” or “unacceptable” severity ratings were identified in the Preliminary Stability Assessment of the NHWL Landfill. A single piece of geotextile was exposed near the southeast toe. One previously noticed erosion feature could not be observed in 2014, while 4 new depressions in various sections. Two new minor erosion features were noticed on the southeast and west slopes.

At this time, the overall performance of the landfill is rated as acceptable.

The Visual Inspection Checklist/Report has been completed as per the TOR and is included as Table XXI of this report.

Table XXI: Visual Inspection Checklist / Report – NHWLF

**DEW LINE CLEANUP: POST-CONSTRUCTION – LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST**

INSPECTION REPORT – PAGE 1 of 2

SITE NAME: PIN-3 Lady Franklin Point
LANDFILL DESIGNATION: NHWLF (New Landfill)
DATE OF INSPECTION: August 18, 2014
DATE OF PREVIOUS INSPECTION: August 18, 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.

TABLE XXIII: NHWL LANDFILL VISUAL INSPECTION (PAGE 2 OF 2)

Site Name: PIN-3 Lady Franklin Point

Landfill: Non-Hazardous Waste Landfill

Designation: New Landfill

Date Inspected: August 18, 2014

Inspected by: Andrew Passalis, P.Eng.

Signature:



Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	Feature A See Figure PIN-3.6 (central area of landfill cover)	3 m	2 m	0.15 m	Isolated	Subtle depression	N/A	Unknown	Feature previously noted, however not present during 2014 inspection
		Feature C See Figure PIN-3.6 (central and S areas of cover) - New Obs.	4-16 m	0.15-0.2 m	0.05 m	Occasional	Linear depressions - 4 locations	NHWLF-11-14, 42, 43	Acceptable	Features may be associated with construction artifacts
		Feature D See Figure PIN-3.6 (NE cover) - New Obs.	0.6 m	0.4 m	0.1 m	Isolated	Single pothole type depression	NHWLF-45	Acceptable	Located within recent regrade area
		Feature E See Figure PIN-3.6 (SW cover) - New Obs.	2 m	0.5 m	0.1 m	Isolated	Minor depressions - 3 locations	NHWLF-9,10	Acceptable	Depressions are of similar dimensions
		Feature F See Figure PIN-3.6 (SW side slope) - New Obs.	1-2 m	0.4-0.5 m	0.1-0.15 m	Isolated	Linear depressions - 3 locations	NHWLF-3, 4, 8	Acceptable	Depressions with some secondary erosion
Erosion	Yes	Feature G See Figure PIN-3.6 (SE side slope) - New Obs.	7 m	0.2-0.4 m	0.05 m	Isolated	S-shaped erosion	NHWLF-21	Acceptable	Minor erosion. Slope appears stable.
		Feature H See Figure PIN-3.6 (W side slope) - New Obs.	4-8 m	0.1-0.2 m	0.02-0.05 m	Occasional	Minor erosion - 3 locations	NHWLF-35-39	Acceptable	
Frost Action	No	N/A	N/A	N/A	N/A	None	N/A	N/A	Not Observable	N/A
Animal Burrows	No	N/A	N/A	N/A	N/A	None	N/A	N/A	Not Observable	N/A
Vegetation	Yes	See Figure PIN-3.6 (S and E side slopes and NE cover)	N/A	N/A	N/A	Sparse to very sparse	N/A	NHWLF-18, 19, 23, 24, 29, 44, 45	Not Observable	N/A
Staining	No	N/A	N/A	N/A	N/A	None	N/A	N/A	Not Observable	N/A
Vegetation Stress	No	N/A	N/A	N/A	N/A	None	N/A	N/A	Not Observable	N/A
Seepage Points	No	N/A	N/A	N/A	N/A	None	N/A	N/A	Not Observable	N/A
Debris Exposed	Yes	Feature B See Figure PIN-3.6 (southeast toe of landfill)	0.4 m	0.4 m	Unknown	Isolated	Piece of black geotextile	NHWLF-20	N/A	Single piece of geotextile exposed near toe of landfill. Consistent with previous observation
Presence/Condition of Monitoring Instruments	Yes	See Figure PIN-3.6 MW-13 to MW-16	N/A	N/A	N/A	N/A	Monitoring wells	NHWLF-22, 14W, 41, 16W	Acceptable	All monitoring wells in good condition
Other Features of Note:	No	N/A	N/A	N/A	N/A	None	N/A	N/A	Not Observable	N/A
Additional Photos	Yes	See Figure PIN-3.6 and Photographic Record	N/A	N/A	N/A	N/A	General Photographic Record	N/A	N/A	No features of note in the photographic record
Overall Landfill Performance:	Acceptable									

7.2 PRELIMINARY STABILITY ASSESSMENT

The Preliminary Stability Assessment for NHWLF has been completed as per the TOR and is included as Table XXII hereafter.

Table XXII: Preliminary Stability Assessment – NHWLF

Feature	Severity Rating	Extent
Settlement	Acceptable	Occasional
Erosion	Acceptable	Occasional
Frost Action	Not observed	None
Staining	Not observed	None
Vegetation Stress	Not observed	None
Seepage/Ponded Water	Not observed	None
Debris exposure	Acceptable	N/A (outside landfill area)
Overall Landfill Performance	Acceptable	

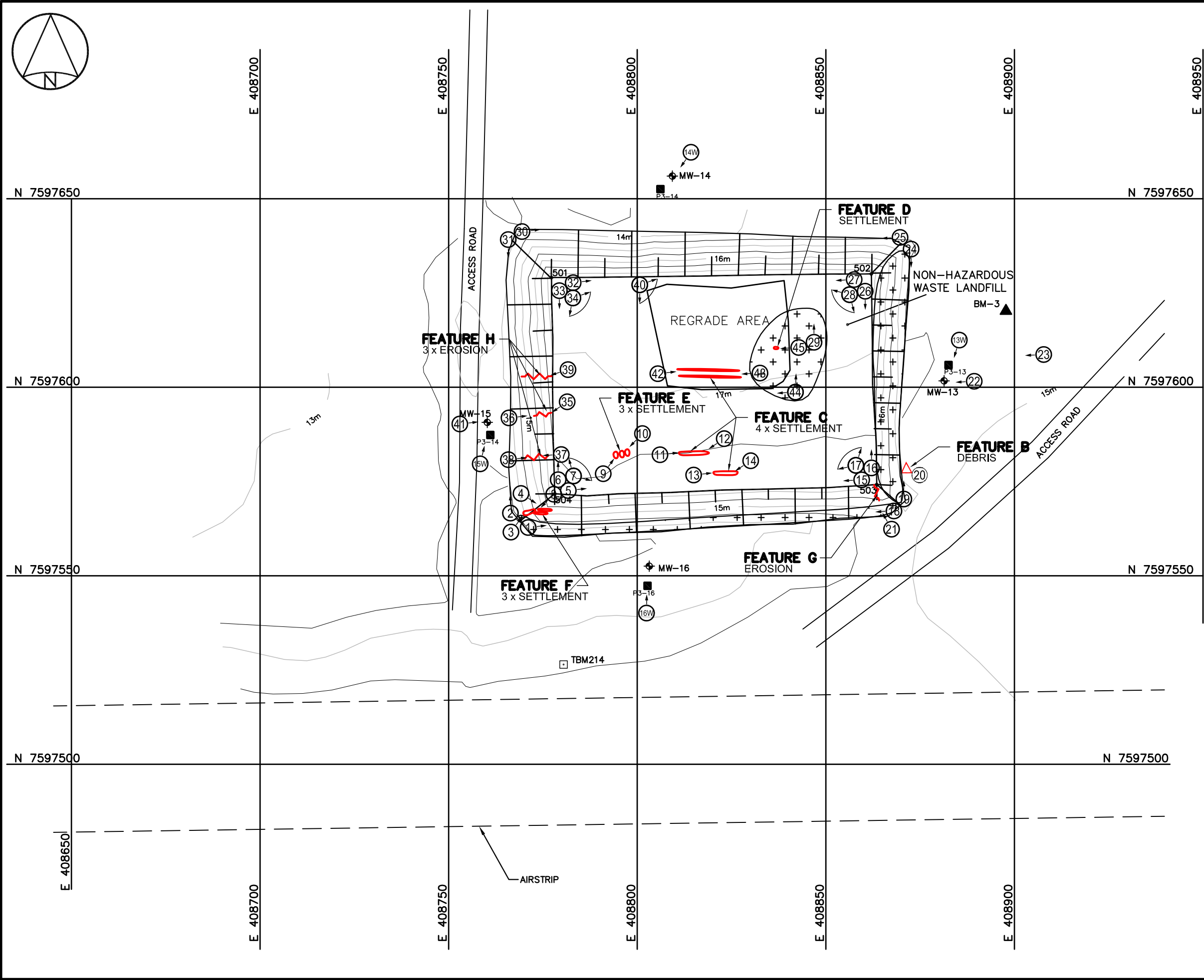
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears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

7.3 LOCATION PLAN

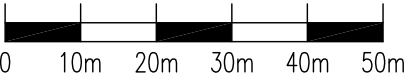
The Location Plan for the NHWLF has been completed as per the TOR and is presented in Figure PIN-3.6.

G:\CD2656\PIN-3\2014\FINAL\CD2656_400_403-PIN-3_F.dwg, PL 2015-04-23 9:56:41 AM



LEGEND

- TBM214 □ TEMPORARY BENCHMARK
- BM-3 ▲ PERMANENT BENCHMARK
- MW-13 ⬮ MONITORING WELL LOCATION
- 501 ➔ COORDINATE POINT
- MONITORING SOIL SAMPLE LOCATION
- SETTLEMENT (NTS)
- ~ EROSION (NTS)
- △ DEBRIS
- ⊕ SPARSE VEGETATION
- ① ➔ APPROX. PHOTOGRAPHIC VIEWPOINT



1	FINAL	15-04-23	P.L.	A.P.	P.G.
NO.	VERSION	DATE	BY	VERIF.	APPR.



FINAL REPORT
COLLECTION OF LANDFILL MONITORING DATA
PIN-3, LADY FRANKLIN POINT (NUNAVUT)
NON HAZARDOUS WASTE LANDFILL

SITE REMEDIATION SOLUTIONS

Biogenie, a division of EnGlobe Corp.
4495 Wilfrid-Hamel Blvd, Suite 200
Quebec, (Quebec) CANADA G1P 2J7
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MEASUREMENT UNIT Meter	SCALE: 1 : 1,000	DATE (month-year): APRIL 2015
DRAWN BY: L. LA PIERRE	VERIFIED BY: A. PASSALIS	APPROVED BY: P. GÉLINAS P. Eng.
PROJECT NO: CD2656_400_403	DRAWING NO: CD2656_400_403_101-PIN-3_F	PAGE PL

FIGURE PIN-3.6

7.4 PHOTOGRAPHIC RECORDS

The Photographic Record for the Non-Hazardous Waste Landfill has been completed as per the TOR and is included as Table XXIII hereafter. The Photographic Record contains only an index of photographs. Full sized photographs are contained in the Addendum DVD-ROM.

Table XXIII: Landfill Visual Inspection Photo Log – NHWLF (page 1 of 2)

Site Name: PIN-3, Lady Franklin Point
Landfill: Non-Hazardous Waste Landfill
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Photo (NHWLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
1	P314_2228	4253	18/08/14	408770	7597564	View looking east at south toe of NHWLF
2	P314_2229	4361	18/08/14	408768	7597565	View looking north at west toe of NHWLF
3	P314_2230	4326	18/08/14	408768	7597563	View looking northeast at erosion on southwest side slope - FEATURE F (new)
4	P314_2231	4364	18/08/14	408771	7597570	View looking south at erosion on southwest side slope - FEATURE F (new)
5	P314_2232	4320	18/08/14	408780	7597573	View looking east at south crest of NHWLF
6	P314_2233	4390	18/08/14	408779	7597575	View looking north at west crest of NHWLF
7	P314_2234	1638	18/08/14	408781	7597575	Panoramic view looking north to east from southwest crest of NHWLF
8	P314_2235	4410	18/08/14	408778	7597572	View looking southwest at erosion on southwest corner slope of NHWLF - FEATURE F (new)
9	P314_2236	4402	18/08/14	408792	7597577	View looking northeast at three subtle depressions on southwest cover of NHWLF - FEATURE E (new)
10	P314_2237	4392	18/08/14	408800	7597587	View looking southwest at three subtle depressions on southwest cover of NHWLF - FEATURE E (new)
11	P314_2238	4360	18/08/14	408807	7597582	View looking east at linear depression on southwest cover of NHWLF - FEATURE C (new)
12	P314_2239	4421	18/08/14	408821	7597585	View looking southwest at linear depression on southwest cover of NHWLF - FEATURE C (new)
13	P314_2240	4433	18/08/14	408817	7597577	View looking east at linear depression on south cover of NHWLF - FEATURE C (new)
14	P314_2241	4419	18/08/14	408828	7597579	View looking southwest at linear depression on south cover of NHWLF - FEATURE C (new)
15	P314_2242	4437	18/08/14	408860	7597576	View looking west along south crest of NHWLF
16	P314_2243	4431	18/08/14	408861	7597578	View looking north along east crest of NHWLF
17	P314_2244	1424	18/08/14	408859	7597578	Panoramic view looking west to north from southeast crest of NHWLF
18	P314_2245	4303	18/08/14	408870	7597568	View looking west along south toe of NHWLF
19	P314_2246	4441	18/08/14	408870	7597569	View looking north along east toe of NHWLF
20	P314_2247	4436	18/08/14	408873	7597577	View of partially exposed geotextile - FEATURE A

Table XXIII: Landfill Visual Inspection Photo Log – NHWLF (page 2 of 2)

Photo (NHWLF-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
21	P314_2250	4393	18/08/14	408866	7597564	View looking northwest at minor "S" shaped erosion on southeast corner of NHWLF - FEATURE G (new)
22	P314_2251	4350	18/08/14	408888	7597601	View west at MW-13
23	P314_2252	4289	18/08/14	408906	7597609	View looking west at east side of NHWLF
24	P314_2253	4395	18/08/14	408872	7597638	View looking south along east toe of NHWLF
25	P314_2254	4342	18/08/14	408871	7597639	View looking west along north toe of NHWLF
26	P314_2255	4386	18/08/14	408860	7597626	View looking south along east crest of NHWLF
27	P314_2256	4284	18/08/14	408860	7597627	View looking west along north crest of NHWLF
28	P314_2257	1537	18/08/14	408857	7597625	Panoramic view looking south to west from northeast crest of NHWLF
29	P314_2258	4383	18/08/14	408847	7597612	View looking north at typical sparse vegetation on cover of NHWLF
30	P314_2262	4295	18/08/14	408768	7597640	View looking south along west toe of NHWLF
31	P314_2263	4371	18/08/14	408767	7597640	View looking east along north toe of NHWLF
32	P314_2264	4295	18/08/14	408781	7597627	View looking south along west crest of NHWLF
33	P314_2265	4352	18/08/14	408780	7597627	View looking east along north crest of NHWLF
34	P314_2266	1699	18/08/14	408783	7597625	Panoramic view looking east to south from northeast crest of NHWLF
35	P314_2267	4372	18/08/14	408780	7597595	View looking southwest at minor erosion on west crest of NHWLF - FEATURE H (new)
36	P314_2268	4285	18/08/14	408768	7597592	View looking northeast at minor erosion on west crest of NHWLF - FEATURE H (new)
37	P314_2269	4355	18/08/14	408778	7597582	View looking west at minor erosion on west side slope of NHWLF - FEATURE H (new)
38	P314_2270	4354	18/08/14	408767	7597581	View looking east at minor erosion on west side slope of NHWLF - FEATURE H (new)
39	P314_2271	4358	18/08/14	408780	7597604	View looking west at minor erosion on west side slope of NHWLF - FEATURE H (new)
40	P314_2272	1492	18/08/14	408802	7597628	Panoramic view looking south to east at edge of rough grading on north cover of NHWLF
41	P314_2275	4372	18/08/14	408754	7597590	View looking east at MW-15
42	P314_2278	4375	18/08/14	408807	7597603	View looking east at linear depressions on cover of NHWLF - FEATURE C (new)
43	P314_2279	4311	18/08/14	408831	7597603	View looking west at linear features on cover of NHWLF - FEATURE C (new)
44	P314_2280	1173	18/08/14	408841	7597599	Panoramic view looking west to north across regrade area on north cover of NHWLF
45	P314_2281	4335	18/08/14	408842	7597610	View looking west at localized depression in regrade area - FEATURE D (new)
Soil Sampling and Groundwater Wells						
MW13	P314_2259	4391	18/08/14	408884	7597605	Sampling location P314-13W located downgradient of NHWLF
13W	P314_2260	4386	18/08/14	408885	7597611	View looking south-southwest at MW-13 located downgradient of NHWLF
MW14	P314_2273	4402	18/08/14	408808	7597653	Sampling location P314-14W located downgradient of NHWLF
14W	P314_2274	4363	18/08/14	408812	7597659	View looking southwest MW-14 located downgradient of NHWLF
MW15	P314_2276	4327	18/08/14	408760	7597587	Sampling location P314-15W located downgradient of NHWLF
15W	P314_2277	4408	18/08/14	408759	7597583	View looking north MW-15 located downgradient of NHWLF
MW16	P314_2248	4430	18/08/14	408802	7597547	Sampling location P314-16W located upgradient of NHWLF
16W	P314_2249	4384	18/08/14	408802	7597542	View looking north at MW-16 located upgradient of NHWLF

7.5 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results of analytical data for the 2014 Non-Hazardous Waste Landfill samples are presented in Table XXIV below. Certificates of analysis and field and inter-laboratory duplicates collected as part of the QA/QC program are presented in Annexes 1 and 2 at the end of this report.

Table XXIV: Soil Chemical Analysis Results – Non-Hazardous Waste Landfill

Sample #	Location	Depth (cm)	Parameters											F1	F2	F3
			As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	Hg [mg/kg]	PCBs [mg/kg]				
			C ₆ -C ₁₀ [mg/kg]	C ₁₀ -C ₁₆ [mg/kg]	C ₁₆ -C ₃₄ [mg/kg]											
Detection Limit			0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.01	0.1	10	50	50	
Downgradient Soil Samples																
P314-13WA	MW-13	0-15	1.0	0.11	4.2	2.3	17.6	6.3	3.1	12	0.01	<0.1	<10	<50	<50	
P314-13WB		40-50	0.8	0.03	2.8	1.7	5.6	<5	2.2	4	<0.01	<0.1	<10	<50	<50	
P314-14WA	MW-14	0-15	0.7	0.21	2.0	0.9	10.1	<4.9	3.2	11	0.05	<0.1	<10	<50	<50	
P314-14WB		30-40	1.3	0.02	2.7	1.3	1.6	<4.9	1.9	3	<0.01	<0.1	<10	<50	<50	
P314-15WA	MW-15	0-15	0.6	0.07	2.6	1.4	8.1	6.4	2.3	11	0.02	<0.1	<10	<50	<50	
P314-15WB		40-50	0.9	0.06	4.4	2.0	5.1	<5	2.9	6	<0.01	<0.1	<10	<50	<50	
P314-16WA	MW-16	0-15	0.8	0.08	2.5	1.3	3.1	<5	2.0	7	<0.01	<0.1	<10	<50	<50	

7.6 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results of analytical data for the 2014 Non-Hazardous Waste Landfill samples are presented in Table XXV. Certificates of analysis and groundwater samples collected as part of the QA/QC program are presented in Annexes 1 and 2.

Table XXV:Groundwater Chemical Analysis Results – Non-Hazardous Waste Landfill

Sample #	Location	Parameters												
		As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Ni [mg/L]	Zn [mg/L]	Hg [mg/L]	PCBs [ug/L]	F1	F2	F3
												C6-C10 [mg/L]	C10-C16 [mg/L]	C16-C34 [mg/L]
Detection Limit		0.0002	0.00001	0.0005	0.0001	0.001	0.0001	0.0005	0.001	0.000005	0.1	0.2	0.2	0.1
Downgradient Groundwater Samples														
P314-13W	MW-13	0.0045	<0.00001	0.1760	0.0016	0.017	0.0022	0.0595	0.371	0.000021	<0.1	<0.2	0.2	<0.1
P314-14W	MW-14	0.0186	0.00002	0.2700	0.0094	0.032	0.0147	0.0989	0.025	0.000015	<0.1	<0.2	<0.2	<0.1
P314-15W	MW-15	0.0069	<0.00001	0.0377	0.0020	0.009	0.0120	0.0224	0.026	0.000031	<0.1	<0.2	0.2	<0.1
P314-16W	MW-16	0.0019	<0.00001	0.0363	0.0008	0.011	0.0021	0.0215	0.005	<0.000005	<0.1	<0.2	0.2	<0.1

7.7 MONITORING WELL SAMPLING/INSPECTION LOGS (MW-13 TO MW-16)

The monitoring well sampling and inspection logs for MW-13 to MW-16 are presented in this section.

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	12:00
Names of Samplers:	A.Passalis		
Landfill Name:	Non-Hazardous Waste Landfill		
Monitoring Well ID:	MW-13		
Sample Number:	P314-13W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	39		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	392		
Length screened section (cm)=	333		
Depth to top of screen (cm)= (from ground surface)	59		
Depth to water surface (cm)= (from top of pipe)	171	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	132		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	309	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	138		
Static volume of water in well (mL)=	2710		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	3.5 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	8.2		
Final Conductivity (uS/cm)=	1034		
Final Temperature (degC)=	2.6		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	12:40
Names of Samplers:	A.Passalis		
Landfill Name:	Non-Hazardous Waste Landfill		
Monitoring Well ID:	MW-14		
Sample Number:	P314-14W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	50		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	474		
Length screened section (cm)=	333		
Depth to top of screen (cm)= (from ground surface)	65		
Depth to water surface (cm)= (from top of pipe)	118.5	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	68.5		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	348	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	229.5		
Static volume of water in well (mL)=	4506		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	5.5 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.4		
Final Conductivity (uS/cm)=	1857		
Final Temperature (degC)=	3.2		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	13:20
Names of Samplers:	A.Passalis		
Landfill Name:	Non-Hazardous Waste Landfill		
Monitoring Well ID:	MW-15		
Sample Number:	P314-15W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	54		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	472		
Length screened section (cm)=	302		
Depth to top of screen (cm)= (from ground surface)	48		
Depth to water surface (cm)= (from top of pipe)	157	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	103		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	278	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	121		
Static volume of water in well (mL)=	2376		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	3.0 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.4		
Final Conductivity (uS/cm)=	2320		
Final Temperature (degC)=	3.1		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	13:45
Names of Samplers:	A.Passalis		
Landfill Name:	Non-Hazardous Waste Landfill		
Monitoring Well ID:	MW-16		
Sample Number:	P314-16W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	72		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	445		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	37		
Depth to water surface (cm)= (from top of pipe)	121	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	49		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	397	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	276		
Static volume of water in well (mL)=	5419		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	5.5 L		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.4		
Final Conductivity (uS/cm)=	1345		
Final Temperature (degC)=	4.1		

8 TIER II SOIL DISPOSAL FACILITY

8.1 SUMMARY

On August 18, 2014 soil and groundwater sampling and a visual inspection were completed at the Tier II Disposal Facility. MW-9 (upgradient location) and MW-10 (downgradient location) contained insufficient sample volumes at the time of monitoring and consequently no groundwater samples were collected at these locations.

TPH and PCBs were not detected in the collected soil samples. Levels of copper in depth samples at MW-10 and MW-11 were slightly elevated.

PCBs were not detected in the collected groundwater samples. PHC fractions F2 and F3 were detected in MW-11. With the exception of cadmium, the concentration of all metals was elevated in samples from all wells.

As of 2014, no features with “significant” or “unacceptable” severity ratings were identified in the Preliminary Stability Assessment of the Tier II Disposal Facility. No exposed debris was noticed. Two existing minor depressions have marginally increased since last observations, while three new minor settlement features were observed. Five new erosion features from 11 different locations on the cover and the slopes appear stable and self-armouring.

At this time, the overall performance of the landfill is rated as acceptable.

The Visual Inspection Checklist/Report has been completed as per the TOR and is included as Table XXI of this report.

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

DEW LINE CLEANUP: POST-CONSTRUCTION - LANDFILL MONITORING
VISUAL INSPECTION CHECKLIST

INSPECTION REPORT – PAGE 1 of 2

SITE NAME: PIN-3 Lady Franklin Point
LANDFILL DESIGNATION: Tier II Soil Disposal Facility (New Landfill)
DATE OF INSPECTION: August 18, 2014
DATE OF PREVIOUS INSPECTION: August 8, 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.

TABLE XXVIII: TIER II SOIL DISPOSAL FACILITY VISUAL INSPECTION (PAGE 2 OF 2)

Site Name: PIN-3 Lady Franklin Point
Landfill: Tier II Soil Disposal Facility
Designation: New Landfill
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Signature:



Checklist Item	Present (Yes/No)	Location	Length	Width	Depth	Extent	Description	Photographic Record	Severity Rating	Additional Comments
Settlement	Yes	Feature A See Figure PIN-3.7 (N side slope N of VT-6)	3 m	1 m	0.1-0.15 m	Isolated	Subtle depression	Tier II-57	Acceptable	Cover and slopes appear stable. Marginal increase from 2009
		Feature B See Figure PIN-3.7 (SW corner and SE of VT-7)	2-4 m	0.3-0.5 m	0.1-0.25 m	Occasional	2 linear depressions (formerly Features B & C)	Tier II-17, 18, 40, 41	Acceptable	Cover and slopes appear stable. Marginal increase from 2009
		Feature C See Figure PIN-3.7 (S side slope and central cover) - New Obs.	0.8-2 m	0.3-0.4 m	0.1 m	Occasional	3 minor depressions (pothole and linear type)	Tier II-34, 36, 58, 59	Acceptable	Cover and slopes appear stable.
		Feature D See Figure PIN-3.7 (E side slope) - New Obs.	0.5-1 m	0.25-0.4 m	0.1 m	Occasional	2 minor depressions	Tier II-45-48	Acceptable	Cover and slopes appear stable
		Feature E See Figure PIN-3.7 (NW corner, N crest and side slope) - New Obs.	2-6 m	0.2-2 m	0.05-0.15 m	Occasional	3 minor depressions	Tier II-7, 8, 61, 62	Acceptable	Cover and slopes appear stable. Depression on north slope may be construction artifact
Erosion	Yes	Feature F See Figure PIN-3.7 (NE side slope) - New Obs.	5-18 m	0.2-0.5 m	0.05-0.15 m	Occasional	Minor erosion - 2 locations	Tier II-52, 55	Acceptable	Cover and slopes appear stable. Self armouring
		Feature G See Figure PIN-3.7 (SW side slope) - New Obs.	3-6 m	0.1-0.4 m	0.05-0.15 m	Occasional	Minor erosion - 4 locations	Tier II-27-29, 43, 44	Acceptable	
		Feature H See Figure PIN-3.7 (S side slope) - New Obs.	3-18 m	0.15-0.3 m	0.02-0.07 m	Occasional	Minor erosion - 4 locations	Tier II-24, 35, 37, 38	Acceptable	
		Feature I See Figure PIN-3.7 (SW side slope) - New Obs.	6-8 m	0.15-0.25 m	0.05-0.1 m	Occasional	Minor erosion - 2 locations	Tier II-12, 13, 19	Acceptable	
		Feature J See Figure PIN-3.7 (NW side slope) - New Obs.	20 m	0.2 m	0.05 m	Occasional	Minor erosion - 3 locations	Tier II-9-11	Acceptable	
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	Yes	See Figure PIN-3.7 (cover, W, S, E side slopes)	N/A	N/A	N/A	Sparse	N/A	Tier II-10, 20, 21, 24, 42, 61	N/A	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 PIN-3.7 and Photographic Record	N/A	N/A	N/A	N/A	VT-5, VT-6, VT-7, and VT-8 MW-9, MW-10, MW-11 and MW-12	Tier II-60, 56, 39, 33, 1, 22, 11W, 12W	N/A	Sampled and monitored in 2014
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 PIN-3.7 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									

8.2 PRELIMINARY STABILITY ASSESSMENT

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

Table XXVII: Preliminary Stability Assessment – Tier II Soil Disposal Facility

Feature	Severity Rating	Extent
Settlement	Acceptable	Occasional
Erosion	Acceptable	Occasional
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	

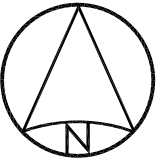
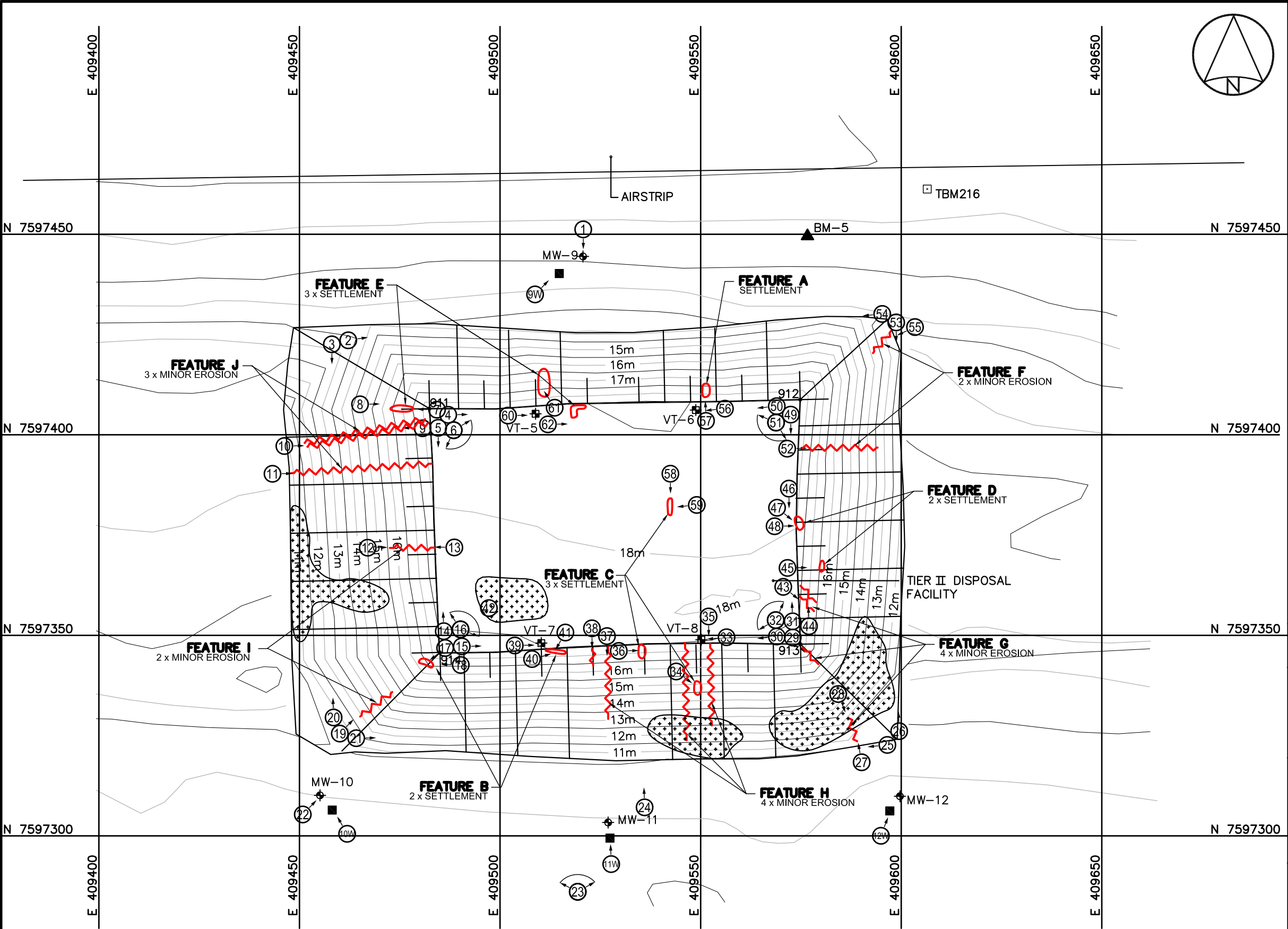
Performance/ Severity Rating	Description
Acceptable	Noted features are of little consequence. The landfill is performing as designed. Minor deviations in environmental or physical performance may be observed, such as isolated areas of erosion, settlement.
Marginal	Physical/environmental performance appears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

8.3 LOCATION PLAN

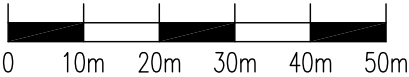
The Location Plan for the Tier II Soil Disposal Facility has been completed as per the TOR and is included in the following page as Figure PIN-3.7.

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LEGEND

- TBM216 □ TEMPORARY BENCHMARK
- BM-5 ▲ PERMANENT BENCHMARK
- MW-12 ◉ MONITORING WELL LOCATION
- VT ◉ VERTICAL THERMISTOR
- 911 ◉ COORDINATE POINT
- MONITORING SOIL SAMPLE LOCATION
- SETTLEMENT (NTS)
- ~ EROSION (NTS)
- ⊕ SPARSE VEGETATION
- ① → APPROX. PHOTOGRAPHIC VIEWPOINT



1	FINAL	15-04-23	P.L.	A.P.	P.G.
NO.	VERSION	DATE	BY	VERIF.	APPR.



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FINAL REPORT COLLECTION OF LANDFILL MONITORING DATA PIN-3, LADY FRANKLIN POINT (NUNAVUT) TIER II DISPOSAL FACILITY

SITE REMEDIATION SOLUTIONS

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MEASUREMENT UNIT Meter	SCALE: 1 : 1,000	DATE (month-year): APRIL 2015
DRAWN BY: L. LA PIERRE	VERIFIED BY: A. PASSALIS	APPROVED BY: P. GÉLINAS P. Eng.
PROJECT NO: CD2656_400_403	DRAWING NO: CD2656_400_403_101-PIN-3_G	PAGE PL

FIGURE PIN-3.7

8.4 PHOTOGRAPHIC RECORDS

The Photographic Record for the Tier II Soil Disposal Facility has been completed as per the TOR and is included as Table XXX hereafter. The Photographic Record contains only an index of photographs. Full-sized photographs are contained in the Addendum DVD-ROM.

Table XXVIII: Landfill Visual Inspection Photo Log – Tier II Soil Disposal Facility (page 1 of 3)

Site Name: PIN-3, Lady Franklin Point
Landfill: Tier II Disposal Facility
Date Inspected: August 18, 2014
Inspected by: Andrew Passalis, P.Eng.

Photo (Tier II-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
1	P314_2283	4337	18/08/14	409521	7597450	View looking south at MW-9
2	P314_2286	4245	18/08/14	409461	7597423	View looking east along north toe of Tier II DF
3	P314_2287	4376	18/08/14	409459	7597423	View looking south along west toe of Tier II DF
4	P314_2288	4283	18/08/14	409487	7597404	View looking east along north crest of Tier II DF
5	P314_2289	4369	18/08/14	409485	7597403	View looking south along west crest of Tier II DF
6	P314_2290	1717	18/08/14	409488	7597403	Panoramic view looking east to south from northwest crest of Tier II DF
7	P314_2291	4277	18/08/14	409483	7597407	View west at linear depression on northwest side slope of Tier II DF - FEATURE E (new)
8	P314_2292	4275	18/08/14	409466	7597408	View east at linear depression on northwest side slope of Tier II DF - FEATURE E (new)
9	P314_2293	4435	18/08/14	409480	7597401	View looking west at minor erosion on northwest side slope x2 - FEATURE J (new)
10	P314_2294	4422	18/08/14	409448	7597398	View looking east at minor erosion on northwest side slope x2 - FEATURE J (new)
11	P314_2295	4401	18/08/14	409445	7597391	View looking east at minor erosion on west side slope - FEATURE J (new)
12	P314_2296	4334	18/08/14	409469	7597371	View looking east at erosion/striation on west side slope - FEATURE I (new)
13	P314_2297	4366	18/08/14	409486	7597372	View looking west at erosion/striation on west side slope - FEATURE I (new)
14	P314_2298	4367	18/08/14	409487	7597350	View looking north along west crest of Tier II DF
15	P314_2299	4335	18/08/14	409489	7597348	View looking east along south crest of Tier II DF
16	P314_2300	1790	18/08/14	409489	7597351	Panoramic view looking north to east from southwest crest of Tier II DF
17	P314_2301	4361	18/08/14	409487	7597348	View looking southwest at pothole below southwest crest - FEATURE B (new)
18	P314_2302	4335	18/08/14	409489	7597343	View looking southwest at pothole below southwest crest - FEATURE B (new)
19	P314_2303	4365	18/08/14	409461	7597327	View looking northeast minor erosion along southwest corner slope - FEATURE I (new)
20	P314_2304	4347	18/08/14	409459	7597329	View looking north along west toe of Tier II DF

Table XXVIII: Landfill Visual Inspection Photo Log – Tier II Soil Disposal Facility (page 2 of 3)

Photo (Tier II-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
21	P314_2305	4278	18/08/14	409463	7597325	View looking east along south toe of Tier II DF
22	P314_2306	4422	18/08/14	409451	7597307	View looking northeast at MW-10
23	P314_2310	969	18/08/14	409519	7597287	Panoramic view looking northwest to northeast at south side of Tier II DF
24	P314_2313	4356	18/08/14	409536	7597308	View looking north at former drainage channel and sparse vegetation located along south toe of Tier II DF
25	P314_2316	4293	18/08/14	409598	7597324	View looking west along south toe of Tier II DF
26	P314_2317	4474	18/08/14	409599	7597325	View looking north along east toe of Tier II DF
27	P314_2318	4273	18/08/14	409590	7597320	View looking north at uneven area (erosion) at southeast toe - FEATURE G (new)
28	P314_2319	4382	18/08/14	409585	7597334	View looking south at uneven area (erosion) at southeast toe - FEATURE G (new)
29	P314_2320	4418	18/08/14	409574	7597348	View looking southeast at minor erosion on southeast crest - FEATURE G (new)
30	P314_2321	4303	18/08/14	409570	7597351	View looking west along south crest of Tier II DF
31	P314_2322	4318	18/08/14	409573	7597353	View looking north along east crest of Tier II DF
32	P314_2323	1395	18/08/14	409569	7597353	Panoramic view looking west to north from southeast crest of Tier II DF
33	P314_2324	4281	18/08/14	409545	7597340	View looking west at VT-8
34	P314_2325	4331	18/08/14	409556	7597349	View looking southeast at pothole depression below south crest - FEATURE C (new)
35	P314_2327	4385	18/08/14	409552	7597353	View south at minor erosion on south side slope - FEATURE H (new)
36	P314_2328	4303	18/08/14	409531	7597346	View looking east at minor depression below south crest - FEATURE C (new)
37	P314_2329	4441	18/08/14	409525	7597349	View looking south at minor erosion on south side slope - FEATURE H (new)
38	P314_2330	4398	18/08/14	409524	7597349	View looking south at minor erosion along south crest - FEATURE H (new)
39	P314_2331	4384	18/08/14	409504	7597348	View looking east at VT-07
40	P314_2332	4327	18/08/14	409509	7597344	View looking east at depression along southwest crest - FEATURE B
41	P314_2333	4387	18/08/14	409516	7597350	View looking southeast at depression along southwest crest - FEATURE B
42	P314_2334	4415	18/08/14	409498	7597356	Typical sparse vegetation located on cover of Tier II DF
43	P314_2335	4402	18/08/14	409572	7597361	View looking southeast at erosion along east crest - FEATURE G (new)
44	P314_2336	4308	18/08/14	409577	7597354	View looking northeast at erosion along east crest - FEATURE G (new)
45	P314_2338	4382	18/08/14	409572	7597367	View looking east at depression 3.5 m below crest on east side slope - FEATURE D (new)
46	P314_2340	4383	18/08/14	409572	7597386	View looking south at uneven crest on east side of Tier II DF
47	P314_2341	4382	18/08/14	409570	7597381	View looking southeast at depression on east crest of Tier II DF - FEATURE D (new)
48	P314_2342	4379	18/08/14	409569	7597377	View looking east at depression on east crest of Tier II DF - FEATURE D (new)
49	P314_2343	4250	18/08/14	409572	7597406	View looking south along east crest of Tier II DF

Table XXVIII: Landfill Visual Inspection Photo Log – Tier II Soil Disposal Facility (page 3 of 3)

Photo (Tier II-)	Filename	Size (KB)	Date	Vantage Point		Caption
				Easting	Northing	
50	P314_2344	4332	18/08/14	409569	7597407	View looking west along north crest of Tier II DF
51	P314_2346	1280	18/08/14	409569	7597404	Panoramic view looking south to west from northeast crest of Tier II DF
52	P314_2347	4332	18/08/14	409573	7597396	View looking east at minor erosion on northeast side slope - FEATURE F (new)
53	P314_2348	4277	18/08/14	409599	7597427	View looking south along east toe of Tier II DF
54	P314_2349	4356	18/08/14	409595	7597429	View looking west along north toe of Tier II DF
55	P314_2350	4399	18/08/14	409601	7597426	View looking southwest at erosion near northeast toe - FEATURE F (new)
56	P314_2351	4430	18/08/14	409555	7597406	View looking west at VT-6
57	P314_2352	4431	18/08/14	409551	7597405	View looking north at depression near crest on north side slope - FEATURE A
58	P314_2353	4301	18/08/14	409542	7597389	View looking south at minor depression on cover - FEATURE C (new)
59	P314_2354	4436	18/08/14	409548	7597383	View looking west at minor depression on cover - FEATURE C (new)
60	P314_2355	4336	18/08/14	409503	7597405	View looking east at VT-5
61	P314_2356	4307	18/08/14	409513	7597407	View looking northwest at depression on north side slope - FEATURE E
62	P314_2357	4386	18/08/14	409512	7597404	View looking east at linear depression near north crest - FEATURE E (new)
Soil Sampling and Groundwater Wells						
MW9	P314_2284	4347	18/08/14	409515	7597440	Sampling location P314-9W located upgradient of Tier II DF
9W	P314_2285	4433	18/08/14	409510	7597437	View looking northeast at MW-9 located upgradient of Tier II DF
MW10	P314_2307	4394	18/08/14	409458	7597307	Sampling location P314-10W located downgradient of Tier II DF
10W	P314_2308	4260	18/08/14	409461	7597302	View looking northwest MW-10 located downgradient of Tier II DF
MW11	P314_2311	4249	18/08/14	409527	7597299	Sampling location P314-11W located downgradient of Tier II DF
11W	P314_2312	4414	18/08/14	409528	7597295	View looking north MW-11 located downgradient of Tier II DF
MW12	P314_2314	4294	18/08/14	409598	7597306	Sampling location P314-12W located downgradient of Tier II DF
12W	P314_2315	4350	18/08/14	409596	7597302	View looking northeast at MW-12 located downgradient of Tier II DF

8.5 THERMAL MONITORING DATA

All thermistors at the Tier II Disposal Facility were inspected and found to be in good condition with no significant concerns identified. Data from all thermistors were successfully retrieved and all analogues/thermocouples were observed to be functioning properly at the time of the inspection, with the exception of sensor #16 at each of the thermistor locations. Further review of the downloaded data identified a consistent error in temperature readings obtained from these sensors throughout the monitoring period. All clocks exhibited slight drift and were synchronized using the Prolog software. Other maintenance included installation of new grounding screws on the dataloggers at VT-5 and VT-7.

Batteries were replaced in all dataloggers with new manufacturer supplied batteries (ULB-1 and ULB-15) expected to be functional until summer 2019.

Thermistor Annual Maintenance Reports (VT-5 to VT-8) are presented in the following pages.

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT-5	Inclination Vertical
Install Date: 2004-09-09	First Date Event 2007-08-23 Last Date Event 2009-08-09
Coordinates and Elevation N 9588.91	E 9233.938 Elev 7.82
Length of Cable (m) 11.5	Cable Lead Above Ground (m) 4.2 Nodal Points 16
Datalogger Serial # 108066	Cable Serial Number 1611

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads		x	Periodic errors in Bead 10 readings. Bead 16 not working on datalogger.
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main 11.34	Aux 13.02	
	(11.34 prior to change)	(12.77 prior to change)	

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	8.449	12.1784
2	8.489	13.2915
3	8.286	13.8939
4	11.645	6.8718
5	12.706	5.0542
6	14.005	3.0769
7	15.95	0.4694
8	18.29	-2.2142

Bead	ohms	Degrees C
9	18.984	-2.9778
10	19.688	-3.3083
11	20.48	-4.6111
12	21.08	-5.2276
13	21.75	-5.8493
14	22.57	-6.4791
15	23.4	-7.288
16	24.37	381.0738

Observations and Proposed Maintenance

Download file: Site_066_PIN-3 VT-5_Aug_18_2014
Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19
Replace grounding cable set screw.

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location: Tier II Disposal Facility
Thermistor Number: VT-6	Inclination: Vertical
Install Date: 2004-09-08	First Date Event: 2007-08-23 Last Date Event: 2009-08-09
Coordinates and Elevation: N 9431.74 E 10888.36 Elev 18.5	
Length of Cable (m) 11.5	Cable Lead Above Ground (m) 4.2 Nodal Points: 16
Datalogger Serial # 111096	Cable Serial Number: 1612

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads		x	Bead 16 not working on datalogger
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main 11.34	Aux 13.5	
	(8.13 prior to change)	(12.77 prior to change)	

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	7.74	15.007
2	9.96	9.9996
3	8.066	14.5211
4	10.803	8.3903
5	12.774	4.9319
6	13.989	3.1169
7	16.121	0.262
8	17.893	-1.7998

Bead	ohms	Degrees C
9	18.607	-2.6224
10	19.381	-3.4335
11	20.18	-4.331
12	21.01	-5.177
13	21.73	-5.8304
14	22.51	-6.435
15	23.55	-7.4146
16	24.31	381.0738

Observations and Proposed Maintenance

Download file: Site_096_PIN-3 VT-6_Aug_17_2014
Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location	Tier II Disposal Facility		
Thermistor Number: VT-7	Inclination	Vertical		
Install Date: 2003-09-10	First Date Event	2007-08-23	Last Date Event	2009-08-09
Coordinates and Elevation	N 9373.65	E 10849.85	Elev	17.4
Length of Cable (m) 10.5	Cable Lead Above Ground (m) 4.2	Nodal Points	16	
Datalogger Serial # 111099	Cable Serial Number		1613	

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads		x	Bead 16 not working on datalogger
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main 11.34	Aux 13.5	
	(11.34 prior to change)	(13.14 prior to change)	

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	8.044	14.5027
2	9.706	10.6214
3	12.433	5.5108
4	13.589	3.6966
5	15.25	-0.8835
6	17.116	1.3896
7	17.816	-1.6996
8	18.495	-2.4569

Bead	ohms	Degrees C
9	19.365	-3.3735
10	20.12	-4.2572
11	20.86	-5.0065
12	21.55	-5.6799
13	22.19	-6.2649
14	22.92	-6.7813
15	23.3	-7.1781
16	23.51	381.7178

Observations and Proposed Maintenance

Download file: Site_099_PIN-3 VT-7_Aug_17_2014 Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19 Replace grounding cable set screw.
--

Contractor Name: Sila Remediation Inc.	Inspection Date: 2014-08-17
Prepared By: A.Passalis	

Thermistor Information

Site Name: PIN-3	Thermistor Location Tier II Disposal Facility
Thermistor Number: VT-8	Inclination Vertical
Install Date: 2003-09-09	First Date Event 2007-08-23 Last Date Event 2009-08-09
Coordinates and Elevation N 9374.48 E 10889.74	Elev 17.4
Length of Cable (m) 10.5	Cable Lead Above Ground (m) 4.2 Nodal Points 16
Datalogger Serial # 111091	Cable Serial Number 1614

Thermistor Inspection

	Good		Problem/Maintenance
	Yes	No	
Casing	x		
Cover	x		
Data Logger	x		
Cable	x		
Beads		x	Bead 16 not working on datalogger
Battery Installation Date	2014-08-17 (new)		
Battery Levels	Main 11.34	Aux 12.9	
	(11.34 prior to change)		(12.53 prior to change)

Manual Ground Temperature Readings

Bead	ohms	Degrees C
1	8.145	14.2713
2	10.184	9.5998
3	12.339	5.673
4	13.402	3.9787
5	15.319	1.2914
6	17.313	-1.1234
7	18.039	-1.9643
8	18.729	-2.7235

Bead	ohms	Degrees C
9	19.483	-3.5041
10	20.18	-4.3152
11	20.97	-5.0757
12	21.75	-5.8493
13	22.41	-6.4357
14	23.05	-6.8659
15	23.41	-7.2577
16	23.8	381.0738

Observations and Proposed Maintenance

Download file: Site_091_PIN-3 VT-8_Aug_17_2014
Both batteries (ULB-1 and ULB-15) changed out. Manufactures replacement date: 07/19

8.6 SOIL SAMPLE ANALYTICAL DATA

The soil chemical analysis results of analytical data for the 2014 Tier II Soil Disposal Facility samples are presented in Table XXXII below. Certificates of analysis and 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 XXIX: Soil Chemical Analysis Results – Tier II Soil Disposal Facility

Sample #	Location	Depth (cm)	Parameters												F1	F2	F3
			As [mg/kg]	Cd [mg/kg]	Cr [mg/kg]	Co [mg/kg]	Cu [mg/kg]	Pb [mg/kg]	Ni [mg/kg]	Zn [mg/kg]	Hg [mg/kg]	PCBs [mg/kg]					
			C ₆ -C ₁₀ [mg/kg]	C ₁₀ -C ₁₆ [mg/kg]	C ₁₆ -C ₃₄ [mg/kg]												
Detection Limit			0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.010	0.1	10	50	50		
Upgradient Soil Samples																	
P314-9WA	MW-9	0-15	1.4	0.01	7.1	2.9	7.2	<4.9	3.7	7	<0.01	<0.1	<10	<50	<50		
P314-9WB		40-50	1.4	<0.01	5.0	2.9	7.0	3.9	3.2	6	<0.01	<0.1	<10	<50	<50		
Downgradient Soil Samples																	
P314-10WA	MW-10	0-15	1.0	<0.10	4.2	1.7	56.5	<4.9	8.2	5	0.01	<0.1	<10	<50	52		
P314-10WB		40-50	1.1	<0.01	3.3	2.1	4.3	<5	2.9	4	<0.01	<0.1	<10	<50	<50		
P314-11WA	MW-11	0-15	0.7	0.02	2.8	1.5	15.9	<4.9	3.4	4	<0.01	<0.1	<10	<50	<50		
P314-11WB		40-50	0.9	<0.01	4.4	2.5	4.5	<5	3.8	9	<0.01	<0.1	<10	<50	<50		
P314-12WA	MW-12	0-15	1.5	0.012	4.3	1.9	71.5	<4.9	9.1	8	0.015	<0.1	<10	<50	<50		
P314-12WB		40-50	0.9	<0.01	3.8	2.7	10.7	<4.9	3.6	6	<0.01	<0.1	<10	<50	<50		

8.7 GROUNDWATER SAMPLE ANALYTICAL DATA

The groundwater chemical analysis results of analytical data for the 2014 Tier II Disposal Facility samples are presented in Table XXX. As noted above, Certificates of analysis and groundwater samples collected as part of the QA/QC program are presented in Annexes 1 and 2.

Table XXX: Groundwater Chemical Analysis Results – Tier II Soil Disposal Facility

Sample #	Location	Parameters												
		As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Ni [mg/L]	Zn [mg/L]	Hg [mg/L]	PCBs [ug/L]	F1	F2	F3
												C ₆ -C ₁₀ [mg/L]	C ₁₀ -C ₁₆ [mg/L]	C ₁₆ -C ₃₄ [mg/L]
Detection Limit		0.0002	0.00001	0.0005	0.0001	0.001	0.0001	0.0005	0.001	0.000005	0.1	0.2	0.2	0.1
Upgradient Groundwater Samples														
P314-9W	MW-9	Well Dry												
Downgradient Groundwater Samples														
P314-10W	MW-10	Well Dry												
P314-11W	MW-11	0.0118	0.00014	0.4080	0.0108	0.241	0.9960	0.0655	0.289	0.000080	<0.1	<0.2	0.2	0.2
P314-12W	MW-12	0.0135	0.00002	0.2030	0.0158	0.138	0.1250	0.1150	0.271	0.000027	<0.1	<0.2	<0.2	<0.1

8.8 MONITORING WELL SAMPLING/INSPECTION LOGS (MW-9 TO MW-12)

The monitoring well sampling and inspection logs for MW-9 to MW-12 are presented in this section.

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-18	Time:	12:10
Names of Samplers:	A.Passalis		
Landfill Name:	Tier II Disposal Facility		
Monitoring Well ID:	MW-9		
Sample Number:	N/A (dry)		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	39		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	493		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	73		
Depth to water surface (cm)= (from top of pipe)	N/A	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	N/A		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	185	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	N/A		
Static volume of water in well (mL)=	N/A		
Free product thickness (mm)=	N/A	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	N	Purging/Sampling Equipment:	N/A
Volume Purged Water=	N/A		
Decontamination required: (Y/N)	N/A		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	N/A		
Final Conductivity (uS/cm)=	N/A		
Final Temperature (degC)=	N/A		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-18	Time:	12:40
Names of Samplers:	A.Passalis		
Landfill Name:	Tier II Disposal Facility		
Monitoring Well ID:	MW-10		
Sample Number:	N/A (dry)		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	70		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	460		
Length screened section (cm)=	299		
Depth to top of screen (cm)= (from ground surface)	50		
Depth to water surface (cm)= (from top of pipe)	N/A	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	N/A		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	115	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	N/A		
Static volume of water in well (mL)=	N/A		
Free product thickness (mm)=	N/A	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	N	Purging/Sampling Equipment:	N/A
Volume Purged Water=	N/A		
Decontamination required: (Y/N)	N/A		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	N/A		
Final Conductivity (uS/cm)=	N/A		
Final Temperature (degC)=	N/A		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	11:20
Names of Samplers:	A.Passalis		
Landfill Name:	Tier II Disposal Facility		
Monitoring Well ID:	MW-11		
Sample Number:	P314-11W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	39		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	483		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	74		
Depth to water surface (cm)= (from top of pipe)	144.5	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	105.5		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	179	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	34.5		
Static volume of water in well (mL)=	677		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	700 mL		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.8		
Final Conductivity (uS/cm)=	1295		
Final Temperature (degC)=	1.9		

Site Name:	PIN-3	Lady Franklin Point	Nunavut
Date of Sampling Event:	2014-08-19	Time:	10:55
Names of Samplers:	A.Passalis		
Landfill Name:	Tier II Disposal Facility		
Monitoring Well ID:	MW-12		
Sample Number:	P314-12W		
Condition of Well:	Good		
Measured Data			
Well pipe height above ground	60		
Diameter of well (cm)=	5	ID	
Depth of well installation (cm)= (from ground surface)	470		
Length screened section (cm)=	300		
Depth to top of screen (cm)= (from ground surface)	56		
Depth to water surface (cm)= (from top of pipe)	166	Measurement method: (meter, tape, etc)	Interface Meter
Static water level (cm)= (below ground surface)	106		
Measured well refusal depth (cm)= (i.e. depth to frozen ground)	204	Evidence of sludge or siltation:	No
Thickness of water column (cm)=	38		
Static volume of water in well (mL)=	746		
Free product thickness (mm)=	0	Measurement method: (meter, paste, etc)	Interface Meter
Purging: (Y/N)	Y	Purging/Sampling Equipment:	Waterra Tubing, Foot Valve
Volume Purged Water=	800 mL		
Decontamination required: (Y/N)	N, dedicated		
Number washes:	N/A		
Number rinses:	N/A		
Final pH=	7.9		
Final Conductivity (uS/cm)=	2070		
Final Temperature (degC)=	3.2		

ANNEX 1

LABORATORY RESULTS

Sample Integrity Scorecard

Lots received between 'Aug 01, 2014' and 'Dec 05, 2014'

Client: sila

Sample Integrity Summary

	Total Lots	Total	Total Failed	% Passed
Process	5	3	2	60
Data Quality	5	4	1	80

Agreement: 105540 (Special Project - Cambridge Bay)

Lot ID: 1022226 PIN-3

Process

Was the waybill clearly filled in? Yes

Were the sample containers packaged well? Yes If No, please explain:

Was the COC received? Yes

Was the COC filled in adequately and legibly? Yes If No, please explain:

Was the COC received without damage? Yes If No, please explain:

Were Exova supplies used? No * If No, please explain: Maxxam containers

Were the sample containers clearly labelled? Yes If No, please explain:

Data Quality

Were the samples received within recommended holding times? Yes

Were samples received in containers appropriate to the matrix and analysis required? Yes

Were the expected number of samples received? No * If No, please explain: See note.

Was the sample received in the prescribed temperature range? Yes Please provide temperature °C:

Were all samples received intact (not damaged/broken)? No * If No, please explain: See note.

Were all samples received without adhesive tape sealing the lids? Yes If No, please explain:

For water samples only, were they received without a noticeable layer of sediment? Yes If No, please explain:

Was sufficient sample volume received? Yes If No, please explain:

Were non-conformance/verification notes entered into Sample Login for any of the above items that did not meet Exova's sample or COC requirements? Yes

Non-Conformances

Process: 1 Data Quality: 2 Total: 3

Lot ID: 1022352 PIN-2

Process

Was the waybill clearly filled in? Yes

Were the sample containers packaged well? Yes If No, please explain:

Was the COC received? Yes

Was the COC filled in adequately and legibly? Yes If No, please explain:

Was the COC received without damage? Yes If No, please explain:

Were Exova supplies used? Yes If No, please explain:

Were the sample containers clearly labelled? Yes If No, please explain:

Sample Integrity Scorecard

Lots received between 'Aug 01, 2014' and 'Dec 05, 2014'

Lot ID: 1022352 PIN-2

Data Quality

Were the samples received within recommended holding times? Yes

Were samples received in containers appropriate to the matrix and analysis required? Yes

Were the expected number of samples received? Yes If No, please explain:

Was the sample received in the prescribed temperature range? Yes Please provide temperature °C: 4.0

Were all samples received intact (not damaged/broken)? Yes If No, please explain:

Were all samples received without adhesive tape sealing the lids? Yes If No, please explain:

For water samples only, were they received without a noticeable layer of sediment? Yes If No, please explain:

Was sufficient sample volume received? Yes If No, please explain:

Were non-conformance/verification notes entered into Sample Login for any of the above items that did not meet Exova's sample or COC requirements? Yes

Non-Conformances

Process: 0 Data Quality: 0 Total: 0

Lot ID: 1023068 CAM-3

Process

Was the waybill clearly filled in? Yes

Were the sample containers packaged well? Yes If No, please explain:

Was the COC received? Yes

Was the COC filled in adequately and legibly? Yes If No, please explain:

Was the COC received without damage? Yes If No, please explain:

Were Exova supplies used? Yes If No, please explain:

Were the sample containers clearly labelled? Yes If No, please explain:

Data Quality

Were the samples received within recommended holding times? Yes

Were samples received in containers appropriate to the matrix and analysis required? Yes

Were the expected number of samples received? Yes If No, please explain:

Was the sample received in the prescribed temperature range? Yes Please provide temperature °C:

Were all samples received intact (not damaged/broken)? Yes If No, please explain:

Were all samples received without adhesive tape sealing the lids? Yes If No, please explain:

For water samples only, were they received without a noticeable layer of sediment? Yes If No, please explain:

Was sufficient sample volume received? Yes If No, please explain:

Were non-conformance/verification notes entered into Sample Login for any of the above items that did not meet Exova's sample or COC requirements? Yes

Non-Conformances

Process: 0 Data Quality: 0 Total: 0

Lot ID: 1023106 PIN-4

Process

Was the waybill clearly filled in? Yes

Were the sample containers packaged well? Yes If No, please explain:

Was the COC received? Yes

Was the COC filled in adequately and legibly? Yes If No, please explain:

Was the COC received without damage? Yes If No, please explain:

Sample Integrity Scorecard

Lots received between 'Aug 01, 2014' and 'Dec 05, 2014'

Lot ID: 1023106 PIN-4

Process

Were Exova supplies used? Yes If No, please explain:

Were the sample containers clearly labelled? Yes If No, please explain:

Data Quality

Were the samples received within recommended holding times? Yes

Were samples received in containers appropriate to the matrix and analysis required? Yes

Were the expected number of samples received? Yes If No, please explain:

Was the sample received in the prescribed temperature range? Yes Please provide temperature °C:

Were all samples received intact (not damaged/broken)? Yes If No, please explain:

Were all samples received without adhesive tape sealing the lids? Yes If No, please explain:

For water samples only, were they received without a noticeable layer of sediment? Yes If No, please explain:

Was sufficient sample volume received? Yes If No, please explain:

Were non-conformance/verification notes entered into Sample Login for any of the above items that did not meet Exova's sample or COC requirements? Yes

Non-Conformances

Process: 0 Data Quality: 0 Total: 0

Lot ID: 1023703 CAM-1

Process

Was the waybill clearly filled in? Yes

Were the sample containers packaged well? Yes If No, please explain:

Was the COC received? Yes

Was the COC filled in adequately and legibly? No * If No, please explain: see notes

Was the COC received without damage? Yes If No, please explain:

Were Exova supplies used? Yes If No, please explain:

Were the sample containers clearly labelled? Yes If No, please explain:

Data Quality

Were the samples received within recommended holding times? Yes

Were samples received in containers appropriate to the matrix and analysis required? Yes

Were the expected number of samples received? Yes If No, please explain:

Was the sample received in the prescribed temperature range? Yes Please provide temperature °C:

Were all samples received intact (not damaged/broken)? Yes If No, please explain:

Were all samples received without adhesive tape sealing the lids? Yes If No, please explain:

For water samples only, were they received without a noticeable layer of sediment? Yes If No, please explain:

Was sufficient sample volume received? Yes If No, please explain:

Were non-conformance/verification notes entered into Sample Login for any of the above items that did not meet Exova's sample or COC requirements? Yes

Non-Conformances

Process: 1 Data Quality: 0 Total: 1

* is a non-conformance

Report Transmission Cover Page

Bill To:	Biogenie S.R.D.C. Inc.	Project:		Lot ID:	1022226
Report To:	Biogenie S.R.D.C. Inc.	ID:	PIN-3 2014	Control Number:	C0042501
	350, rue Franquet	Name:	2014 LFM	Date Received:	Aug 25, 2014
	Sainte-Foy, QC, Canada	Location:	Lady Franklin	Date Reported:	Sep 2, 2014
	G1P 4P3	LSD:		Report Number:	1942877
Attn:	Eric Thomassin-Lacroix	P.O.:			
Sampled By:	A. Passalis	Acct code:	14-071-309663		
Company:	SILA				

Contact & Affiliation	Address	Delivery Commitments	
Accounts Payable Biogenie S.R.D.C. Inc.	350, rue Franquet Sainte-Foy, Quebec G1P 4P3 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: n/a	On [Lot Approval and Final Test Report Approval] send (Invoice) by Post	M
Eric Thomassin-Lacroix Biogenie S.R.D.C. Inc.	350, rue Franquet Sainte-Foy, Quebec G1P 4P3 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: n/a	On [Lot Approval and Final Test Report Approval] send (COC, Test Report, Invoice) by Post	M
Andrew Passalis Biogenie S.R.D.C. Inc.	350, rue Franquet Sainte-Foy, Quebec G1P 4P3 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: andrew.passalis@gmail.com	On [Report Approval] send (Test Report, COC) by Email - Single Report	
jean-pierre Pelletier Biogenie S.R.D.C. Inc.	350, rue Franquet Sainte-Foy, Quebec G1P 4P3 Phone: (418) 653-4422 Fax: (418) 653-3583 Email: jean-peirre.pelletier@lvm.ca	On [Report Approval] send (Test Report, COC) by Email - Single Report	

Notes To Clients:

- Analysis was performed on samples 102226 (1-61) that exceeded the recommended holding time for BTEX/F1 analysis.

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-1	1022226-2	1022226-3	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-1A	P314-1B	P314-2A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion						
Mercury	Strong Acid Extractable	mg/kg	0.07	<0.01	0.01	0.01
Antimony	Strong Acid Extractable	mg/kg	0.8	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	2.1	1	1.5	0.2
Barium	Strong Acid Extractable	mg/kg	41	13	22	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	0.2	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.28	<0.01	0.03	0.01
Chromium	Strong Acid Extractable	mg/kg	5.2	2.6	4.9	0.5
Cobalt	Strong Acid Extractable	mg/kg	3.0	1.3	2.7	0.1
Copper	Strong Acid Extractable	mg/kg	13.5	1.9	6.9	1
Lead	Strong Acid Extractable	mg/kg	5.7	<5.0	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	1.1	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	4.9	1.5	3.4	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.4	0.2	0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.2	3.1	3.2	1
Uranium	Strong Acid Extractable	mg/kg	1.7	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	14.3	9.3	11.1	0.1
Zinc	Strong Acid Extractable	mg/kg	57	4	7	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	108	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		14.2	<5	59.1	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-1	1022226-2	1022226-3	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-1A	P314-1B	P314-2A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	50.80	7.96	2.47	
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	%	130	130	150	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-4	1022226-5	1022226-6	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-2B	P314-3A	P314-3B	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.0	1.4	2.4	0.2
Barium	Strong Acid Extractable	mg/kg	33	47	39	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	0.05	0.27	0.01
Chromium	Strong Acid Extractable	mg/kg	7.0	4.3	5.3	0.5
Cobalt	Strong Acid Extractable	mg/kg	3.1	2.3	3.9	0.1
Copper	Strong Acid Extractable	mg/kg	5.3	7.6	14.8	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<5.0	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	4.5	3.5	6.8	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	0.1	0.2	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.2	3.3	3.3	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	0.9	0.5
Vanadium	Strong Acid Extractable	mg/kg	13.1	10.9	13.6	0.1
Zinc	Strong Acid Extractable	mg/kg	7	7	7	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	45.8	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-4	1022226-5	1022226-6	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-2B	P314-3A	P314-3B	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	1.34	20.30	4.81	
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	%	140	140	140	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-7	1022226-8	1022226-9	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-4A	P314-4B	P314-5A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion						
Mercury	Strong Acid Extractable	mg/kg	0.10	0.04	<0.01	0.01
Antimony	Strong Acid Extractable	mg/kg	0.3	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.5	6.2	1.4	0.2
Barium	Strong Acid Extractable	mg/kg	30	76	40	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	0.2	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.53	0.53	0.03	0.01
Chromium	Strong Acid Extractable	mg/kg	2.8	8.8	5.7	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.1	3.1	3.2	0.1
Copper	Strong Acid Extractable	mg/kg	8.9	22.2	13.7	1
Lead	Strong Acid Extractable	mg/kg	5.9	6.6	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	1.2	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	2.8	10.3	5.4	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	0.4	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.2	0.3	0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	0.15	0.26	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.4	2.5	3.0	1
Uranium	Strong Acid Extractable	mg/kg	0.8	2.4	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	4.9	13.1	17.6	0.1
Zinc	Strong Acid Extractable	mg/kg	55	13	10	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	0.006	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	60	53	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		15.5	13.1	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-7	1022226-8	1022226-9	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-4A	P314-4B	P314-5A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	66.10	53.60	20.80	
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	%	150	140	140	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-10	1022226-11	1022226-12	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-5B	P314-6A	P314-6B	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.5	0.9	1.2	0.2
Barium	Strong Acid Extractable	mg/kg	44	36	21	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.37	0.01	0.07	0.01
Chromium	Strong Acid Extractable	mg/kg	5.6	3.3	4.5	0.5
Cobalt	Strong Acid Extractable	mg/kg	3.9	1.9	3.5	0.1
Copper	Strong Acid Extractable	mg/kg	17.7	4.6	12.9	1
Lead	Strong Acid Extractable	mg/kg	5.8	<5.0	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	5.5	3.1	5.0	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	2.9	3.6	3.5	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	17.5	11.8	23.9	0.1
Zinc	Strong Acid Extractable	mg/kg	12	5	7	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-10	1022226-11	1022226-12	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-5B	P314-6A	P314-6B	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	9.82	10.30	23.80	
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	%	140	150	150	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-13	1022226-14	1022226-15	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-7A	P314-7B	P314-8A	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.3	0.5	1.0	0.2
Barium	Strong Acid Extractable	mg/kg	41	23	46	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.03	<0.01	0.04	0.01
Chromium	Strong Acid Extractable	mg/kg	4.8	3.1	5.9	0.5
Cobalt	Strong Acid Extractable	mg/kg	3.4	1.6	2.6	0.1
Copper	Strong Acid Extractable	mg/kg	12.1	17.4	10.1	1
Lead	Strong Acid Extractable	mg/kg	<4.9	<5.0	17.5	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	5.0	2.7	4.1	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.5	3.7	3.4	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	15.8	9.2	10.6	0.1
Zinc	Strong Acid Extractable	mg/kg	8	4	10	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	53	<50	467	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	665	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	1720	100
% C50+	%		24.9	<5	48.4	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-13	1022226-14	1022226-15	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-7A	P314-7B	P314-8A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	50.90	15.00	7.77	
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	%	130	120	120	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-16	1022226-17	1022226-18	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-8B	P314-9A	P314-9B	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.3	1.1	0.8	0.2
Barium	Strong Acid Extractable	mg/kg	54	25	26	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.02	<0.01	<0.01	0.01
Chromium	Strong Acid Extractable	mg/kg	3.6	6.3	4.3	0.5
Cobalt	Strong Acid Extractable	mg/kg	2.3	2.9	2.3	0.1
Copper	Strong Acid Extractable	mg/kg	10.8	8.9	6.4	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<4.9	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	4.2	4.4	3.2	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.6	3.8	3.7	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	14.7	18.2	15.3	0.1
Zinc	Strong Acid Extractable	mg/kg	7	8	6	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	230	50
F3c C16-C34	Dry Weight	mg/kg	169	<50	158	50
F4c C34-C50	Dry Weight	mg/kg	240	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	610	<100	<100	100
% C50+	%		47.4	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-16	1022226-17	1022226-18	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-8B	P314-9A	P314-9B	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	13.00	9.11	10.80	
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	%	120	120	120	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-19	1022226-20	1022226-21	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-10A	P314-10B	P314-11A	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.7	1	0.7	0.2
Barium	Strong Acid Extractable	mg/kg	20	23	20	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	<0.01	0.07	0.01
Chromium	Strong Acid Extractable	mg/kg	3.0	4.4	4.3	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.6	2.7	2.1	0.1
Copper	Strong Acid Extractable	mg/kg	7.3	21.8	7.1	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<4.9	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	2.4	3.8	3.3	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.9	3.5	3.5	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	10.7	20.9	12.1	0.1
Zinc	Strong Acid Extractable	mg/kg	5	7	6	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-19	1022226-20	1022226-21	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-10A	P314-10B	P314-11A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	17.20	12.00	17.10	
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	%	120	110	110	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-22	1022226-23	1022226-24	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-11B	P314-12A	P314-12B	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	2.2	0.9	1	0.2
Barium	Strong Acid Extractable	mg/kg	37	36	23	1
Beryllium	Strong Acid Extractable	mg/kg	0.2	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	0.03	0.03	0.01
Chromium	Strong Acid Extractable	mg/kg	6.4	3.9	4.1	0.5
Cobalt	Strong Acid Extractable	mg/kg	4.0	1.7	2.0	0.1
Copper	Strong Acid Extractable	mg/kg	16.3	7.0	3.3	1
Lead	Strong Acid Extractable	mg/kg	<4.9	<4.9	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	6.3	3.1	3.0	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.4	3.4	3.6	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	21.2	8.2	10.0	0.1
Zinc	Strong Acid Extractable	mg/kg	12	12	6	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	17.6	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-22	1022226-23	1022226-24	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-11B	P314-12A	P314-12B	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	16.00	16.30	3.30	
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	%	130	120	120	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-25	1022226-26	1022226-28	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-13A	P314-14A	P314-15A	
		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	0.02	0.01
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.2	1.0	1.3	0.2
Barium	Strong Acid Extractable	mg/kg	17	17	29	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.06	0.02	0.04	0.01
Chromium	Strong Acid Extractable	mg/kg	3.8	3.8	4.1	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.4	1.4	2.3	0.1
Copper	Strong Acid Extractable	mg/kg	4.7	3.0	7.0	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<5.0	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	2.5	2.1	3.9	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	0.1	0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.2	3.4	3.3	1
Uranium	Strong Acid Extractable	mg/kg	1	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	8.2	8.2	9.1	0.1
Zinc	Strong Acid Extractable	mg/kg	16	7	11	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	22.2	44.8	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-25	1022226-26	1022226-28	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-13A	P314-14A	P314-15A	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	26.80	8.92	11.80	
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	%	140	140	140	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-29	1022226-30	1022226-31	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-15B	P314-16A	P314-16B	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.6	1.8	2.6	0.2
Barium	Strong Acid Extractable	mg/kg	26	19	20	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	0.04	0.02	0.01
Chromium	Strong Acid Extractable	mg/kg	4.0	5.6	3.6	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.5	2.1	2.3	0.1
Copper	Strong Acid Extractable	mg/kg	4.7	17.6	6.4	1
Lead	Strong Acid Extractable	mg/kg	<4.9	<4.9	5.3	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	1.1	1
Nickel	Strong Acid Extractable	mg/kg	2.3	9.9	6.5	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	0.27	0.12	0.05
Tin	Strong Acid Extractable	mg/kg	3.7	3.5	3.6	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	1.0	0.8	0.5
Vanadium	Strong Acid Extractable	mg/kg	8.4	11.4	9.7	0.1
Zinc	Strong Acid Extractable	mg/kg	4	9	5	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	30.0	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-29	1022226-30	1022226-31	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-15B	P314-16A	P314-16B	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	3.45	13.50	5.69	
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	%	140	150	150	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-32	1022226-33	1022226-34	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-5WA	P314-5WB	P314-6WA	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.4	0.9	0.9	0.2
Barium	Strong Acid Extractable	mg/kg	64	39	25	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.01	<0.01	0.02	0.01
Chromium	Strong Acid Extractable	mg/kg	4.7	6.3	6.0	0.5
Cobalt	Strong Acid Extractable	mg/kg	2.4	2.1	3.3	0.1
Copper	Strong Acid Extractable	mg/kg	4.8	3.9	14.1	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<5.0	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	3.0	3.3	6.1	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	5.1	3.4	3.5	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	12.7	10.8	11.9	0.1
Zinc	Strong Acid Extractable	mg/kg	8	6	8	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		22.9	<5	22.2	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-32	1022226-33	1022226-34	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-5WA	P314-5WB	P314-6WA	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	0.85	1.90	4.24	
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	%	120	120	130	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-35	1022226-36	1022226-37	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-6WB	P314-7WA	P314-7WB	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.8	2.0	1.1	0.2
Barium	Strong Acid Extractable	mg/kg	29	57	36	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	<0.01	0.01	0.01
Chromium	Strong Acid Extractable	mg/kg	4.0	4.5	4.3	0.5
Cobalt	Strong Acid Extractable	mg/kg	3.2	2.0	2.3	0.1
Copper	Strong Acid Extractable	mg/kg	14.2	7.2	7.3	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<5.0	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	4.6	3.4	3.7	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.4	3.2	3.2	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	15.0	12.5	14.0	0.1
Zinc	Strong Acid Extractable	mg/kg	6	8	7	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-35	1022226-36	1022226-37	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-6WB	P314-7WA	P314-7WB	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	3.73	3.82	2.41	
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	%	130	120	130	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-38	1022226-39	1022226-40	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-8WA	P314-8WB	P314-9WA	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.7	0.6	1.4	0.2
Barium	Strong Acid Extractable	mg/kg	25	25	49	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	<0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	<0.01	0.01	0.01
Chromium	Strong Acid Extractable	mg/kg	4.0	6.4	7.1	0.5
Cobalt	Strong Acid Extractable	mg/kg	2.0	2.4	2.8	0.1
Copper	Strong Acid Extractable	mg/kg	5.1	7.3	7.2	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<5.0	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	3.1	4.6	3.7	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.5	3.5	3.2	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	8.2	9.9	15.0	0.1
Zinc	Strong Acid Extractable	mg/kg	5	5	7	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-38	1022226-39	1022226-40	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-8WA	P314-8WB	P314-9WA	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	11.50	13.70	2.94	
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	%	130	120	130	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-41	1022226-42	1022226-43	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-9WB	P314-10WA	P314-10WB	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.4	1.0	1.1	0.2
Barium	Strong Acid Extractable	mg/kg	32	45	17	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	0.2	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	0.10	<0.01	0.01
Chromium	Strong Acid Extractable	mg/kg	5.0	4.2	3.3	0.5
Cobalt	Strong Acid Extractable	mg/kg	2.9	1.7	2.1	0.1
Copper	Strong Acid Extractable	mg/kg	7.0	56.5	4.3	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<4.9	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	3.9	8.2	2.9	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	0.15	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.4	3.3	3.5	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	2.6	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	14.7	8.7	10.1	0.1
Zinc	Strong Acid Extractable	mg/kg	6	5	4	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	52	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-41	1022226-42	1022226-43	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-9WB	P314-10WA	P314-10WB	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	4.07	37.40	2.53	
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	%	130	110	110	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-44	1022226-45	1022226-46	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-11WA	P314-11WB	P314-12WA	
		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	0.05	0.01
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	0.3	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.7	0.9	1.5	0.2
Barium	Strong Acid Extractable	mg/kg	23	21	86	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	<0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.02	<0.01	0.12	0.01
Chromium	Strong Acid Extractable	mg/kg	2.8	4.4	4.3	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.5	2.5	1.9	0.1
Copper	Strong Acid Extractable	mg/kg	15.9	4.5	71.6	1
Lead	Strong Acid Extractable	mg/kg	<4.9	<5.0	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	3.4	3.8	9.1	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	0.4	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	<0.1	0.2	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	0.43	0.05
Tin	Strong Acid Extractable	mg/kg	3.3	3.5	2.0	1
Uranium	Strong Acid Extractable	mg/kg	0.5	<0.5	11.3	0.5
Vanadium	Strong Acid Extractable	mg/kg	6.2	10.6	6.5	0.1
Zinc	Strong Acid Extractable	mg/kg	4	9	8	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	0.006	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-44	1022226-45	1022226-46	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-11WA	P314-11WB	P314-12WA	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	43.20	2.69	69.50	
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	120	110	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-47	1022226-48	1022226-49	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-12WB	P314-13WA	P314-13WB	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.9	1.0	0.8	0.2
Barium	Strong Acid Extractable	mg/kg	75	43	90	1
Beryllium	Strong Acid Extractable	mg/kg	0.1	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	<0.01	0.11	0.03	0.01
Chromium	Strong Acid Extractable	mg/kg	3.8	4.2	2.8	0.5
Cobalt	Strong Acid Extractable	mg/kg	2.7	2.3	1.7	0.1
Copper	Strong Acid Extractable	mg/kg	10.7	17.6	5.6	1
Lead	Strong Acid Extractable	mg/kg	<4.9	6.3	<5.0	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	3.6	3.1	2.2	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	0.2	0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.6	3.2	3.2	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	11.1	10.8	7.7	0.1
Zinc	Strong Acid Extractable	mg/kg	6	12	4	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-47	1022226-48	1022226-49	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-12WB	P314-13WA	P314-13WB	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	2.21	14.20	4.20	
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	120	130	50-150

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-50	1022226-51	1022226-52	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-14WA	P314-14WB	P314-15WA	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion						
Mercury	Strong Acid Extractable	mg/kg	0.05	<0.01	0.02	0.01
Antimony	Strong Acid Extractable	mg/kg	0.4	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.7	1.3	0.6	0.2
Barium	Strong Acid Extractable	mg/kg	25	17	25	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.21	0.02	0.07	0.01
Chromium	Strong Acid Extractable	mg/kg	2.0	2.7	2.6	0.5
Cobalt	Strong Acid Extractable	mg/kg	0.9	1.3	1.4	0.1
Copper	Strong Acid Extractable	mg/kg	10.1	1.6	8.1	1
Lead	Strong Acid Extractable	mg/kg	<4.9	<4.9	6.4	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	3.2	1.9	2.3	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	<0.1	0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.4	3.1	3.1	1
Uranium	Strong Acid Extractable	mg/kg	1.1	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	4.0	6.7	9.0	0.1
Zinc	Strong Acid Extractable	mg/kg	11	3	11	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-50	1022226-51	1022226-52	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-14WA	P314-14WB	P314-15WA	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	54.40	9.60	23.10	
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	%	120	120	120	50-150

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-53	1022226-54	1022226-55	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-15WB	P314-16WA	P314-BD1	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.9	0.8	0.9	0.2
Barium	Strong Acid Extractable	mg/kg	29	14	27	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	<0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.06	0.08	0.01	0.01
Chromium	Strong Acid Extractable	mg/kg	4.4	2.5	4.6	0.5
Cobalt	Strong Acid Extractable	mg/kg	2.0	1.3	2.7	0.1
Copper	Strong Acid Extractable	mg/kg	5.1	3.1	8.6	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<5.0	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	2.9	2.0	4.0	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	0.1	0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.2	3.1	3.2	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	11.5	6.9	13.3	0.1
Zinc	Strong Acid Extractable	mg/kg	6	7	7	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		<5	<5	<5	

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
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G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-53	1022226-54	1022226-55	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-15WB	P314-16WA	P314-BD1	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	5.37	21.50	2.44	
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	%	120	120	120	50-150

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
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G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-56	1022226-57	1022226-58	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-BD2	P314-BD3	P314-BD4	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Strong Acid Digestion						
Mercury	Strong Acid Extractable	mg/kg	0.09	<0.01	0.01	0.01
Antimony	Strong Acid Extractable	mg/kg	0.4	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	1.3	2.2	0.9	0.2
Barium	Strong Acid Extractable	mg/kg	29	36	43	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	<0.1	0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.42	0.03	0.11	0.01
Chromium	Strong Acid Extractable	mg/kg	2.7	3.2	4.5	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.2	2.4	2.4	0.1
Copper	Strong Acid Extractable	mg/kg	7.7	12.8	8.6	1
Lead	Strong Acid Extractable	mg/kg	<4.9	<5.0	7.1	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	2.7	3.5	3.7	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	0.06	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.0	3.5	3.1	1
Uranium	Strong Acid Extractable	mg/kg	0.7	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	5.2	14.5	12.3	0.1
Zinc	Strong Acid Extractable	mg/kg	52	5	11	1
Mono-Aromatic Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil						
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil						
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	74	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	<100	100
% C50+	%		11.1	<5	26.8	

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350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-56	1022226-57	1022226-58	
		Sample Date	Aug 17, 2014	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-BD2	P314-BD3	P314-BD4	
		Matrix	Soil	Soil	Soil	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup						
Silica Gel Cleanup			Done	Done	Done	
Soil % Moisture						
Moisture	Soil % Moisture	% by weight	57.60	14.50	15.60	
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	%	120	130	120	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-59	1022226-60	
		Sample Date	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	
		Sample Location			
		Sample Description	P314-BD5	P314-BD6	
		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
Antimony	Strong Acid Extractable	mg/kg	<0.2	<0.2	0.2
Arsenic	Strong Acid Extractable	mg/kg	0.9	0.9	0.2
Barium	Strong Acid Extractable	mg/kg	19	20	1
Beryllium	Strong Acid Extractable	mg/kg	<0.1	<0.1	0.1
Cadmium	Strong Acid Extractable	mg/kg	0.02	<0.01	0.01
Chromium	Strong Acid Extractable	mg/kg	3.3	4.1	0.5
Cobalt	Strong Acid Extractable	mg/kg	1.2	1.9	0.1
Copper	Strong Acid Extractable	mg/kg	2.7	4.4	1
Lead	Strong Acid Extractable	mg/kg	<5.0	<4.9	5
Molybdenum	Strong Acid Extractable	mg/kg	<1.0	<1.0	1
Nickel	Strong Acid Extractable	mg/kg	1.6	3.2	0.5
Selenium	Strong Acid Extractable	mg/kg	<0.3	<0.3	0.3
Silver	Strong Acid Extractable	mg/kg	<0.1	<0.1	0.1
Thallium	Strong Acid Extractable	mg/kg	<0.05	<0.05	0.05
Tin	Strong Acid Extractable	mg/kg	3.2	3.2	1
Uranium	Strong Acid Extractable	mg/kg	<0.5	<0.5	0.5
Vanadium	Strong Acid Extractable	mg/kg	8.0	8.8	0.1
Zinc	Strong Acid Extractable	mg/kg	6	4	1
Mono-Aromatic Hydrocarbons - Soil					
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	
Benzene	Dry Weight	mg/kg	<0.005	<0.005	0.005
Toluene	Dry Weight	mg/kg	<0.02	<0.02	0.02
Ethylbenzene	Dry Weight	mg/kg	<0.010	<0.010	0.010
Total Xylenes (m,p,o)	Dry Weight	mg/kg	<0.03	<0.03	0.03
Volatile Petroleum Hydrocarbons - Soil					
Extraction Date	Volatiles		26-Aug-14	26-Aug-14	
F1 C6-C10	Dry Weight	mg/kg	<10	<10	10
F1 -BTEX	Dry Weight	mg/kg	<10	<10	10
Extractable Petroleum Hydrocarbons - Soil					
Extraction Date	Total Extractables		26-Aug-14	26-Aug-14	
F2c C10-C16	Dry Weight	mg/kg	<50	<50	50
F3c C16-C34	Dry Weight	mg/kg	<50	<50	50
F4c C34-C50	Dry Weight	mg/kg	<100	<100	100
F4HTGCc C34-C50+	Dry Weight	mg/kg	<100	<100	100
% C50+	%		<5	<5	

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-59	1022226-60	
		Sample Date	Aug 17, 2014	Aug 17, 2014	
		Sample Time	NA	NA	
		Sample Location			
		Sample Description	P314-BD5	P314-BD6	
		Matrix	Soil	Soil	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Silica Gel Cleanup					
Silica Gel Cleanup		Done	Done		
Soil % Moisture					
Moisture	Soil % Moisture	% by weight	11.60	3.45	
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	%	120	110	50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-61	1022226-62	1022226-63	
		Sample Date	Aug 17, 2014	Aug 19, 2014	Aug 19, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-11W	P314-12W	P314-13W	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total						
Aluminum	Total	mg/L	9.71	39.6	26.2	0.02
Calcium	Total	mg/L	339	463	86.9	0.2
Iron	Total	mg/L	23.8	24.0	3.73	0.05
Magnesium	Total	mg/L	203	158	47.0	0.2
Manganese	Total	mg/L	0.449	0.226	0.086	0.005
Potassium	Total	mg/L	12.9	15.5	5.3	0.4
Silicon	Total	mg/L	16.2	12.2	6.57	0.05
Sodium	Total	mg/L	42.1	40.4	71.5	0.4
Sulfur	Total	mg/L	121	311	57.6	0.3
Mercury	Total	mg/L	0.000080	0.000027	0.000021	0.000005
Antimony	Total	mg/L	0.0002	0.0006	0.0008	0.0002
Arsenic	Total	mg/L	0.0118	0.0135	0.0045	0.0002
Barium	Total	mg/L	0.221	0.175	0.046	0.001
Beryllium	Total	mg/L	0.0004	0.0008	0.0002	0.0001
Bismuth	Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	0.131	0.281	0.055	0.002
Cadmium	Total	mg/L	0.00014	0.00002	<0.00001	0.00001
Chromium	Total	mg/L	0.408	0.203	0.176	0.0005
Cobalt	Total	mg/L	0.0108	0.0158	0.0016	0.0001
Copper	Total	mg/L	0.241	0.138	0.017	0.001
Lead	Total	mg/L	0.996	0.125	0.0022	0.0001
Lithium	Total	mg/L	0.021	0.032	0.084	0.001
Molybdenum	Total	mg/L	0.016	0.005	0.012	0.001
Nickel	Total	mg/L	0.0655	0.115	0.0595	0.0005
Selenium	Total	mg/L	0.0020	0.0018	0.0006	0.0002
Silver	Total	mg/L	0.00012	0.00005	0.00001	0.00001
Strontium	Total	mg/L	0.520	0.628	0.340	0.001
Thallium	Total	mg/L	0.00034	0.00019	<0.00005	0.00005
Tin	Total	mg/L	0.001	0.001	<0.001	0.001
Titanium	Total	mg/L	0.489	2.28	0.386	0.0005
Uranium	Total	mg/L	0.0057	0.0367	0.0102	0.0005
Vanadium	Total	mg/L	0.0392	0.0869	0.0170	0.0001
Zinc	Total	mg/L	0.289	0.271	0.371	0.001
Zirconium	Total	mg/L	0.003	0.037	0.007	0.001
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

	Reference Number	1022226-61	1022226-62	1022226-63	
	Sample Date	Aug 17, 2014	Aug 19, 2014	Aug 19, 2014	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	P314-11W	P314-12W	P314-13W	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Mono-Aromatic Hydrocarbons - Water - Continued					
Toluene	mg/L	<0.001	<0.001	<0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	<0.001	<0.001	<0.001	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.2	<0.2	<0.2	0.2
F1 C6-C10	mg/L	<0.2	<0.2	<0.2	0.2
F2 C10-C16	mg/L	0.2	<0.2	0.2	0.2
Extractable Petroleum Hydrocarbons - Water					
F3 C16-C34	mg/L	0.2	<0.1	<0.1	0.1
F3+ C34+	mg/L	0.7	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1221	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1232	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1242	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1248	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1254	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1260	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1262	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1268	ug/L	<0.1	<0.1	<0.1	0.1
Total PCBs	ug/L	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl	Surrogate	%	84	65	79
					50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-64	1022226-65	1022226-66	
		Sample Date	Aug 19, 2014	Aug 19, 2014	Aug 19, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-14W	P314-15W	P314-16W	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total						
Aluminum	Total	mg/L	64.1	1.4	8.38	0.02
Calcium	Total	mg/L	489	444	217	0.2
Iron	Total	mg/L	24.9	8.34	3.04	0.05
Magnesium	Total	mg/L	113	139	83.3	0.2
Manganese	Total	mg/L	0.089	0.062	0.018	0.005
Potassium	Total	mg/L	13.4	23.2	5.0	0.4
Silicon	Total	mg/L	8.94	3.65	2.49	0.05
Sodium	Total	mg/L	36.8	49.7	17.2	0.4
Sulfur	Total	mg/L	293	410	128	0.3
Mercury	Total	mg/L	0.000015	0.000031	<0.000005	0.000005
Antimony	Total	mg/L	0.0022	<0.0004	<0.0002	0.0002
Arsenic	Total	mg/L	0.0186	0.0069	0.0019	0.0002
Barium	Total	mg/L	0.109	0.027	0.067	0.001
Beryllium	Total	mg/L	0.0009	<0.0002	0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	<0.001	<0.0005	0.0005
Boron	Total	mg/L	0.358	0.540	0.092	0.002
Cadmium	Total	mg/L	0.00002	<0.00001	<0.00001	0.00001
Chromium	Total	mg/L	0.270	0.0377	0.0363	0.0005
Cobalt	Total	mg/L	0.0094	0.002	0.0008	0.0001
Copper	Total	mg/L	0.032	0.009	0.011	0.001
Lead	Total	mg/L	0.0147	0.012	0.0021	0.0001
Lithium	Total	mg/L	0.028	0.01	0.011	0.001
Molybdenum	Total	mg/L	0.008	0.002	0.003	0.001
Nickel	Total	mg/L	0.0989	0.0224	0.0215	0.0005
Selenium	Total	mg/L	0.0013	0.0009	0.0008	0.0002
Silver	Total	mg/L	0.00003	<0.00002	<0.00001	0.00001
Strontium	Total	mg/L	0.875	0.875	0.343	0.001
Thallium	Total	mg/L	0.00008	<0.0001	0.00020	0.00005
Tin	Total	mg/L	0.002	<0.002	<0.001	0.001
Titanium	Total	mg/L	3.26	0.0782	0.355	0.0005
Uranium	Total	mg/L	0.0478	0.0371	0.0109	0.0005
Vanadium	Total	mg/L	0.099	0.0046	0.0086	0.0001
Zinc	Total	mg/L	0.025	0.026	0.005	0.001
Zirconium	Total	mg/L	0.091	0.01	0.010	0.001
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	0.005	<0.001	<0.001	0.001

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

	Reference Number	1022226-64	1022226-65	1022226-66	
	Sample Date	Aug 19, 2014	Aug 19, 2014	Aug 19, 2014	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	P314-14W	P314-15W	P314-16W	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Mono-Aromatic Hydrocarbons - Water - Continued					
Toluene	mg/L	<0.001	<0.001	<0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	<0.001	<0.001	<0.001	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.2	<0.2	<0.2	0.2
F1 C6-C10	mg/L	<0.2	<0.2	<0.2	0.2
F2 C10-C16	mg/L	<0.2	0.2	0.2	0.2
Extractable Petroleum Hydrocarbons - Water					
F3 C16-C34	mg/L	<0.1	<0.1	<0.1	0.1
F3+ C34+	mg/L	<0.1	0.1	<0.1	0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1221	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1232	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1242	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1248	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1254	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1260	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1262	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1268	ug/L	<0.1	<0.1	<0.1	0.1
Total PCBs	ug/L	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl	Surrogate	%	92	86	90
					50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-67	1022226-68	1022226-69	
		Sample Date	Aug 19, 2014	Aug 19, 2014	Aug 19, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-BDW1	P314-5W	P314-6W	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total						
Aluminum	Total	mg/L	102	0.04	97.0	0.02
Calcium	Total	mg/L	620	141	285	0.2
Iron	Total	mg/L	41.6	17.2	18.0	0.05
Magnesium	Total	mg/L	177	74.7	134	0.2
Manganese	Total	mg/L	0.158	0.364	0.121	0.005
Potassium	Total	mg/L	17.8	7.2	6.6	0.4
Silicon	Total	mg/L	10.7	3.23	8.36	0.05
Sodium	Total	mg/L	53.7	57.6	50.6	0.4
Sulfur	Total	mg/L	316	136	134	0.3
Mercury	Total	mg/L	0.000024	0.000011	0.000020	0.000005
Antimony	Total	mg/L	0.0021	<0.0002	0.0030	0.0002
Arsenic	Total	mg/L	0.0293	0.0010	0.0187	0.0002
Barium	Total	mg/L	0.070	0.035	0.046	0.001
Beryllium	Total	mg/L	0.0015	<0.0001	0.0007	0.0001
Bismuth	Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	0.368	0.163	0.124	0.002
Cadmium	Total	mg/L	0.00079	<0.00001	<0.00001	0.00001
Chromium	Total	mg/L	0.409	0.0069	0.625	0.0005
Cobalt	Total	mg/L	0.0279	0.0048	0.0093	0.0001
Copper	Total	mg/L	0.041	0.003	0.041	0.001
Lead	Total	mg/L	0.0141	0.0002	0.0174	0.0001
Lithium	Total	mg/L	0.048	0.007	0.044	0.001
Molybdenum	Total	mg/L	0.007	0.007	0.013	0.001
Nickel	Total	mg/L	0.315	0.0235	0.220	0.0005
Selenium	Total	mg/L	0.0026	0.0003	0.0010	0.0002
Silver	Total	mg/L	0.00004	<0.00001	0.00003	0.00001
Strontium	Total	mg/L	0.946	0.335	0.373	0.001
Thallium	Total	mg/L	0.00010	<0.00005	0.00005	0.00005
Tin	Total	mg/L	0.005	<0.001	0.004	0.001
Titanium	Total	mg/L	5.03	0.0125	2.20	0.0005
Uranium	Total	mg/L	0.105	0.0078	0.0297	0.0005
Vanadium	Total	mg/L	0.16	0.0006	0.0809	0.0001
Zinc	Total	mg/L	0.120	0.008	0.507	0.001
Zirconium	Total	mg/L	0.132	0.014	0.057	0.001
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

	Reference Number	1022226-67	1022226-68	1022226-69	
	Sample Date	Aug 19, 2014	Aug 19, 2014	Aug 19, 2014	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	P314-BDW1	P314-5W	P314-6W	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Mono-Aromatic Hydrocarbons - Water - Continued					
Toluene	mg/L	<0.001	<0.001	<0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	<0.001	<0.001	<0.001	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.2	<0.2	<0.2	0.2
F1 C6-C10	mg/L	<0.2	<0.2	<0.2	0.2
F2 C10-C16	mg/L	0.2	0.2	<0.2	0.2
Extractable Petroleum Hydrocarbons - Water					
F3 C16-C34	mg/L	<0.1	<0.1	<0.1	0.1
F3+ C34+	mg/L	0.2	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1221	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1232	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1242	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1248	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1254	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1260	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1262	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1268	ug/L	<0.1	<0.1	<0.1	0.1
Total PCBs	ug/L	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl	Surrogate	%	97	103	114
					50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

		Reference Number	1022226-70	1022226-71	1022226-72	
		Sample Date	Aug 19, 2014	Aug 19, 2014	Aug 19, 2014	
		Sample Time	NA	NA	NA	
		Sample Location				
		Sample Description	P314-7W	P314-8W	P314-FB	
		Matrix	Water	Water	Water	
Analyte		Units	Results	Results	Results	Nominal Detection Limit
Metals Total						
Aluminum	Total	mg/L	80.5	57.6	<0.02	0.02
Calcium	Total	mg/L	122	400	<0.2	0.2
Iron	Total	mg/L	2.21	23.7	<0.05	0.05
Magnesium	Total	mg/L	6.22	160	<0.20	0.2
Manganese	Total	mg/L	0.012	0.101	<0.005	0.005
Potassium	Total	mg/L	4.2	18.1	<0.4	0.4
Silicon	Total	mg/L	1.05	6.99	<0.05	0.05
Sodium	Total	mg/L	61.4	54.8	<0.4	0.4
Sulfur	Total	mg/L	21.5	316	<0.3	0.3
Mercury	Total	mg/L	<0.000005	0.000026	<0.000005	0.000005
Antimony	Total	mg/L	0.0005	0.0013	<0.0002	0.0002
Arsenic	Total	mg/L	0.0044	0.0172	<0.0002	0.0002
Barium	Total	mg/L	0.004	0.043	<0.001	0.001
Beryllium	Total	mg/L	<0.0001	0.0009	<0.0001	0.0001
Bismuth	Total	mg/L	<0.0005	<0.0005	<0.0005	0.0005
Boron	Total	mg/L	0.016	0.382	<0.002	0.002
Cadmium	Total	mg/L	0.00009	0.00083	<0.00001	0.00001
Chromium	Total	mg/L	0.0506	0.231	<0.0005	0.0005
Cobalt	Total	mg/L	0.0005	0.0167	<0.0001	0.0001
Copper	Total	mg/L	0.007	0.026	<0.001	0.001
Lead	Total	mg/L	0.0016	0.0088	<0.0001	0.0001
Lithium	Total	mg/L	0.015	0.033	<0.001	0.001
Molybdenum	Total	mg/L	0.050	0.005	<0.001	0.001
Nickel	Total	mg/L	0.0125	0.192	<0.0005	0.0005
Selenium	Total	mg/L	0.0005	0.0019	<0.0002	0.0002
Silver	Total	mg/L	<0.00001	0.00005	<0.00001	0.00001
Strontium	Total	mg/L	0.320	0.759	<0.001	0.001
Thallium	Total	mg/L	<0.00005	0.00008	<0.00005	0.00005
Tin	Total	mg/L	<0.001	0.003	<0.001	0.001
Titanium	Total	mg/L	0.277	2.72	0.0027	0.0005
Uranium	Total	mg/L	0.0005	0.0735	0.0006	0.0005
Vanadium	Total	mg/L	0.0148	0.090	<0.0001	0.0001
Zinc	Total	mg/L	0.014	0.076	<0.001	0.001
Zirconium	Total	mg/L	0.008	0.065	<0.001	0.001
Mono-Aromatic Hydrocarbons - Water						
Benzene		mg/L	<0.001	<0.001	<0.001	0.001

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

	Reference Number	1022226-70	1022226-71	1022226-72	
	Sample Date	Aug 19, 2014	Aug 19, 2014	Aug 19, 2014	
	Sample Time	NA	NA	NA	
	Sample Location				
	Sample Description	P314-7W	P314-8W	P314-FB	
	Matrix	Water	Water	Water	
Analyte	Units	Results	Results	Results	Nominal Detection Limit
Mono-Aromatic Hydrocarbons - Water - Continued					
Toluene	mg/L	<0.001	<0.001	<0.001	0.001
Ethylbenzene	mg/L	<0.001	<0.001	<0.001	0.001
Total Xylenes (m,p,o)	mg/L	<0.001	<0.001	<0.001	0.001
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.2	<0.2	<0.2	0.2
F1 C6-C10	mg/L	<0.2	<0.2	<0.2	0.2
F2 C10-C16	mg/L	0.2	0.2	0.2	0.2
Extractable Petroleum Hydrocarbons - Water					
F3 C16-C34	mg/L	<0.1	<0.1	<0.1	0.1
F3+ C34+	mg/L	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1221	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1232	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1242	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1248	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1254	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1260	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1262	ug/L	<0.1	<0.1	<0.1	0.1
Aroclor 1268	ug/L	<0.1	<0.1	<0.1	0.1
Total PCBs	ug/L	<0.1	<0.1	<0.1	0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl	Surrogate	%	103	120	106
					50-150

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

Reference Number 1022226-73
Sample Date Aug 19, 2014
Sample Time NA
Sample Location
Sample Description P314-TRIP BLANK
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Metals Total					
Aluminum	Total	mg/L	<0.02		0.02
Calcium	Total	mg/L	<0.2		0.2
Iron	Total	mg/L	<0.05		0.05
Magnesium	Total	mg/L	<0.20		0.2
Manganese	Total	mg/L	<0.005		0.005
Potassium	Total	mg/L	<0.4		0.4
Silicon	Total	mg/L	<0.05		0.05
Sodium	Total	mg/L	<0.4		0.4
Sulfur	Total	mg/L	<0.3		0.3
Mercury	Total	mg/L	0.000006		0.000005
Antimony	Total	mg/L	<0.0002		0.0002
Arsenic	Total	mg/L	<0.0002		0.0002
Barium	Total	mg/L	<0.001		0.001
Beryllium	Total	mg/L	<0.0001		0.0001
Bismuth	Total	mg/L	<0.0005		0.0005
Boron	Total	mg/L	<0.002		0.002
Cadmium	Total	mg/L	<0.00001		0.00001
Chromium	Total	mg/L	<0.0005		0.0005
Cobalt	Total	mg/L	<0.0001		0.0001
Copper	Total	mg/L	<0.001		0.001
Lead	Total	mg/L	<0.0001		0.0001
Lithium	Total	mg/L	<0.001		0.001
Molybdenum	Total	mg/L	<0.001		0.001
Nickel	Total	mg/L	<0.0005		0.0005
Selenium	Total	mg/L	<0.0002		0.0002
Silver	Total	mg/L	<0.00001		0.00001
Strontium	Total	mg/L	<0.001		0.001
Thallium	Total	mg/L	<0.00005		0.00005
Tin	Total	mg/L	<0.001		0.001
Titanium	Total	mg/L	<0.0005		0.0005
Uranium	Total	mg/L	<0.0005		0.0005
Vanadium	Total	mg/L	<0.0001		0.0001
Zinc	Total	mg/L	<0.001		0.001
Zirconium	Total	mg/L	<0.001		0.001
Mono-Aromatic Hydrocarbons - Water					
Benzene		mg/L	<0.001		0.001

Analytical Report

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

Reference Number 1022226-73
Sample Date Aug 19, 2014
Sample Time NA
Sample Location
Sample Description P314-TRIP BLANK
Matrix Water

Analyte	Units	Results	Results	Results	Nominal Detection Limit
Mono-Aromatic Hydrocarbons - Water - Continued					
Toluene	mg/L	<0.001			0.001
Ethylbenzene	mg/L	<0.001			0.001
Total Xylenes (m,p,o)	mg/L	<0.001			0.001
Volatile Petroleum Hydrocarbons - Water					
F1 -BTEX	mg/L	<0.2			0.2
F1 C6-C10	mg/L	<0.2			0.2
F2 C10-C16	mg/L	0.2			0.2
Extractable Petroleum Hydrocarbons - Water					
F3 C16-C34	mg/L	<0.1			0.1
F3+ C34+	mg/L	<0.1			0.1
Polychlorinated Biphenyls - Water					
Aroclor 1016	ug/L	<0.1			0.1
Aroclor 1221	ug/L	<0.1			0.1
Aroclor 1232	ug/L	<0.1			0.1
Aroclor 1242	ug/L	<0.1			0.1
Aroclor 1248	ug/L	<0.1			0.1
Aroclor 1254	ug/L	<0.1			0.1
Aroclor 1260	ug/L	<0.1			0.1
Aroclor 1262	ug/L	<0.1			0.1
Aroclor 1268	ug/L	<0.1			0.1
Total PCBs	ug/L	<0.1			0.1
Polychlorinated Biphenyls - Water - Surrogate					
Decachlorobiphenyl	Surrogate	%	114		50-150

Approved by: 
Randy Neumann, BSc
Vice President

Methodology and Notes

Bill To: Biogenie S.R.D.C. Inc.	Project:	Lot ID: 1022226
Report To: Biogenie S.R.D.C. Inc.	ID: PIN-3 2014	Control Number: C0042501
350, rue Franquet	Name: 2014 LFM	Date Received: Aug 25, 2014
Sainte-Foy, QC, Canada	Location: Lady Franklin	Date Reported: Sep 2, 2014
G1P 4P3	LSD:	Report Number: 1942877
Attn: Eric Thomassin-Lacroix	P.O.:	
Sampled By: A. Passalis	Acct code: 14-071-309663	
Company: SILA		

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	25-Aug-14	Exova Calgary
BTEX-CCME - Soil	US EPA	* Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis/Gas Chromatography Mass Spectrometry, 5021/8260	25-Aug-14	Exova Calgary
BTEX-CCME - Water	US EPA	* Volatile Organic Compounds in Various Sample Matrices Using Equilibrium Headspace Analysis/Gas Chromatography Mass Spectrometry, 5021/8260	26-Aug-14	Exova Calgary
Mercury (Hot Block) in Soil	US EPA	* Determination of Hg in Sediment by Cold Vapor Atomic Absorption Spec, 245.5	26-Aug-14	Exova Edmonton
Mercury (Total) in water	EPA	* Mercury in Water by Cold Vapor Atomic Fluorescence Spectrometry, 245.7	27-Aug-14	Exova Edmonton
Metals ICP-MS (Hot Block) in soil	SW-846	* Acid Digestion of Sediments, Sludges, and Soils, EPA 3050B	26-Aug-14	Exova Edmonton
Metals ICP-MS (Total) in water	APHA/USEPA	* Metals By Inductively Coupled Plasma/Mass Spectrometry, APHA 3125 B / USEPA 200.2, 200.8	26-Aug-14	Exova Edmonton
Metals Trace (Total) in water	APHA	* Inductively Coupled Plasma (ICP) Method, 3120 B	26-Aug-14	Exova Edmonton
PCB - Soil	US EPA	* Polychlorinated Biphenyls (PCBs) by Gas Chromatography, 8082A	25-Aug-14	Exova Calgary
PCB - Water	US EPA	* Polychlorinated Biphenyls (PCBs) by Gas Chromatography, 8082A	26-Aug-14	Exova Calgary
PCB - Water	US EPA	* Polychlorinated Biphenyls (PCBs) by Gas Chromatography, 8082A	27-Aug-14	Exova Calgary
TEH-CCME - Water	EPA/CCME	* Separatory Funnel Liquid-liquid Extraction/CCME, EPA 3510/CCME	26-Aug-14	Exova Calgary

Methodology and Notes

Bill To:	Biogenie S.R.D.C. Inc.	Project:		Lot ID:	1022226
Report To:	Biogenie S.R.D.C. Inc.	ID:	PIN-3 2014	Control Number:	C0042501
	350, rue Franquet	Name:	2014 LFM	Date Received:	Aug 25, 2014
	Sainte-Foy, QC, Canada	Location:	Lady Franklin	Date Reported:	Sep 2, 2014
	G1P 4P3	LSD:		Report Number:	1942877
Attn:	Eric Thomassin-Lacroix	P.O.:			
Sampled By:	A. Passalis	Acct code:	14-071-309663		
Company:	SILA				

Method Name	Reference	Method	Date Analysis Started	Location
TEH-CCME-Soil (Shake)	CCME	* Reference Method for Canada-Wide Standard for PHC in Soil, CWS PHCS TIER 1 <i>* Reference Method Modified</i>	25-Aug-14	Exova Calgary

References

APHA	Standard Methods for the Examination of Water and Wastewater
CCME	Canadian Council of Ministers of the Environment
EPA/CCME	Environmental Protection Agency Test Methods - US/CCME
SW-846	Test Methods for Evaluating Solid Waste
US EPA	US Environmental Protection Agency Test Methods

Comments:

- Analysis was performed on samples 102226 (1-61) that exceeded the recommended holding time for BTEX/F1 analysis.

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:	Biogenie S.R.D.C. Inc.	Project:		Lot ID:	1022226
Report To:	Biogenie S.R.D.C. Inc.	ID:	PIN-3 2014	Control Number:	C0042501
	350, rue Franquet	Name:	2014 LFM	Date Received:	Aug 25, 2014
	Sainte-Foy, QC, Canada	Location:	Lady Franklin	Date Reported:	Sep 2, 2014
	G1P 4P3	LSD:		Report Number:	1942877
Attn:	Eric Thomassin-Lacroix	P.O.:			
Sampled By:	A. Passalis	Acct code:	14-071-309663		
Company:	SILA				

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
Vice President

Data have been validated by Analytical Quality Control and Exova's Integrated Data Validation System (IDVS).

Generation and distribution of the report, and approval by the digitized signature above, are performed through a secure and controlled automatic process.

Your Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Your C.O.C. #: A135190

Attention: JEAN-PIERRE PELLETIER

SILA REMEDIATION
4495 BL. WILFRID- HAMEL, BUR 1
QUEBEC, PQ
CANADA G1P 2T7

Report Date: 2014/09/22

Report #: R1646815

Version: 3R

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B478444

Received: 2014/09/04, 10:45

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	6	2014/09/05	2014/09/10	AB SOP-00039	CCME CWS/EPA 8260C m
CCME Hydrocarbons (F2-F4 in soil)	5	2014/09/05	2014/09/08	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS
CCME Hydrocarbons (F2-F4 in soil)	1	2014/09/08	2014/09/08	AB SOP-00036 / AB SOP-00040	CCME PHC-CWS
Elements by ICPMS - Soils	3	2014/09/12	2014/09/12	AB SOP-00001 / AB SOP-00043	EPA 200.8 R5.4 m
Elements by ICPMS - Soils	1	2014/09/12	2014/09/13	AB SOP-00001 / AB SOP-00043	EPA 200.8 R5.4 m
Elements by ICPMS - Soils	2	2014/09/13	2014/09/13	AB SOP-00001 / AB SOP-00043	EPA 200.8 R5.4 m
Moisture	6	N/A	2014/09/06	AB SOP-00002	CCME PHC-CWS
Polychlorinated Biphenyls (1)	6	2014/09/09	2014/09/10	CAL SOP-00149	EPA 8082A R1 m

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	1	N/A	2014/09/19	AB SOP-00039	CCME CWS/EPA 8260C m
CCME Hydrocarbons (F2-F4 in water)	1	2014/09/18	2014/09/18	AB SOP-00037 / AB SOP-00040	CCME PHC-CWS m
Mercury - Low Level (Total) (1)	1	2014/09/10	2014/09/10	CAL SOP-00007	EPA 1631 RE 20460 m
Elements by ICPMS - Total	1	2014/09/12	2014/09/13	AB SOP-00014 / AB SOP-00043	EPA 200.8 R5.4 m
Polychlorinated Biphenyls (1)	1	2014/09/18	2014/09/19	CAL SOP-00149	EPA 8082A R1 m

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

(1) This test was performed by Maxxam Calgary Environmental

Your Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Your C.O.C. #: A135190

Attention:JEAN-PIERRE PELLETIER

SILA REMEDIATION
4495 BL. WILFRID- HAMEL, BUR 1
QUEBEC, PQ
CANADA G1P 2T7

Report Date: 2014/09/22
Report #: R1646815
Version: 3R

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B478444

Received: 2014/09/04, 10:45

Encryption Key

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

Tanya Eugene, M.Sc., Project Manager

Email: TEugine@maxxam.ca

Phone# (780)577-7144

=====

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

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		KN3217	KN3218	KN3219	KN3220	KN3221	KN3222		
Sampling Date		2014/08/17	2014/08/18	2014/08/18	2014/08/18	2014/08/18	2014/08/18		
COC Number		A135190	A135190	A135190	A135190	A135190	A135190		
	Units	P314-4A	P314-6B	P314-14A	P314-6WB	P314-11WB	P314-13WA	RDL	QC Batch
Physical Properties									
Moisture	%	61	20	11	3.0	2.7	16	0.30	7627702
RDL = Reportable Detection Limit									

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KN3217		KN3218	KN3219	KN3220	KN3221	KN3222		
Sampling Date		2014/08/17		2014/08/18	2014/08/18	2014/08/18	2014/08/18	2014/08/18		
COC Number		A135190		A135190	A135190	A135190	A135190	A135190		
	Units	P314-4A	RDL	P314-6B	P314-14A	P314-6WB	P314-11WB	P314-13WA	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<26 (1)	26	<10	<10	<10	<10	<10	10	7627755
F3 (C16-C34 Hydrocarbons)	mg/kg	<130 (1)	130	<50	<50	<50	<50	<50	50	7627755
Reached Baseline at C50	mg/kg	Yes		Yes	Yes	Yes	Yes	Yes		7627755
Surrogate Recovery (%)										
O-TERPHENYL (sur.)	%	91		91	91	105	86	85		7627755
RDL = Reportable Detection Limit										
(1) Detection limits raised due to high moisture content.										

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL)

Maxxam ID		KN3217		KN3218	KN3219	KN3220	KN3221	KN3222		
Sampling Date		2014/08/17		2014/08/18	2014/08/18	2014/08/18	2014/08/18	2014/08/18		
COC Number		A135190		A135190	A135190	A135190	A135190	A135190		
	Units	P314-4A	RDL	P314-6B	P314-14A	P314-6WB	P314-11WB	P314-13WA	RDL	QC Batch
Polychlorinated Biphenyls										
Aroclor 1016	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1221	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1232	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1242	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1248	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1254	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1260	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1262	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Aroclor 1268	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Total Aroclors	mg/kg	<0.030	0.030	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	7630678
Surrogate Recovery (%)										
NONACHLOROBIPHENYL (sur.)	%	62		71	72	75	62	59		7630678
RDL = Reportable Detection Limit										

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		KN3217			KN3218		KN3219	KN3220		
Sampling Date		2014/08/17			2014/08/18		2014/08/18	2014/08/18		
COC Number		A135190			A135190		A135190	A135190		
	Units	P314-4A	RDL	QC Batch	P314-6B	QC Batch	P314-14A	P314-6WB	RDL	QC Batch
Elements										
Total Arsenic (As)	mg/kg	<2.0	2.0	7636183	1.0	7635451	1.2	5.9	1.0	7636183
Total Cadmium (Cd)	mg/kg	0.53	0.20	7636183	<0.10	7635451	<0.10	0.26	0.10	7636183
Total Chromium (Cr)	mg/kg	3.6	2.0	7636183	57	7635451	18	21	1.0	7636183
Total Cobalt (Co)	mg/kg	<2.0	2.0	7636183	2.2	7635451	1.1	6.3	1.0	7636183
Total Copper (Cu)	mg/kg	<10	10	7636183	7.4	7635451	8.7	15	5.0	7636183
Total Lead (Pb)	mg/kg	3.7	2.0	7636183	1.1	7635451	2.2	37	1.0	7636183
Total Mercury (Hg)	mg/kg	0.12	0.10	7636183	<0.050	7635451	<0.050	0.077	0.050	7636183
Total Nickel (Ni)	mg/kg	3.9	2.0	7636183	27	7635451	8.8	27	1.0	7636183
Total Zinc (Zn)	mg/kg	40	20	7636183	<10	7635451	<10	130	10	7636183
RDL = Reportable Detection Limit										

Maxxam ID		KN3221	KN3222		
Sampling Date		2014/08/18	2014/08/18		
COC Number		A135190	A135190		
	Units	P314-11WB	P314-13WA	RDL	QC Batch
Elements					
Total Arsenic (As)	mg/kg	1.1	1.6	1.0	7636477
Total Cadmium (Cd)	mg/kg	<0.10	0.10	0.10	7636477
Total Chromium (Cr)	mg/kg	22	35	1.0	7636477
Total Cobalt (Co)	mg/kg	2.0	1.9	1.0	7636477
Total Copper (Cu)	mg/kg	<5.0	8.9	5.0	7636477
Total Lead (Pb)	mg/kg	1.5	7.4	1.0	7636477
Total Mercury (Hg)	mg/kg	<0.050	<0.050	0.050	7636477
Total Nickel (Ni)	mg/kg	11	17	1.0	7636477
Total Zinc (Zn)	mg/kg	<10	<10	10	7636477
RDL = Reportable Detection Limit					

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		KN3217		KN3218	KN3219	KN3220	KN3221	KN3222		
Sampling Date		2014/08/17		2014/08/18	2014/08/18	2014/08/18	2014/08/18	2014/08/18		
COC Number		A135190		A135190	A135190	A135190	A135190	A135190		
	Units	P314-4A	RDL	P314-6B	P314-14A	P314-6WB	P314-11WB	P314-13WA	RDL	QC Batch
Volatiles										
F1 (C6-C10) - BTEX	mg/kg	<31 (1)	31	<12	<12	<12	<12	<12	12	7627731
(C6-C10)	mg/kg	<31 (1)	31	<12	<12	<12	<12	<12	12	7627731
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	137		115	110	104	106	111		7627731
4-Bromofluorobenzene (sur.)	%	99		100	98	100	100	101		7627731
D10-ETHYLBENZENE (sur.)	%	106		107	109	103	103	97		7627731
D4-1,2-Dichloroethane (sur.)	%	98		97	99	100	99	101		7627731
RDL = Reportable Detection Limit										
(1) Detection limits raised due to high moisture content.										

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		KN3223		
Sampling Date		2014/08/19		
COC Number		A135190		
	Units	P314-8W	RDL	QC Batch
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	0.10	7638193
F3 (C16-C34 Hydrocarbons)	mg/L	<0.20	0.20	7638193
Reached Baseline at C50	mg/L	Yes		7638193
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	109		7638193
RDL = Reportable Detection Limit				

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

POLYCHLORINATED BIPHENYLS BY GC-ECD (WATER)

Maxxam ID		KN3223		
Sampling Date		2014/08/19		
COC Number		A135190		
	Units	P314-8W	RDL	QC Batch
Polychlorinated Biphenyls				
Aroclor 1016	mg/L	<0.000050	0.000050	7643036
Aroclor 1221	mg/L	<0.000050	0.000050	7643036
Aroclor 1232	mg/L	<0.000050	0.000050	7643036
Aroclor 1242	mg/L	<0.000050	0.000050	7643036
Aroclor 1248	mg/L	<0.000050	0.000050	7643036
Aroclor 1254	mg/L	<0.000050	0.000050	7643036
Aroclor 1260	mg/L	<0.000050	0.000050	7643036
Aroclor 1262	mg/L	<0.000050	0.000050	7643036
Aroclor 1268	mg/L	<0.000050	0.000050	7643036
Total Aroclors	mg/L	<0.000050	0.000050	7643036
Surrogate Recovery (%)				
NONACHLOROBIPHENYL (sur.)	%	128		7643036
RDL = Reportable Detection Limit				

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		KN3223		
Sampling Date		2014/08/19		
COC Number		A135190		
	Units	P314-8W	RDL	QC Batch
Elements				
Total Arsenic (As)	mg/L	0.010	0.00020	7636306
Total Cadmium (Cd)	mg/L	0.00084	0.000020	7636306
Total Chromium (Cr)	mg/L	0.14	0.0010	7636306
Total Cobalt (Co)	mg/L	0.010	0.00030	7636306
Total Copper (Cu)	mg/L	0.017	0.00020	7636306
Total Lead (Pb)	mg/L	0.0072	0.00020	7636306
Total Nickel (Ni)	mg/L	0.12	0.00050	7636306
Total Zinc (Zn)	mg/L	0.054	0.0030	7636306
Low Level Elements				
Total Mercury (Hg)	ug/L	0.17 (1)	0.10	7632590
RDL = Reportable Detection Limit				
(1) Due to the sample matrix, sample required dilution. Detection limit was adjusted accordingly				

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		KN3223		
Sampling Date		2014/08/19		
COC Number		A135190		
	Units	P314-8W	RDL	QC Batch
Volatiles				
F1 (C6-C10) - BTEX	ug/L	<100	100	7637199
(C6-C10)	ug/L	<100	100	7637199
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	98		7637199
4-Bromofluorobenzene (sur.)	%	101		7637199
D4-1,2-Dichloroethane (sur.)	%	102		7637199
RDL = Reportable Detection Limit				

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

GENERAL COMMENTS

Sample KN3217-01 : Sample extracted for F24 past method-specified hold time by client request.

Detection limits raised due to sample matrix. Parameters affected are Cr, Co, Cu, Pb, Ni, As, Zn, Cd, Hg.

Sample KN3218-01 : Sample extracted for F24 past method-specified hold time by client request.

Sample KN3219-01 : Sample extracted for F24 past method-specified hold time by client request.

Sample KN3220-01 : Sample extracted for F24 past method-specified hold time by client request.

Sample KN3221-01 : Sample extracted for F24 past method-specified hold time by client request.

Sample KN3222-01 : Sample extracted for F24 past method-specified hold time by client request.

Sample KN3223-01 : Sample extracted for F24 past method-specified hold time by client request.

Sample extracted past method-specified hold time for BTEX/F1 analysis.

POLYCHLORINATED BIPHENYLS BY GC-ECD (SOIL) Comments

Sample KN3217-02 Polychlorinated Biphenyls: Sample extracted past method-specified hold time. Detection limits raised due to high moisture content, samples contain => 50% moisture.

Sample KN3218-02 Polychlorinated Biphenyls: Sample extracted past method-specified hold time.

Sample KN3219-02 Polychlorinated Biphenyls: Sample extracted past method-specified hold time.

Sample KN3220-02 Polychlorinated Biphenyls: Sample extracted past method-specified hold time.

Sample KN3221-02 Polychlorinated Biphenyls: Sample extracted past method-specified hold time.

Sample KN3222-02 Polychlorinated Biphenyls: Sample extracted past method-specified hold time.

Results relate only to the items tested.

Maxxam Job #: B478444
Report Date: 2014/09/22

QUALITY ASSURANCE REPORT

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
7627731	1,4-Difluorobenzene (sur.)	2014/09/10	110	60 - 140	101	60 - 140	103	%				
7627731	4-Bromofluorobenzene (sur.)	2014/09/10	100	60 - 140	101	60 - 140	100	%				
7627731	D10-ETHYLBENZENE (sur.)	2014/09/10	106	60 - 130	99	60 - 130	104	%				
7627731	D4-1,2-Dichloroethane (sur.)	2014/09/10	96	60 - 140	96	60 - 140	98	%				
7627755	O-TERPHENYL (sur.)	2014/09/08	91	50 - 130	87	50 - 130	92	%				
7630678	NONACHLOROBIPHENYL (sur.)	2014/09/10	80	30 - 130	94	30 - 130	94	%				
7637199	1,4-Difluorobenzene (sur.)	2014/09/19	97	70 - 130	97	70 - 130	101	%				
7637199	4-Bromofluorobenzene (sur.)	2014/09/19	100	70 - 130	102	70 - 130	101	%				
7637199	D4-1,2-Dichloroethane (sur.)	2014/09/19	102	70 - 130	106	70 - 130	105	%				
7638193	O-TERPHENYL (sur.)	2014/09/18	96	50 - 130	106	50 - 130	92	%				
7643036	NONACHLOROBIPHENYL (sur.)	2014/09/19	77	30 - 130	85	30 - 130	69	%				
7627702	Moisture	2014/09/06					<0.30	%	4.5	20		
7627731	(C6-C10)	2014/09/10	108	60 - 140	127	60 - 140	<12	mg/kg	NC	50		
7627731	F1 (C6-C10) - BTEX	2014/09/10					<12	mg/kg	NC	50		
7627755	F2 (C10-C16 Hydrocarbons)	2014/09/08	86	50 - 130	96	70 - 130	<10	mg/kg	NC	50		
7627755	F3 (C16-C34 Hydrocarbons)	2014/09/08	89	50 - 130	100	70 - 130	<50	mg/kg	NC	50		
7630678	Aroclor 1016	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1221	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1232	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1242	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1248	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1254	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1260	2014/09/10	75	30 - 130	91	30 - 130	<0.010	mg/kg	NC	50		
7630678	Aroclor 1262	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Aroclor 1268	2014/09/10					<0.010	mg/kg	NC	50		
7630678	Total Aroclors	2014/09/10					<0.010	mg/kg	NC	50		
7632590	Total Mercury (Hg)	2014/09/10	110	80 - 120	106	80 - 120	<0.0020	ug/L	NC	20		
7635451	Total Arsenic (As)	2014/09/13	101	75 - 125	97	75 - 125	<1.0	mg/kg	8.8	35	115	50 - 150
7635451	Total Cadmium (Cd)	2014/09/13	93	75 - 125	93	75 - 125	<0.10	mg/kg	NC	35		
7635451	Total Chromium (Cr)	2014/09/13	100	75 - 125	96	75 - 125	<1.0	mg/kg	7.8	35	105	41 - 159
7635451	Total Cobalt (Co)	2014/09/13	96	75 - 125	94	75 - 125	<1.0	mg/kg	19	35	103	75 - 125
7635451	Total Copper (Cu)	2014/09/13	99	75 - 125	97	75 - 125	<5.0	mg/kg	NC	35	106	73 - 127

Maxxam Job #: B478444
Report Date: 2014/09/22

QUALITY ASSURANCE REPORT(CONT'D)

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
7635451	Total Lead (Pb)	2014/09/13	94	75 - 125	93	75 - 125	<1.0	mg/kg	2.3	35	103	54 - 146
7635451	Total Mercury (Hg)	2014/09/13	98	75 - 125	100	75 - 125	<0.050	mg/kg	NC	35		
7635451	Total Nickel (Ni)	2014/09/13	102	75 - 125	97	75 - 125	<1.0	mg/kg	8.3	35	113	61 - 139
7635451	Total Zinc (Zn)	2014/09/13	NC	75 - 125	100	75 - 125	<10	mg/kg	NC	35	109	72 - 128
7636183	Total Arsenic (As)	2014/09/15	89	75 - 125	97	75 - 125	<1.0	mg/kg	NC	35	116	50 - 150
7636183	Total Cadmium (Cd)	2014/09/15	89	75 - 125	96	75 - 125	<0.10	mg/kg	NC	35		
7636183	Total Chromium (Cr)	2014/09/15	90	75 - 125	97	75 - 125	<1.0	mg/kg	5.1	35	96	41 - 159
7636183	Total Cobalt (Co)	2014/09/15	88	75 - 125	96	75 - 125	<1.0	mg/kg	6.3	35	99	75 - 125
7636183	Total Copper (Cu)	2014/09/15	89	75 - 125	98	75 - 125	<5.0	mg/kg	NC	35	103	73 - 127
7636183	Total Lead (Pb)	2014/09/15	NC	75 - 125	94	75 - 125	<1.0	mg/kg	11	35	104	54 - 146
7636183	Total Mercury (Hg)	2014/09/12	91	75 - 125	99	75 - 125	<0.050	mg/kg				
7636183	Total Nickel (Ni)	2014/09/15	90	75 - 125	98	75 - 125	<1.0	mg/kg	6.1	35	112	61 - 139
7636183	Total Zinc (Zn)	2014/09/15	NC	75 - 125	100	75 - 125	<10	mg/kg	15	35	109	72 - 128
7636306	Total Arsenic (As)	2014/09/13	101	80 - 120	101	80 - 120	<0.00020	mg/L	NC	20		
7636306	Total Cadmium (Cd)	2014/09/13	103	80 - 120	100	80 - 120	<0.000020	mg/L				
7636306	Total Chromium (Cr)	2014/09/13	98	80 - 120	100	80 - 120	<0.0010	mg/L	NC	20		
7636306	Total Cobalt (Co)	2014/09/13	102	80 - 120	101	80 - 120	<0.00030	mg/L	NC	20		
7636306	Total Copper (Cu)	2014/09/13	103	80 - 120	102	80 - 120	<0.00020	mg/L	NC	20		
7636306	Total Lead (Pb)	2014/09/13	103	80 - 120	106	80 - 120	<0.00020	mg/L	NC	20		
7636306	Total Nickel (Ni)	2014/09/13	102	80 - 120	101	80 - 120	<0.00050	mg/L	NC	20		
7636306	Total Zinc (Zn)	2014/09/13	101	80 - 120	103	80 - 120	<0.0030	mg/L	6.2	20		
7636477	Total Arsenic (As)	2014/09/15	93	75 - 125	91	75 - 125	<1.0	mg/kg	0.42	35	117	50 - 150
7636477	Total Cadmium (Cd)	2014/09/15	88	75 - 125	90	75 - 125	<0.10	mg/kg	NC	35		
7636477	Total Chromium (Cr)	2014/09/15	79	75 - 125	91	75 - 125	<1.0	mg/kg	47 (2)	35	97	41 - 159
7636477	Total Cobalt (Co)	2014/09/15	91	75 - 125	91	75 - 125	<1.0	mg/kg	NC	35	105	75 - 125
7636477	Total Copper (Cu)	2014/09/15	93	75 - 125	91	75 - 125	<5.0	mg/kg	NC	35	105	73 - 127
7636477	Total Lead (Pb)	2014/09/15	64 (1)	75 - 125	88	75 - 125	<1.0	mg/kg	80 (2)	35	104	54 - 146
7636477	Total Mercury (Hg)	2014/09/15	88	75 - 125	92	75 - 125	<0.050	mg/kg	NC	35		
7636477	Total Nickel (Ni)	2014/09/15	99	75 - 125	91	75 - 125	<1.0	mg/kg	6.1	35	114	61 - 139
7636477	Total Zinc (Zn)	2014/09/15	NC	75 - 125	92	75 - 125	<10	mg/kg	NC	35	109	72 - 128
7637199	(C6-C10)	2014/09/19	85	70 - 130	81	70 - 130	<100	ug/L	NC	40		
7637199	F1 (C6-C10) - BTEX	2014/09/19					<100	ug/L	NC	40		

Maxxam Job #: B478444
Report Date: 2014/09/22

QUALITY ASSURANCE REPORT(CONT'D)

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

QC Batch	Parameter	Date	Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
7638193	F2 (C10-C16 Hydrocarbons)	2014/09/18	108	50 - 130	110	70 - 130	<0.10	mg/L	NC	40		
7638193	F3 (C16-C34 Hydrocarbons)	2014/09/18	110	50 - 130	111	70 - 130	<0.20	mg/L	NC	40		
7643036	Aroclor 1016	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1221	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1232	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1242	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1248	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1254	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1260	2014/09/19	96	30 - 130	99	30 - 130	<0.000050	mg/L	NC	40		
7643036	Aroclor 1262	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Aroclor 1268	2014/09/19					<0.000050	mg/L	NC	40		
7643036	Total Aroclors	2014/09/19					<0.000050	mg/L	NC	40		

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

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

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

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

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

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

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than 2x that of the native sample concentration).

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (one or both samples < 5x RDL).

(1) Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.

(2) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

VALIDATION SIGNATURE PAGE

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



Anna Koksharova, M.Sc., Senior Analyst



Daniel Reslan, Chem. Tech., Volatiles Supervisor



Dina Tleugabulova, Ph.D., Scientific Specialist, Inorganics Department



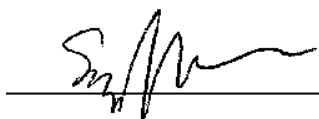
Justin Geisel, B.Sc., Supervisor, Organics



Luba Shymushovska, Senior Analyst, Organic Department



Peng Liang, Analyst II



Sandy Yuan, M.Sc., Scientific Specialist

Maxxam Job #: B478444
Report Date: 2014/09/22

SILA REMEDIATION
Client Project #: PIN-3
Site Location: PIN3 LADY FRANKLIN
Sampler Initials: AP

VALIDATION SIGNATURE PAGE(CONT'D)

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

17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

ANNEX 2

QA/QC DISCUSSION

QUALITY ASSURANCE / QUALITY CONTROL

Quality Assurance/Quality Control (QA/QC) program was implemented to monitor the quality of the analytical results. The main objective of this QA/QC program is to insure that sampling data and analysis results are complete, precise, exact, representative and comparable. The review consisted of evaluating sample collection/handling methodology, general laboratory comments, field (blind) duplicate samples, and inter-laboratory duplicate samples.

1. LABORATORIES

Samples collected during the monitoring program were submitted to laboratories accredited by the Canadian Association for Laboratory Accreditation (CALA):

- **Main Laboratory**
EXOVA
7217 Roper Road NW
Edmonton, Alberta
T6B 3J4, Canada
CALA Registration number: 2602
- **Quality Assurance Laboratory**
Maxxam Analytics International Corporation
o/a Maxxam Analytics Edmonton
9331 - 48th Street T6B 2R4
CALA Registration number: 2996

2. FIELD QA/QC

Standard sample collection techniques were implemented to decrease the likelihood of compromising collected samples, such as:

- Pre-cleaned sample containers were provided by the laboratory.
- Monitoring equipment was decontaminated between sampling stations and dedicated sampling systems were utilized.
- Soil samples were placed directly in the laboratory provided jars/bottles and were not mixed.
- Disposable nitrile glove were worn and disposed of after each sample collection.
- Jars/bottles were cleaned prior to placement into the cooler.
- Water samples were collected through the use of dedicated Waterra foot valves and tubing.

- Ice Packs or bagged ice (Ziplock bags) were used to ensure that sample temperature would be kept below 10°C during transportation.
- Samples were kept at the laboratory at temperatures below 4°C.

A sample integrity report from Exova is provided in Annex 1. This report indicates that all samples received were acceptable for analysis.

The following is a summary of the analytical QA/QC procedure implemented in the field:

- 10% field Blind Duplicate Samples of soil and water were sent to Exova: Six blind duplicate soil samples (P314-BD1 through P314-BD6) and one blind duplicate groundwater sample (P314-BDW1) were submitted, as an independent check on data reproducibility, and to assess the field QA/QC protocols. One trip blank (P314-FB) and one field blank water sample (P1/314-TB) were submitted for analysis.
- 10% Inter-laboratory Duplicate Samples were sent to Maxxam: Six blind duplicate soil samples (P314-6W, 4A, 6B, 13WA, 14A and 11WB) and one blind duplicate groundwater sample (P314-8W) were submitted (to determine if variation in procedures may cause significant difference in analytical results).
- 10% Archival Samples of soil were sent to ESG.

3. LABORATORIES QA/QC

Depending upon the method, Exova QC samples are set at 1 per XX samples for MS/MSD/DUPs (usually 1 per 20 for most Exova's Calgary methods) and 1 per batch for method blanks and calibration checks. For the client samples, multiple QCs associated with the samples/batches are analyzed and all QCs are evaluated. However only one 1 set of QCs will appear on the client report.

For the PIN-3 samples, Exova performed 5 batches associated with BTEX-CCME-Soil (each containing ~12 samples each). Four out of the 5 batches contained an MS/MSD. The other 1 batch contained a client duplicate. All 5 batches contain the calibration check and method blank.

The total metals analysis on the soil matrix was analyzed in two different batches as the 60 samples do not fit into a single batch size. In this specific analysis, a batch is set to insert a QA/QC sample every 25 samples and duplicate every 15 samples. In each

batch, Exova has two sets of QA/QC samples and duplicates. Exova's LIMS system is designed to report only one set of QC result (the smallest QC ID number) when there are multiple QC results appear in the batch. Exova's QA/QC results are presented in Annex 2.

As only 6 soil samples and 1 groundwater sample were sent to Maxxam, they only performed on single batch / control for soil and water, for all parameters. Maxxam's QA/QC results are presented with the certificates of analysis in Annex 1.

4. DATA MANAGEMENT AND INTERPRETATION

4.1. FIELD WORK

The relative percent difference (RPD) is used to evaluate the sample result variability. Average RPD values of 30% for each parameter analyzed from the same laboratory 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. These performance criteria are applicable when the concentrations of the original and duplicate sample are five times or greater than the laboratory method detection limit, since the uncertainty increases dramatically as the concentration approaches the detection limit. Table I provides the detection limit for each parameter and the associated minimum concentration to be reached in order to be eligible for RPD calculation.

Table I: Minimum Concentration for QA/QC RPD Calculation

Parameter	Laboratory	Soil			Water		
		Units	MDL	RPD Minimum*	Units	MDL	RPD Minimum*
As	Exova	mg/kg	0,2	1,0	mg/L	0,0002	0,0010
	Maxxam	mg/kg	1,0	5,0	mg/L	0,0002	0,0010
CD	Exova	mg/kg	0,01	0,05	mg/L	0,0001	0,0005
	Maxxam	mg/kg	0,10	0,50	mg/L	0,0002	0,0010
Cr	Exova	mg/kg	0,5	2,5	mg/L	0,0005	0,0025
	Maxxam	mg/kg	1,0	5,0	mg/L	0,0010	0,0050
Co	Exova	mg/kg	0,1	0,5	mg/L	0,0001	0,0005
	Maxxam	mg/kg	1,0	5,0	mg/L	0,0003	0,0015
Cu	Exova	mg/kg	1,0	5,0	mg/L	0,0010	0,0050
	Maxxam	mg/kg	5,0	25,0	mg/L	0,0002	0,0010
Pb	Exova	mg/kg	5,0	25,0	mg/L	0,0001	0,0005
	Maxxam	mg/kg	1,0	5,0	mg/L	0,0002	0,0010
Ni	Exova	mg/kg	0,5	2,5	mg/L	0,0005	0,0025
	Maxxam	mg/kg	1,0	5,0	mg/L	0,0005	0,0025
Zn	Exova	mg/kg	1	5	mg/L	0,001	0,005
	Maxxam	mg/kg	10	50	mg/L	0,003	0,015
Hg	Exova	mg/kg	0,01	0,05	mg/L	0,000005	0,000025
	Maxxam	mg/kg	0,05	0,25	mg/L	0,000010	0,000050
Total PCBs	Exova	mg/kg	0,10	0,50	ug/L	0,10	0,50
	Maxxam	mg/kg	0,01	0,05	ug/L	0,05	0,25
PHC F1	Exova	mg/kg	10	50	mg/L	0,2	1,0
	Maxxam	mg/kg	12	60	mg/L	0,1	0,5
PHC F2	Exova	mg/kg	50	250	mg/L	0,1	0,5
	Maxxam	mg/kg	10	50	mg/L	0,1	0,5
PHC F3	Exova	mg/kg	50	250	mg/L	0,1	0,5
	Maxxam	mg/kg	50	250	mg/L	0,2	1,0

* : The RPD Minimum is the minimum concentration to be reached for QA/QC Relative Percent Difference Calculation

4.1.1. SOIL SAMPLES

Six blind duplicate soil samples were submitted for intra- and inter-laboratory comparisons. The original and duplicate intra- and inter-laboratory metal, PCB and PHC soil sample results are summarized in Tables II and III, respectively, along with the calculated RPD for each parameter. As noted in the tables, several of the results from the original and/or duplicate samples were below or within five times the laboratory method detection limits, and therefore RPD values were not calculated for these parameters.

Review of results indicated relatively minor differences in metal concentrations within the intra-laboratory duplicate samples, except for samples P314-6B / P314-BD3 which are consistently slightly over the 30% limit. It should be noted that most metal concentrations from these two samples are still very low and fairly close to the detection limit. No corrective measures associated with these samples are necessary.

RPD for copper from samples P314-6WB / BD1 and P314-13WA / BD6 are both above the 30% limit (49.1 and 68.7%, respectively). These variations could be associated to sample uniformity or small bits of metals in one of the sample. As all other parameters from these two sets of sample fall below the 30% limit, no corrective measures are necessary.

Results from the inter-laboratory duplicate samples indicated significantly higher RPD values for chromium and nickel (5 out of 6 samples) and zinc (1 of 6 samples). Inter-laboratory results for samples do raise concern as the actual chromium and nickel concentrations are doubled and sometimes almost 10 times greater in results from Maxxam. As the intra-laboratory QC results from Exova did not raise any serious concern, other influential factors could be raised, such as:

- Sample reception date
 - o 25 August 2014 for Exova
 - o 04 September 2014 for Maxxam (Yellowknife)

Samples were sent on the same day from Cambridge Bay. They apparently reached Edmonton prior to Yellowknife. This factor should only affect the volatile organic concentration.

- Sample uniformity:
 - o There may have been small bits of metal in the sample. If there are, then this would make the sample heterogeneous and therefore a lot of variability for these two elements (the metals would be present as flecks and would not be a part of the soil matrix – this creates a high level of variability in the sample). As the results are very low and well below any guideline limit, these flecks may not even be visible or may just be a part of the soil material.
- Water provided by the laboratory
 - o Organic free water, supplied by Maxxam, was utilized for the 2014 Landfill Monitoring Program as field blanks and to clean field equipment as a result of the samples/supplies not being shipped by the primary lab (Exova) prior to mobilization. As the laboratory supplied water was not “metals free”, the above noted metal concentrations could be the result of external interference during collection and/or transport between site and laboratory. Both blanks did not exhibit any detectable level of metals.

- Sample preparation methods
 - o Samples are often ground with a stainless steel flail grinder or in a stainless steel housing. It is possible that the metal came off at this point. As can be seen, if this is the case, very little material was transferred to the soil because the levels are well below any guideline limits.
 - o It is possible that there are slight variations to the acid digestion which could lead to a higher extraction of certain recalcitrant elements. Chromium does tend to be one of those recalcitrant elements. Nickel generally does not fall in this category but if the chromium and nickel are together in a compound, this may be possible.

4.1.2. WATER SAMPLES

One blind duplicate groundwater sample (P314-8W / P314-BDW1) was submitted for intra- and inter-laboratory comparisons. The original and duplicate intra- and inter-laboratory metal, PCB and PHC sample results are summarized in Table IV, along with the calculated RPD for each parameter and average RPD for each sample. As noted in the table, all organic parameters from the original and/or duplicate samples were below or within five times the laboratory method detection limits, and therefore RPD values were not calculated for these parameters.

Review of the results indicated significant differences in metal concentrations between the original and intra-laboratory duplicate sample with only cadmium and mercury falling within the acceptable performance criteria, ranging between 4.9% and 8.0%. All other parameters exhibit concentrations from the original sample almost twice as high as the duplicate sample. Although the field results from the probe indicate that the well water had stabilized, it may have required additional purging. More attention will be taken on-site to ensure that stability is reached prior to sampling.

Review of the inter-laboratory duplicate results indicated RPD values as high as for the intra-laboratory QA/QC results. With the exception of cadmium and lead (1.2 and 20.0%), all other metals had higher RPD values, ranging from 33.8 to 52.9%. As opposed to the soil results, Exova shows consistently more elevated metal concentrations than Maxxam (except for cadmium). This difference could again be associated the stabilization of the water well prior to sampling.

The samples from the trip blank (TB) and field blank that were submitted for metals, PCB and PHC analyses are also summarized in Tables III. As shown, PHC F2 concentration was detected

in both the field and travel blank, while mercury was detected in the travel blank only. Both blanks may have accidentally been exposed to gasoline and/or diesel fumes.

Organic free water, supplied by Maxxam, was utilized for the 2014 Landfill Monitoring Program as field blanks and to clean field equipment as a result of the samples/supplies not being shipped by the primary lab (Exova) prior to mobilization. As the laboratory supplied water was not "metals free", the above noted metal concentrations may have been the result of external interference during collection and/or transport between site and laboratory. But since both blanks did not exhibit any detectable level of metals, no links can be made.

4.2. LABORATORIES

QA/QC results from both laboratories do not raise any concern or provide any explanation concerning the concentration difference noticed in the inter-laboratory duplicate samples. It should be noted that inter-laboratory variations are common. QA/QC results from both laboratories are appended.

4.2.1. BLANKS

All blanks from both laboratories, for both matrices and for all parameters were below the detection limits.

4.2.2. ANALYTICAL DUPLICATES

All analytical duplicates from both laboratories, for both matrices and for all parameters had RSD' at or below 20%.

4.2.3. CONTROL SAMPLES

All control samples from both laboratories, for both matrices and for all parameters had concentrations between the upper and lower concentration established for each parameter.

Table II: Soil Chemical Analysis Results - Intra-Laboratory Quality Assurance Samples

Sample #	Location		Parameters											F1	F2	F3
		As	Cd	Cr	Co	Cu	Pb	Ni	Zn	Hg	PCBs	C ₆ -C ₁₀	C ₁₀ -C ₁₆	C ₁₆ -C ₃₄		
		[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	
Detection Limit		0.2	0.01	0.5	0.1	1.0	5.0	0.5	1	0.01	0.1	10	50	50		
RPD Minimum		1,0	0,05	2,5	0,5	5,0	25,0	2,5	5	0,05	0,5	50	250	250		
P314-6WB	P3-6W	0,8	<0.01	4,0	3,2	14,2	<5	4,6	6	<0.01	<0.1	<10	<50	<50		
P314-BD1		0,9	0,01	4,6	2,7	8,6	<4.9	4,0	7	<0.01	<0.1	<10	<50	<50		
Relative % Difference		NA	N/A	14,0	16,9	49,1	N/A	14,0	15,4	N/A	N/A	N/A	N/A	N/A		
P314-4A	P3-4	1,5	0,53	2,8	1,1	8,9	5,9	2,8	55	0,1	<0.1	<10	<50	60		
P314-BD2		1,3	0,42	2,7	1,2	7,7	<4.9	2,7	52	0,09	<0.1	<10	<50	74		
Relative % Difference		14,3	23,2	3,6	8,7	14,5	N/A	3,6	5,6	N/A	N/A	N/A	N/A	N/A		
P314-6B	P2-6	1,2	0,07	4,5	3,5	12,9	<4.9	5,0	7	<0.01	<0.1	<10	<50	<50		
P314-BD3		2,2	0,03	3,2	2,4	12,8	<5	3,5	5	<0.01	<0.1	<10	<50	<50		
Relative % Difference		58,8	NA	33,8	37,3	0,8	N/A	35,3	33,3	N/A	N/A	N/A	N/A	N/A		
P314-13WA	MW-13	1.0	0,11	4,2	2,3	17,6	6,3	3,1	12	0,01	<0.1	<10	<50	<50		
P314-BD4		0,9	0,11	4,5	2,4	8,6	7,1	3,7	11	0,01	<0.1	<10	<50	<50		
Relative % Difference		NA	0,0	6,9	4,3	68,7	NA	17,6	8,7	0,0	N/A	N/A	N/A	N/A		
P314-14A	P3-14	1.0	0,02	3,8	1,4	3,0	<5	2,1	7	<0.01	<0.1	<10	<50	<50		
P314-BD5		0,9	0,02	3,3	1,2	2,7	<5	1,6	6	<0.01	<0.1	<10	<50	<50		
Relative % Difference		NA	NA	14,1	15,4	NA	N/A	NA	15,4	N/A	N/A	N/A	N/A	N/A		
P314-11WB	MW-11	0,9	<0.01	4,4	2,5	4,5	<5	3,8	9	<0.01	<0.1	<10	<50	<50		
P314-BD6		0,9	<0.01	4,1	1,9	4,4	<4.9	3,2	4	<0.01	<0.1	<10	<50	<50		
Relative % Difference		NA	N/A	7,1	27,3	NA	N/A	17,1	NA	N/A	N/A	N/A	N/A	N/A		

Table III: Soil Chemical Analysis Results - Inter-Laboratory Quality Assurance Samples

Sample #	Laboratory	Parameters													
		As	Cd	Cr	Co	Cu	Pb	Ni	Zn	Hg	PCBs	F1	F2	F3	TPH
		[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	[mg/kg]	C ₆ -C ₁₀ [mg/kg]	C ₁₀ -C ₁₆ [mg/kg]	C ₁₆ -C ₃₄ [mg/kg]	C ₆ -C ₃₄ [mg/kg]
RDL - Exova		0,2	0,01	0,5	0,1	1,0	5,0	0,5	1	0,01	0,10	10	50	50	NA
RPD Minimum (Exova)		1,0	0,05	2,5	0,5	5,0	25,0	2,5	5	0,05	0,50	50	250	250	NA
RDL - Maxxam		1,0	0,1	1,0	1,0	5,0	1,0	1,00	10	0,05	0,03	12	10	50	NA
RPD Minimum (Maxxam)		5,0	0,5	5,0	5,0	25,0	5,0	5,00	50	0,25	0,15	60	50	250	NA
P314-6WB	Exova	0,8	<0.01	4,0	3,2	14,2	<5	4,6	6	<0.01	<0.1	<10	<50	<50	<110
	Maxxam	5,9	0,26	21,0	6,3	15	37	27	130	0,077	<0.01	<12	<10	<50	<110
Relative % Difference		NA	N/A	136,0	NA	N/A	N/A	141,8	182,4	N/A	N/A	N/A	N/A	N/A	N/A
P314-4A	Exova	1,5	0,53	2,8	1,1	8,9	5,9	2,8	55	0,10	<0.1	<10	<50	60	<120
	Maxxam	<2	0,53	3,6	<2	<10	3,7	3,9	40	0,12	<0.03	<31 ⁽¹⁾	<26 ⁽¹⁾	<130 ⁽¹⁾	<187
Relative % Difference		N/A	0,0	NA	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P314-6B	Exova	1,2	0,07	4,5	3,5	12,9	<4.9	5	7	<0.01	<0.1	<10	<50	<50	<110
	Maxxam	1,0	<0.1	57	2,2	7,4	1,1	27	<10	<0.05	<0.01	<12	<10	<50	<110
Relative % Difference		NA	N/A	170,7	NA	NA	N/A	137,5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P314-13WA	Exova	1,0	0,11	4,2	2,3	17,6	6,3	3,1	12	0,01	<0.1	<10	<50	<50	<110
	Maxxam	1,6	0,1	35	1,9	8,9	7,4	17	<10	<0.05	<0.01	<12	<10	<50	<110
Relative % Difference		NA	N/A	157,1	N/A	N/A	N/A	138,3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P314-14A	Exova	1,0	0,02	3,8	1,4	3,0	<5	2,1	7	<0.01	<0.1	<10	<50	<50	<110
	Maxxam	1,2	<0.1	18	1,1	8,7	2,2	8,8	<10	<0.05	<0.01	<12	<10	<50	<110
Relative % Difference		NA	N/A	130,3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
P314-11WB	Exova	0,9	<0.01	4,4	2,5	4,5	<5	3,8	9	<0.01	<0.1	<10	<50	<50	<110
	Maxxam	1,1	<0.1	22	2,0	<5	1,5	11	<10	<0.05	<0.01	<12	<10	<50	<110
Relative % Difference		NA	N/A	133,3	N/A	N/A	N/A	97,3	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) : Detection limit raised due to high moisture content

Table IV: Groundwater Chemical Analysis Results - Quality Control Samples

Sample #	Laboratory	Parameters												
		As [mg/L]	Cd [mg/L]	Cr [mg/L]	Co [mg/L]	Cu [mg/L]	Pb [mg/L]	Ni [mg/L]	Zn [mg/L]	Hg [mg/L]	PCBs [ug/L]	F1	F2	F3
												C ₆ -C ₁₀ [mg/L]	C ₁₀ -C ₁₆ [mg/L]	C ₁₀ -C ₃ [mg/L]
MDL (Exova)		0,0002	0,00001	0,0005	0,0001	0,0010	0,0001	0,0005	0,001	0,000005	0,10	0,2	0,1	0,1
RPD Minimum (Exova)		0,0010	0,00005	0,0025	0,0005	0,0050	0,0005	0,0025	0,005	0,000025	0,50	1,0	0,5	0,5
MDL (Maxxam)		0,0002	0,00002	0,0010	0,0003	0,0002	0,0002	0,0005	0,003	0,000010	0,05	0,1	0,1	0,2
RPD Minimum (Maxxam)		0,0010	0,00010	0,0050	0,0015	0,0010	0,0010	0,0025	0,015	0,000050	0,25	0,5	0,5	1,0
Intra-Lab Duplicate Samples (Exova)														
P314-8W	Exova	0,0172	0,00083	0,2310	0,0167	0,0260	0,0088	0,1920	0,076	0,000026	<0.1	<0.2	0,2	<0.1
P314-BDW1		0,0293	0,00079	0,4090	0,0279	0,0410	0,0141	0,3150	0,120	0,000024	<0.1	<0.2	0,2	<0.1
Relative % Difference		52,0	4,9	55,6	50,2	44,8	46,3	48,5	44,9	8,0	N/A	N/A	N/A	N/A
Inter-Lab Duplicate Samples (Exova-Maxxam)														
P314-8W	Exova Maxxam	0,0172	0,00083	0,2310	0,0167	0,0260	0,0088	0,1920	0,076	0,000026	<0.1	<0.2	0,2	<0.1
		0,0100	0,00084	0,1400	0,0100	0,0170	0,0072	0,1200	0,054	0,000017	<0.05	<0.1	<0.1	<0.2
Relative % Difference		52,9	1,2	49,1	50,2	41,9	20,0	46,2	33,8	NA	N/A	N/A	N/A	N/A
P314-FB	Field Blank	<0.0002	<0.00001	<0.0005	<0.0001	<0.001	<0.0001	<0.0005	<0.001	<0.000005	<0.1	<0.2	0,2	<0.1
P2/314-TB	Travel Blank	<0.0002	<0.00001	<0.0005	<0.0001	<0.001	<0.0001	<0.0005	<0.001	0,000006	<0.1	<0.2	0,2	<0.1

ANNEX 3

FIELD NOTES AND CHAINS OF CUSTODY FORMS

(31)

19

	DATE	TIME	LOCATION	DESCRIPTION	REMARKS
190	V. WE E SIDE				
191	MID DEPT. ON CREST - S.				
	N-N/E 80x20-40 x 5-104				
192	V-S @ VEHICLE ROTS 1/2 ALONG E CREST 2x5V				
	TIER II DF WATER SAMPLING SEE PAGE --				
AUGUST 17, 2014					
830	PACUVO CAMP; DEMOS TO PIN-3				
1115	PICKUP LOAD 1200				
	SETUP CAMPS → 1500H				
	LOCAL CAMPER'S DR. POINT				
	BATTERIES, MILK, SOAP, WATER SUPPLIES + COOLERS				
	- BAKN 10°C, 10KNH NW				
	- PERIODIC RAIN.				

2

Station	Notes	Sketch	Remarks
205	V-NE/S @ TDE - VERON W SIDE		
206	MIN EROSION. 13m x 30-50, S ↓ V-ESE / WNW		
207	V-NISE		
208	V-WNW / NEQ VER UPSLOPE		
209	V-SW / E MIN EROSION & CREST 7m x 30 x 2-S ↓		
210	MIN DEPR. CREST + TOP SLOPE 3+3m. 40-50-S ↓ V-NW/SW		
211	EROS. CREST + DOWNSLOPE 11m x 40-100, S ↓ V-S/SW / NE		
212	PAN S-N @ INSIDE BOWL		
213	V-NE/S		
214	V-NIE @ TDE V-NE @ DEPR. ON BOT. CRNE TRIANGLE 3m @ base. 10-15 ↓		
215			
216			
217			
218			
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221			
222			
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224			
225			

(22)

226	V-S/NW	AVOISE E/IDE		
227	V-SE/SE	NW CNR.		
228	V-N/E/SW CNR.	PAN SE-NW		
229	P314-2	A/B.		
	LT GRN/CLAY SAND, W COVER 100%			
		0-10		
		40-50		
230	V-N.E.S	SIDE (VEZ)		
231	V WNW-	NNW QSE CN		
232	V-WSW	ACROSS WDE		
	NORTH EWS OF WDE POTRUY CRABED/			
	DISTURBED, DIFFICULT TO REMARKING			
233	V-SW	AVOISE NW SIDE		
234	V-N/E	C'DISTURBED AREA		
235	V-NE/S	QNW CNR		
		NO VEZ/PROS/SETT		
236	V-ESE			
237	P314-3	A/B	0-10	
		DRY BRN SAND + COVER 100%		
238	P314-4	A/B	0-10	
		CLAY, TR ORG + SAND 40-50		
		BRN ROCK - ALL ORG + SAMPLE		

(23)

MAIN	REQUIRE DATA LOGS	FOR
239	VT-3	DOWNLOAD
240	VT-4	DATA
241	VT-1	
242	VT-2	
	DERIVE	
243	VT-5	
244	VT-6	
245	VT-8	
246	VT-7	
	DOWNLOAD ALL DATA SUCCESSFULLY,	
	HANDLE BATTERIES ULB1, ULB15.	
	RESET CLOCK + RESTART DATA LOGS.	
	L-12:15 AM.	
	AVGUST 18, 2014	CLEAR, 5°C - 20°C
		-10°C
	NON-HAZARDOUS WASTE LANDFILL	
247	MW-16	SURF 72 V-N
		3.97
		DOT 3.97
	VEZ ALONG BOTTOM 2m OF S SLOPE	
248	V-E/N	CSW TDE
	V-N/E CROSS ON CNR SLOPE	
	S (max 40x10) 4.	
	39 POTS. 2m 50. 15.	
	LEVEL	

(24)

(25)

249	V-E/N	PAN SE - NNW CNR	261	V-S/E	4 PAN NW-SE CNR	
250	V-S/E	ON CRN SLOPE	262	V-N	ON CRN SLOPE	
251	3 SURF DEPR (N-S DIR)		263	P314-13W	(A) B. V. SW.	
252	3x 2m x 50 x 10	V-N/E/S/D	254	0-10 BRN SAND-SOME GRAVEL		
253	LINE DEPR (E-W DIR) 6m x 15 x 5		255	DRY. (A-B) D4	0-10 40-50	
254	V-E/B		264	MW-14	SLUR-50	V-S
255	V-E	4m x 15 x 5	265	V-E/S	1185- both	348
256	V-W/N	SE CRN PAN NE-SW	266	V-E/S	1 PAN SW-NE	NW CRN
257	V-W/N	SE TDE	267	MIN EROSION ON E	CREST	
258	EXP PIECE OF GED MEMB	V-SE	268	8m x 20 x 2	V-SW/NE	
259	40 x 20		269	MIN EROSION W	CRN	
260	P314 16W	0-10	270	5m x 15 x 2	V-W/E	
261	REFUSAL ON BR 15		271	4m x 10 x 2	V-W	
262	DURON GRAVEL, SOME ORG + SAND		272	EDGE OF ROUGH CRN	NW; PAN S-E	
263	MIN EROSION ON SE CRN		273	P314-14W	A/B	
264	V-W 7m x 20-40 x 5	15' S shape	274	0-10 DKS BRN CRN		0-10
265	MW-13	SLUR-39	275	10-15 BRN SAND	W/CRAVEL	30-40
266	171	both 3.09	276	10-15 BRN SAND	both	278
267	V-W C E-SLOPE		277	MW-15	SLUR-54	V-E
268	BM-3		278	157	both	278
269	V-S/W C NE	TOE				
270	TRUCK	VEZ MONZ, BOT 23m S/E				

LEVEL

272	P314-15W	A/B	0-10 40-50	284	MN EROSION TOP-TOE, 20W, 5↓	V-E
	0-10 DK BRN ORG SAND			285	PROPOSED ON SLOPE	6m, 25x10↓
	10- BRN SAND DRY TO GRAY				V-E, STOPS 15m below	
274	SW MARGINS OF REGRADE AREA			286	V-E SW, PAN SE-NW-E NE CRNR	CRNR
275	EW FEATURE V-E/W				V-NE C POT HOLE ON TOP CRNR	
276	5276x16mLx20x5↓				(E-W dir) 2m x 40x15	
277	SE CRNR OF REGRADE	PAN NW		287	V-NE CRNR EROS ALONG CRNR SW	
278	LOC DEPR IN REGRADE				2m LONG - MIN 15Wx5↓	
	V-W/N	60x40x10↓		288	V-N/E TOE - NE	
				289	MW-10 SLOP 20	
					2 day	both 1.15
					P314-10W A/B	3m SE - V-NW
279	MW-9	SLOP 39	V-S		0-10 DK GRN, GRAY	0-10
	2 day	both 185			10-10 DK BRN SAND, M-CS GRAY	40-50
				290	MW-11 SLOP 39	V-N
280	P314-9W	A/B	4m SW		1455	both 179
	0-BLN 5+4, DRY		V-NE			
TRUCK	V-E/SC NW TOE					
281	V-E/5, PAN SW-ENE CRNR			P314-11 A/B	(B/D=6)	0-10
282	SM LIN DEPR			0-10	DK GRN ORG + SAND	40-50
	3m OFF CRNR 2mLx20x5↓			10-	BRN-MCS SAND IT CRNR V. dry	
283	MN ERO. 2x20W TOP-TOE 5↓			291	PAN NE/NW	0.5 SIDE
	V-W/E					

LEVEL

29

Station	Notes	Remarks
292	MIN DEPRESSION ON EXT. FROM	
	MUD S-SIDE (NOT IN CONTACT)	
293	MUD-12 SILT 60	18m SW
	166	60ft 2.04
		18m SW
	P314 12W A/B	
	0-15 DK BROWN ORG	0-10
	15 - BROWN MICS SAND, DRY	40-50
294	V-WIN @ SE CORNER	
295	V-WIN @ UNEVEN AREA AT TDE	
	EROSION 6m L, 40x10-15d	
	WELL ARMOURING	
296	MIN EROSION CREST 3m, 10, 5d VSE	
	V-WIN, PAN NE-SW @ SE CORNER	
297	VT-8, V-W	
298	POT HOLE @ Below Slope	
	V-SE 80x30x10d	
299	M1 - EROSS. TOP-TDE 15x2-5d V-S	
300	MINI DEP. BELOW CREST 80x40x10d	
301	EROS. TOP-TDE 30, 10-5d V-S	
302	3m, 15, 5d V-S	
303	VT-7 V-WIN @ SE DEP. E of VT	
	4m L, 30x50x15-25d	

(30)

317	P3 CAMP				331	V-NW	OFF SIDE		
					332	V-NW	SIDE		
SOUTH LANDFILL EAST									
318	PERF. DRUM, CRUSHED	4m ANTIMON			333	P314-NW	A/B	V-S	
	PERF. V-S								
319	V-SW/SW E TOE (NW)				334	V-ENE/NW	40-5		
320	V-NW/SE				335	V-ENE @ SW SIDE		SAMPLE	
321	V-NW/SE, SAMPLE P9								
322	IRON STAINING ON SOIL / V-S				336	DEEP ON TOE	30-50		
	EX 15m from toe, 50w								
323	V-N/SW TOE, MIN POND 3m E				337	V-SW	PONDED AREA	TOE	
324	V-WC DRIED UP DRAINAGE EXT FROM				338	V-S	PAN	V-SW	
325	E SIDE TOE, MIN STAIN 324 V-E				339	SP. VEG	ON COVER		
326	V-SE @ SMALL POND				340	GRAY SAND	TOE	P314-11 A/B	
327	PAN N-SW ACROSS COVER, MIN								
328	VEG				341	V-SE	ALONG TOE +		
329	SL. DEEP ON COVER 8x8x20				342	V-NW	@ SW SIDE		
330	V-S @ J								
331	P314-9 A/B	V-S			343	P314-6 A/B	(BD3)		
332	BRN SAND, M-CS GR. WET	35							
333	SM. POT HOLE	V-N	25x25x104		344	V-NW			
334	PONDED AREA TOE, IRON STAIN / PIG				345	WIRE + MISC. METAL	-STAIN		
335	8x4m x 15d	V-N/E	/S		346	V-W	E-END		
336	WATERFOUL SCAT.				347	V-NW			
337					348	V-WC METAL BAR	/STRAP	BOXS	
338					349	V-NW	SE SIDE		

LEVEL

(31)

(38)

350		NORTH		LEVEL	
350	V-8E @ POUNDED	350	V-8E @ POUNDED	350	V-8E @ POUNDED
351	ORANGE STAIN/PAGE 75x40	351	ORANGE STAIN/PAGE 75x40	351	ORANGE STAIN/PAGE 75x40
352	V-5W	352	V-5W	352	V-5W
353	V-NW @ POUNDED	353	V-NW @ POUNDED	353	V-NW @ POUNDED
354	V-E @ POUNDED	354	V-E @ POUNDED	354	V-E @ POUNDED
355	P314-7 A/B	355	P314-7 A/B	355	P314-7 A/B
356	V-E/SE @ NW CORNER	356	V-E/SE @ NW CORNER	356	V-E/SE @ NW CORNER
357	PAN S-NW @ CROSS COVER, SP. VEL.	357	PAN S-NW @ CROSS COVER, SP. VEL.	357	PAN S-NW @ CROSS COVER, SP. VEL.
358	V-NW @ W. SIDE	358	V-NW @ W. SIDE	358	V-NW @ W. SIDE
359	P314-8 A/B	359	P314-8 A/B	359	P314-8 A/B
360	MIX METAL, EXP. PUNTED	360	MIX METAL, EXP. PUNTED	360	MIX METAL, EXP. PUNTED
361	V-NW @ SW SIDE	361	V-NW @ SW SIDE	361	V-NW @ SW SIDE
362	P314-5 A/B	362	P314-5 A/B	362	P314-5 A/B
363	V-NW @ POUNDED	363	V-NW @ POUNDED	363	V-NW @ POUNDED
364	V-NW @ POUNDED	364	V-NW @ POUNDED	364	V-NW @ POUNDED
365	V-NW @ POUNDED	365	V-NW @ POUNDED	365	V-NW @ POUNDED
366	V-NW @ POUNDED	366	V-NW @ POUNDED	366	V-NW @ POUNDED
367	V-NW @ POUNDED	367	V-NW @ POUNDED	367	V-NW @ POUNDED
368	V-NW @ POUNDED	368	V-NW @ POUNDED	368	V-NW @ POUNDED
369	V-NW @ POUNDED	369	V-NW @ POUNDED	369	V-NW @ POUNDED
370	V-NW @ POUNDED	370	V-NW @ POUNDED	370	V-NW @ POUNDED
371	V-NW @ POUNDED	371	V-NW @ POUNDED	371	V-NW @ POUNDED
372	V-NW @ POUNDED	372	V-NW @ POUNDED	372	V-NW @ POUNDED
373	V-NW @ POUNDED	373	V-NW @ POUNDED	373	V-NW @ POUNDED
374	V-NW @ POUNDED	374	V-NW @ POUNDED	374	V-NW @ POUNDED
375	V-NW @ POUNDED	375	V-NW @ POUNDED	375	V-NW @ POUNDED
376	V-NW @ POUNDED	376	V-NW @ POUNDED	376	V-NW @ POUNDED
377	V-NW @ POUNDED	377	V-NW @ POUNDED	377	V-NW @ POUNDED
378	V-NW @ POUNDED	378	V-NW @ POUNDED	378	V-NW @ POUNDED
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381	V-NW @ POUNDED	381	V-NW @ POUNDED	381	V-NW @ POUNDED
382	V-NW @ POUNDED	382	V-NW @ POUNDED	382	V-NW @ POUNDED
383	V-NW @ POUNDED	383	V-NW @ POUNDED	383	V-NW @ POUNDED
384	V-NW @ POUNDED	384	V-NW @ POUNDED	384	V-NW @ POUNDED
385	V-NW @ POUNDED	385	V-NW @ POUNDED	385	V-NW @ POUNDED
386	V-NW @ POUNDED	386	V-NW @ POUNDED	386	V-NW @ POUNDED
387	V-NW @ POUNDED	387	V-NW @ POUNDED	387	V-NW @ POUNDED
388	V-NW @ POUNDED	388	V-NW @ POUNDED	388	V-NW @ POUNDED
389	V-NW @ POUNDED	389	V-NW @ POUNDED	389	V-NW @ POUNDED
390	V-NW @ POUNDED	390	V-NW @ POUNDED	390	V-NW @ POUNDED

5

11 AUGUST 19, 2014 5°C CLEAR CALM

PC Testr. 35 (T, pH, Cond)

Main 2 LGND Full

Mw-8.	(B.D.W.)
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COND. 2.63 | 2.74 | 2.25

pH 7.2/7.3

COLLECT. ~~24~~ 4x40, 6

3x250 p.	540
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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Low Volume Limited.

T 45.	Rhowsky.	Co 22.2.0
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04 85. 1213. 364

Can 157	105000	PURCH=800
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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4103412-4	144341A6V1
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7817571 45 1437

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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3.12.28/2.6	COND	1326/1134/112
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7/6/75	Tues 80	110
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CONNECT ALL - CAC	PROJECT 152
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LEVEL

(36)

MAIN LANDFILL (CONTINUED INSPECTION)

390	V-S/N. ALONG E CRST PAN S			
391	VT-1 QUAD TRACKS V-NW			
392	V-WNW @ LRG DEPRESSION (FEAT)			
393	V-SE/NW, veg along crst			
394	PAN NW-SE			
395	V-SE/SW @ N CRK, PATCHY VEG ON NW SLOPE			
396	VT-2 V-S (VT-4 IN SKAND)			
397	V-S/ESE PAN-S-N			
398	V-N @ LRG DEPR. (S/NW)			
	V-NNE/SW 6m x 14 x 5-10			
399	MIN EROSION ON TOP SLOPE			
400	V-S/NW, PAN E-NW ACROSS MIN EROSION @ CRST 2m, 25 x 5 ft			
	V-N/NW, NOT DEFINED ON SLOPE			
401	VT-4			
402	V-NW @ CRST BUTS NEAR CRST 1-2m x 20 x 5 ft			
403	V-N/E @ SW CRK V-S @ MIN DEPR 1 M. BELOW CRST 1.5mL, 30m, 10 ft			
404/5	V-E @ MIN DEPR 90x30-50x10 ft @ CRST			
406	V-E/C EROSION @ CRST 3.5mL x 15-20m 5 ft ↓			

(37)

407 V-NW/SE

407	3 EROSION @ CR. TOP - TOP 15-30m x 5-10			
	V-SW/NW → 408			
408	V-WISE @ TOP			
407	PAN - S-N ACROSS TOP			
409	VT-3 V-W. (VT-4 IN SKAND)			
	V-S @ LRG DEPR. @ NSE SIDE OF			
	VT-3. 1x1 x 10 ft			
410	V-NW/NNE @ SOUTH CRK			
411	V-NW/NNE @ SOUTH TOE			
412	LIN DEPR ON SLOPE 1/2. 1.5 x 50 x 7 ft			
413	MIN EROSION TOP-TOE 10 x 5 ft			
	V-ESE, defined			
414	LIN DEPR ON 2m below crest			
	50 x 20 x 10 ft V NE/NW			
415	PAN NNE-SW			
416	MIN ALONG TOE 1'			
	VERY SPARSE VEG ON TOP COVER			

LEVEL

(38)

(39)

FIER TIDE

MW-12

T 2.8/3.1/3.2 COND 2.16/2.10/2.07
MS
PH 7.6/7.8/7.9 TUES. 79.

COLLECT ALL - C+C PURGE 800ML

MW-11

T 26/22/19 COND 1232/1209/1295
MS
PH 79/78/78 TUES 163.

COLLECT ALL - C+C (SL. BY TRANS)
PURGE 700ML

NON-HAZARDOUS WASTE LANDFILL

MW-13

T 3.5/3.0/2.6 COND 965/997/1034
MS
PH 83/83/82 TUES. 36.

COLLECT ALL - C+C PURGE 35L

MW-14

T 2.7/2.9/3.2 COND 2.29/1.06/1.857
MS
PH 7.4/7.4/7.4 TUES 57

COLLECT ALL C+C PURGE 55L

LEVEL

505

Q301E

Copy of report:

Copy of invoice:

This section for Lab use only

indicate in the space allotted any deficiencies by the corresponding number.

8. Indicate any samples received in an inappropriate container

contain

Delivery Method:

Waybill:

Control # C C A S R C S

Project Information

Project ID: _____
Project Name: _____
Project Location: _____
Legal Location: _____
PO/A/E#: _____
Proj. Acct. Code: _____
Quote #: _____

Invoice to:

Report To:

Report
Results
Regulatory
Requirement

Company: _____
Address: _____
Attention: _____
Phone: _____
Cell: _____
Fax: _____
E-mail: _____
Agreement ID: _____
Copy of report: _____

Company: _____
Address: _____
Attention: _____
Phone: _____
Cell: _____
Fax: _____
E-mail 1: _____
E-mail 2: _____
Copy of invoice: _____

E-Mail _____
Mail _____
Online _____
Fax _____
PDF _____
Excel _____
QA/QC _____
Sample Custody (please print)
Sampled by: _____

RUSH Priority

Emergency (contact lab for turnaround and pricing)
Priority 1-2 working days (100% surcharge)
Urgent 2-3 working days (50% surcharge)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

Date Required: _____

Signature: _____

Special Instructions/Comments (please include contact information including ph. # if different from above).

Number of Containers

TDN (F1-F3)
PCB₃
Metals

Enter tests above
(N relevant samples below)

Indicate in the space allotted any deficiencies by the corresponding number.

Site I.D.	Sample Description	Depth start in cm	end m	Date/Time Sampled	Matrix	Sampling Method
1	P314-12B				Soil	
2	-5WVA					
3	-5WVB					
4	-6WVA					
5	-6WVB					
6	-7WVA					
7	-7WVB					
8	-8WVA					
9	-8WVB					
10	-9WVA					
11	-9WVB					
12	-10WVA					
13	-10WVB					
14	-11WVA					
15	-11WVB					

Submission of this form acknowledges acceptance of Exova's Standard Terms and Conditions (<http://www.exova.com/about/terms-and-conditions/>)

Please indicate any potentially hazardous samples

Indicate lot # or affix barcode here

Shipping: # and size of coolers COD Y/ N

Temp. received: Delivery Method: Waybill:

Project Information

Project ID: _____
Project Name: _____
Project Location: _____
Legal Location: _____
PO/AFE#: _____
Proj. Acct. Code: _____
Quote # _____

Invoice to:

Company: _____
Address: _____
Attention: _____
Phone: _____
Cell: _____
Fax: _____
E-mail: _____
Agreement ID: _____
Copy of report: _____

Report To:

Company: _____
Address: _____
Attention: _____
Phone: _____
Cell: _____
Fax: _____
E-mail 1: _____
E-mail 2: _____
Copy of invoice: _____

Report Results Regulatory Requirement

E-Mail: _____
Mail: _____
Online: _____
Fax: _____
PDF: _____
Excel: _____
QA/QC: _____
HCDW/QG
Ab Tier 1
SPIGEC
BCCSR
Other (list below)

Sample Custody (please print)

Sampled by: _____

Company: _____

This section for Lab use only

Date/Time stamp: _____

Date Required: _____ Signature: _____
Special Instructions/Comments (please include contact information including ph. # if different from above).

Emergency (contact lab for turnaround and pricing)
Priority 1-2 working days (100% surcharge)
Urgent 2-3 working days (50% surcharge)

When "ASAP" is requested, turn around will default to a 100% RUSH priority, with pricing and turn around time to match. Please contact the lab prior to submitting RUSH samples. If not all samples require RUSH, please indicate in the special instructions.

RUSH Priority

Site I.D.	Sample Description	Depth start in cm	Depth end in cm	Date/Time Sampled	Matrix	Sampling Method
1	P314 - 12WB				SAC	
2	-12WB					
3	-13WB					
4	-13WB					
5	-14WB					
6	-14WB					
7	-15WB					
8	-15WB					
9	-16WB					
10	P314 - BD1					
11	B02					
12	B03					
13	B04					
14	B05					
15	B06					

Number of Containers

TPH (F1-F3)
PCBs
Metals

Enter tests above
(/ relevant samples below)

Indicate in the space allotted any deficiencies by the corresponding number.

Indicate lot # or affix barcode here

Shipping: COD Y/ N

and size of coolers: 4 DRY

Temp. received: _____
Delivery Method: _____

Waybill: _____

Received by: _____

Company: SILVA REMEDIATION
Contact: J.O. Pelletier
Address: 1260 Bowle Brongseuf
Quebec, QC
Contact #s: 418-626-1688 Cell: 5892

Report To: Same as Invoice
Province: QC
City: Quebec

Report Distribution (E-Mail):
andrew.passalis@gmail.com

REGULATORY GUIDELINES:
☐ AT1
☐ CCME
☐ Regulated Drinking Water
☐ Other:

All samples are held for 60 calendar days after sample receipt, unless specified otherwise.

PO #:
Project # / Name: PIN-3
Site Location: PIN-3 LAOY FRANKLIN
Quote #:
Sampled By: A. Passalis
SERVICE REQUESTED: ☐ RUSH (Contact lab to reserve)
☒ Date Required: REGULAR (5 to 7 Days)

See reverse for package specifics

Sample ID	Depth (unit)	Matrix GW / SW Soil	Date/Time Sampled YY/MM/DD 24:00	SOIL	WATER	Other Analysis	HOLD - Do not Analyze	# of Containers Submitted
1	P314-4A		5014 14/08/17	BTEX F1-F4 Sieve (75 micron) Regulated Metals (CCME / AT1) Salinity 4 Assessment ICP Metals Basic Class II Landfill PCBS Metals (As, Co, Cu, Cr, Ni, Hg, Zn, Pb) ☐ BTEX F1 ☐ VOCs ☐ BTEX F1-F2 ☐ BTEX F1-F4 ☐ Routine Water ☐ Turb ☐ F ☐ TOC ☐ DOC Total Dissolved Mercury ☐ Total ☐ Dissolved				
2	-6B		18	X				
3	-14A		18	X				
4	-6WB		18	X				
5	-11WB		18	X				
6	-13WA		18	X				
7								
8	P314-8W		Wax 4/08/19					
9								
10								
11								
12								

Please indicate Filtered, Preserved or Both (F, P, F/P)

Relinquished By (Signature/Print): APASSALIS **Date (YY/MM/DD):** 14/08/20 **Time (24:00):** 1700
Relinquished By (Signature/Print): APASSALIS **Date (YY/MM/DD):** 14/08/20 **Time (24:00):** 1700
Special Instructions:

Received By: **Date:** **Time:** **LAB USE ONLY**
Maxxam Job #:
Custody Seal **Temperature** **Ice**