

APPENDIX E.8
DECOMMISSIONING REPORTS

APPENDIX E.8.1
MILNE PORT NUNA SHOP



Technical Memorandum

To: Jim Millard
From: Lea Willemse
cc:
Date: March 19, 2016
Re: 2015 Nuna Shop Decommissioning Work

Introduction

This technical memorandum describes the activities undertaken to decommission the former contractor (Nuna) shop and ancillary power supply (generators) and includes the assessment and remediation of impacted areas associated with the structures that was undertaken at Milne Port in 2015.

In March 2015, 10 contractor trailers/shipping containers (seacans), one contractor camp (Shanco), the former Nuna shop and two diesel powered generators were required to be removed from their existing location at the south west corner of the Milne Port Site footprint to allow for the construction of the south east end of the Ore Stockpile Pad (refer to Figure A.1 of Attachment A).

The former Nuna shop was a 19 m x 13 m Quonset structure (refer to Photo B.1) constructed during the winter of 2007-2008 to serve as a workshop for contractor personnel completing maintenance activities on project equipment. The footprint of the structure was lined with a geosynthetic liner at an approximate depth of 0.25 m to contain hazardous materials routinely used in the shop (fuels, lubricating oils, greases, etc.). Ancillary to the former Nuna shop, were two diesel generator seacans (east and west) used to supply electricity to the shop and adjacent Shanco Camp (also removed).

Decommissioning Program

Decommissioning activities commenced with the disassembly of the Quonset structure, followed by removing 58 m³ of soil that was placed on top of the liner and served as the interior shop floor surface. The 58 m³ of soil was transported to the Milne Port Landfarm Facility¹ for containment and ongoing bioremediation.

A 20' seacan was connected to the east side of the shop, and was used as an extension to the building for the storage of tools. The floor of the seacan consisted of metal under which, a liner was not required. After removing the seacan, the underlying soils were assessed for disturbance and determined not to have been impacted activities completed in the shop and further assessment of this area was not required.

Upon removal of the geosynthetic liner and covering soil layer (shop floor), excavation of the newly exposed soil underlying the liner could not be completed due to frozen ground conditions. At this time, the shop footprint was staked-off until spring

¹ The Milne Port Landfarm Facility was constructed in August 2014 and is comprised of a 136 m x 63 m (7,620m²) containment berm to accommodate 3,383 m³ of contaminated soil in addition to a 47 m x 43 m (2,021 m³) contaminated snow containment berm to accommodate 929 m³ of contaminated snow.



thaw conditions permitted further assessment and excavation of the area (refer to Photos B.2 and B.3 in Attachment B). Subsequent to removing the Nuna Shop liner, the generators were also removed from the area. The generator footprints were also staked-off for further assessment upon ground thaw conditions.

In June 2015, decommissioning of the areas staked-off in March recommenced with the excavation of 126 m³ of underlying soil to a depth of 0.5 m at the Nuna shop footprint (refer to Photo B.3 in Attachment B).

Based on a visual and olfactory assessment of the excavated Nuna shop footprint, the presence of petroleum hydrocarbons (PHC) could not be detected in the exposed soils (classified mainly as fine to medium grained sands with some gravel and little silt); however, to ascertain that the area was void of PHCs, subsequent confirmatory sampling was completed. A total of 10 samples were considered to be representative of the former shop footprint and were collected on June 29, 2015 at the depth of excavation and sent off-site for analysis. All 10 samples were analyzed to detect the presence of PHCs. Additional analysis was completed on 4 of the 10 samples collected to detect the presence of select metals of environmental concern (refer to Table C.1 of Attachment C).

Based on a visual and olfactory assessment of the east and west generator footprints the presence of PHCs could not be detected in the east generator area and further excavation of the area was not required. However, to ascertain that the area was void of PHC presence, subsequent confirmatory sampling was completed. A total of 3 samples were considered to be representative of the area and collected on June 29, 2015.

Upon a visual and olfactory assessment of the west generator area, slight PHC presence could be detected. Excavation of 27 m³ of soil was completed and was extended by 1 m at all sides of the original footprint to a depth reaching permafrost (approximately 1 m) (refer to Photos B.4 and B.5 in Attachment B). After excavation, PHC presence could not be detected by visual and olfactory assessment of the newly exposed soils; however, to ascertain that the area was void of PHC presence, confirmatory sampling was completed. A total of 5 samples were considered to be representative of the area and were collected on July 7, 2015.

Sampling Methodology

Soil samples were collected at the depth of excavation at the shop and generator footprints. All soil samples were collected in 250 mL glass jars using a spade and nitrile gloves. To avoid cross-contamination, the spade was rinsed with potable water between samples and a new pair of nitrile gloves were worn for each soil sample that was collected.

Soil sample analyses were conducted by a CALA accredited lab in Waterloo, ON operated by ALS (refer to Attachment C for analytical results).

Guidance

Tier 1 criteria for the remediation of PHC contaminated fine-grained soil for industrial land use (Tier 1 Guidelines), outlined in the Government of Nunavut's *Environmental Guideline for Contaminated Site Remediation* (GN, 2009), was used to determine the remediation objectives for the soil underneath the former Nuna Shop and ancillary generators at Milne Port (refer to Table C.1 of Attachment C).

The Canadian Soil Quality Guidelines remediation criteria for other contaminants (metals, PCBs, PAHs etc.) for fine-grained soil for industrial land use, outlined in the Government of Nunavut's *Environmental Guideline for Contaminated Site Remediation* (GN, 2009), was used to determine the remediation objectives for the soil underneath the former Nuna Shop (refer to Table C.1 of Attachment C).



Conclusion and Close-out

Analytical results (refer to Table C.1 of Attachment C) confirmed successful remediation (PHC and metals concentrations below Nunavut's Environmental Guideline criteria) of the former Nuna Shop and generator footprints, and the areas were cleared to allow for the completion of the Milne Port ore stockpile pad.

Long-Term Monitoring of Site Surface Water

As part of Baffinland's approved Early Revenue Phase, two settling ponds were constructed at the north end of the ore conveyor pad in the summer of 2014 to temporarily retain the runoff water from the Milne Port stockpile and contain the sediment load to meet the water quality standards in accordance with applicable effluent quality criteria prior to discharge to Milne Inlet. During normal operation, runoff from the stockpile area drains to the stockpile settling ponds. The ponds are equipped with overflow weirs designed to allow the unloaded surface water to drain through a controlled discharge to Milne Inlet. Water in the stockpile settling ponds will be monitored as part of the site drainage water quality monitoring strategy to meet applicable effluent quality criteria. Should it be determined that total PHCs migrated below excavated soil depths or to extents where they were not detected, water quality sampling of surface water completed as part of Baffinland's water quality monitoring strategy will detect PHC presence and site surface water shall be retained and treated prior to discharge.

References

NWB (Nunavut Water Board), 2015. Baffinland Iron Mines Corp. – Type A Water License No: 2AM-MRY1325 – Amendment No. 1. *Issued* July 21, 2015.

GN (Government of Nunavut), 2009. Environmental Guideline for Contaminated Site Remediation. Prepared by the Department of Environment of the Government of Nunavut, March 2009.

ATTACHMENTS

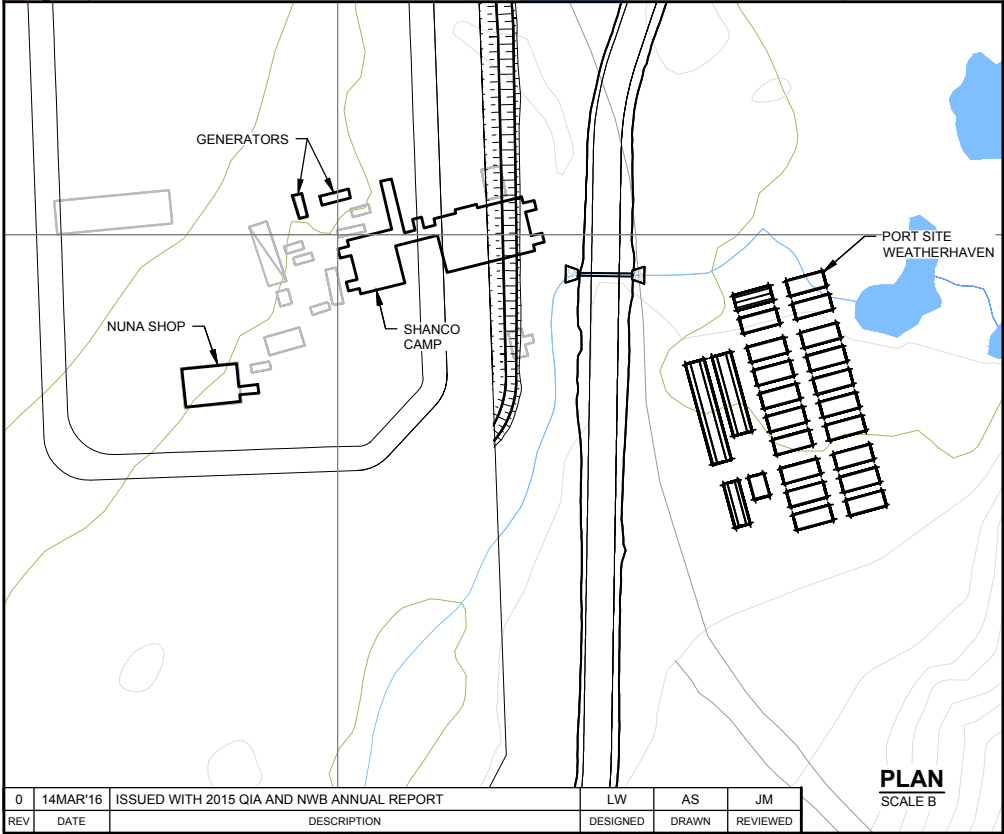
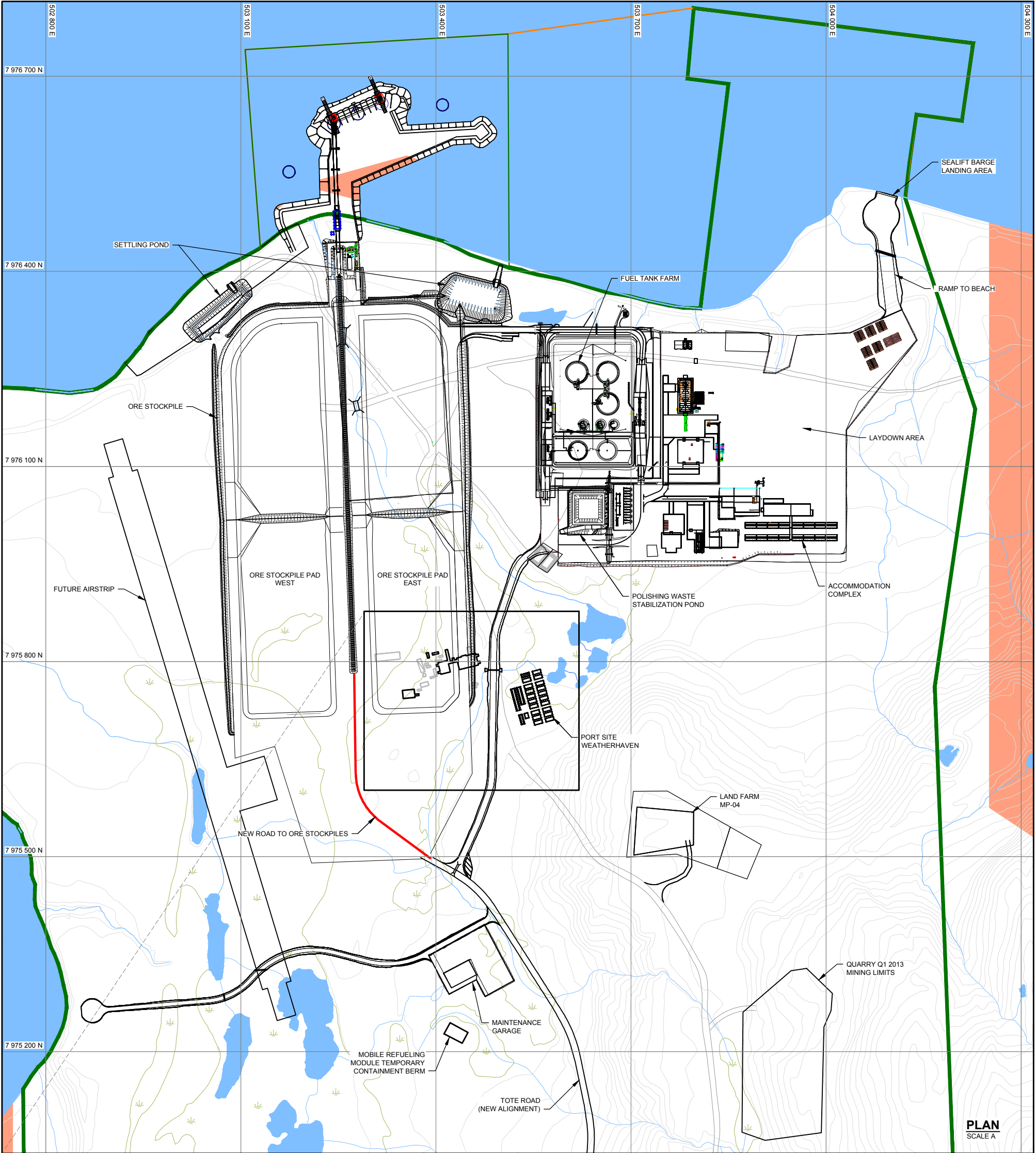
ATTACHMENT A – Figures

ATTACHMENT B – Photos

ATTACHMENT C – Analytical Results

ATTACHMENT A

FIGURES

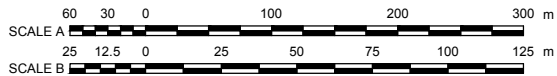


LEGEND:

- INUIT OWNED LAND - SURFACE ONLY EXCLUDING MINERALS
- WATER
- RIVER/STREAM/DRAINAGE
- ROAD

NOTES:

- COORDINATE GRID IS UTM NAD83 ZONE 17N.
- TOPOGRAPHY PROVIDED BY EAGLE MAPPING (2005).
- LOCATIONS OF NUNA SHOP, SHANCO CAMP AND GENERATORS PROVIDED BY BAFFINLAND IRON MINES CORPORATION, MARCH 8, 2016.
- PLAN BASED ON INFORMATION PROVIDED BY HATCH, DATED (JAN 31, 2014).
- CONTOUR INTERVAL IS 2.5 METRES.



MARY RIVER PROJECT

SITE LAYOUT
2015 NUNA SHOP DECOMMISSIONING WORK

Knight Piésold
CONSULTING

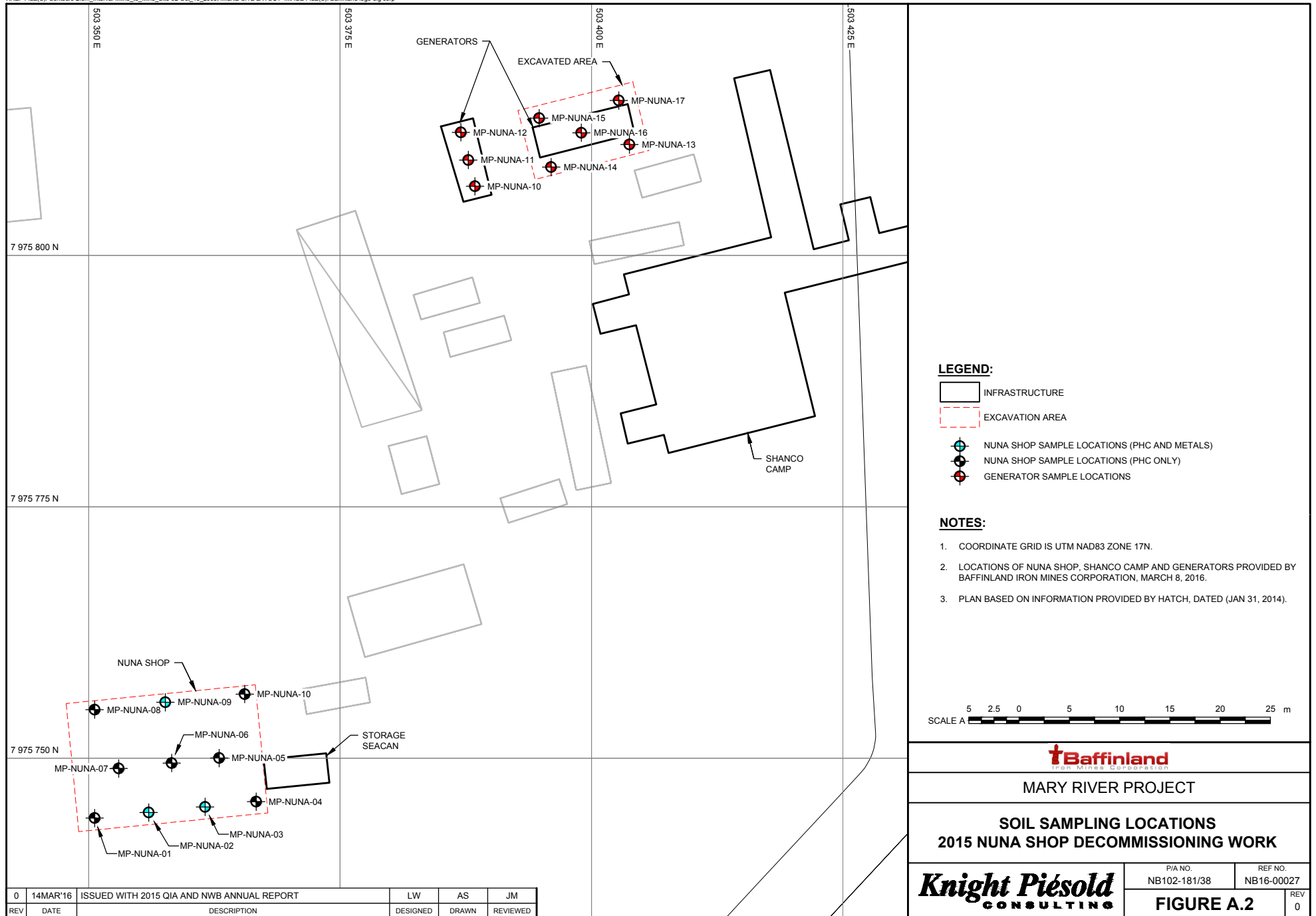
P/A NO.
NB102-181/38

REF NO.
NB16-00027

FIGURE A.1

REV
0

REV	DATE	DESCRIPTION	DESIGNED	DRAWN	REVIEWED
0	14MAR'16	ISSUED WITH 2015 QIA AND NWB ANNUAL REPORT	LW	AS	JM





ATTACHMENT B

PHOTOS



Photo B.1: Former Nuna Shop Quonset Structure Constructed in the winter of 2007 - 2008



Photo B.2: Former Nuna Shop Footprint after Removal of Building and Liner



Photo B.3: Former Nuna Shop Footprint Staked-off for Assessment and Excavation



Photo B.4: Former Nuna Shop Footprint after Excavation



Photo B.4: West Generator Footprint before Excavation



Photo B.5: West Generator Footprint after Excavation



ATTACHMENT C

ANALYTICAL RESULTS



2015 Nuna Shop Decommissioning Work

Table C.2 - Analytical Results for PHC Analysis

SAMPLE ID	Sample Date	F1 (C6-C10)	F2 (C10-C16)	F3 (C16-C34)	F4 (C35+)	Benzene	Ethylbenzene	Toluene	Xylene
Tier 1 Industrial Fine-grain (ug/g)*		320	260	1700	3300	0.03	0.082	0.37	11
MP-NUNA-01	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-02	29-Jun-15	<5	16	241	56	<0.02	<0.05	<0.20	<0.11
MP-NUNA-03	29-Jun-15	<5	<10	161	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-04	29-Jun-15	<5	15	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-05	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-06	29-Jun-15	<5	<10	67	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-07	29-Jun-15	<5	14	86	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-08	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-09	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-10	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-11	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-12	29-Jun-15	<5	<10	<50	<50	<0.02	<0.05	<0.20	<0.11
MP-NUNA-13	07-Jul-15	<5	<10	<50	<50	<0.02	<0.05	<0.05	<0.11
MP-NUNA-14	07-Jul-15	<5	36	<50	<50	<0.02	<0.05	<0.05	<0.11
MP-NUNA-15	07-Jul-15	<5	<10	<50	<50	<0.02	<0.05	<0.05	<0.11
MP-NUNA-16	07-Jul-15	<5	<10	<50	<50	<0.02	<0.05	<0.05	<0.11
MP-NUNA-1601	07-Jul-15	<5	<10	<50	<50	<0.02	<0.05	<0.05	<0.11
MP-NUNA-17	07-Jul-15	<5	25	<50	<50	<0.02	<0.05	<0.05	<0.11

* Remediation Criteria for Petroleum Hydrocarbons - Table A3-1. - Summary of Tier 1 for PHC for Surface Soil, Government of Nunavut's Environmental Guideline for Contaminated Site Remediation (GN, 2009)



2015 Nuna Shop Decommissioning Work

Table C.2 - Analytical Results for Metals Analysis

Parameter	Soil Quality Guideline*	Sample ID**			
	(mg/kg)	MP-NUNA-02	MP-NUNA-03	MP-NUNA-09	MP-NUNA-10
Arsenic	12	0.54	0.40	0.41	0.26
Barium	2000	9.07	6.10	4.36	3.06
Cadmium	22	0.074	<0.020	<0.020	<0.020
Chromium	87	5.89	5.15	4.73	3.43
Copper	91	12.1	2.92	2.22	1.30
Lead	600	17.5	3.26	2.28	1.72
Mercury	50	0.0236	<0.0050	<0.0050	<0.0050
Nickel	50	4.21	2.49	1.89	1.28
Selenium	2.9	<0.20	<0.20	<0.20	<0.20
Thallium	1	<0.050	<0.050	<0.050	<0.050
Uranium	300	0.521	0.775	0.399	0.317
Zinc	360	44.1	7.9	4.7	3.3

* Remediation Criteria for other Contaminants - Table A4-1. - Canadian Soil Quality Guidelines, Government of Nunavut's Environmental Guideline for Contaminated Site Remediation (GN, 2009)

** All samples collected on 29-Jun-15

APPENDIX E.8.2
ANMAR FIRE REMEDIATION



**WORK SUMMARY - REMEDIATION
ANMAR MAINTENANCE SHOP
MILNE INLET (NUNAVUT)**

Privileged and confidential document presented to



**Mr. Sandeep Kumar
Procurement Specialist
Baffinland Iron Mines Corporation**

FINAL REPORT

December 17, 2015

O/Ref.:QE15-113-2




**WORK SUMMARY - REMEDIATION
ANMAR MAINTENANCE SHOP
MILNE INLET (NUNAVUT)**

Privileged and confidential document presented to

BAFFINLAND IRON MINES CORPORATION

Prepared and verified by:


Benoit Dion, B.Sc., M.Env
Project Director – Northern Projects



FINAL REPORT

December 17, 2015

O/Ref.: QE15-113-2

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LIST OF ABBREVIATIONS

ESA:	Environmental Site Assessment
IMDG:	International Marine Dangerous Goods
m.t.:	Metric tonne
PHC:	Petroleum hydrocarbons
RFQ:	Request for quote

1. INTRODUCTION

Anmar's maintenance warehouse, located at the port of Milne Inlet (Nunavut), was partially ravaged by fire involving major damage. Baffinland Iron Mines (BIM) retained the services of Qikiqtaaluk Environmental Inc. (QE) to mobilize a project director to evaluate the situation and propose solutions to minimize the potential impact on the environment. A site visit was performed in April 2015, under the supervision of Mr. Mario Mercier, Project Director with QE. In a second step, QE was contracted to complete a waste management report with the objective of outlining the dismantling work, the packaging of hazardous materials and soil remediation work. The directives were detailed in QE's waste management plan¹, presented in Appendix A. The plan allowed BIM to initiate an RFQ for the remediation work, which was awarded to the firm Ruskin. QE was contracted to supervise the fieldwork and to provide active support for the packaging of the hazardous and non-hazardous materials.

1. "Waste Management Plan – Fire Occurred at Anmar Maintenance Shop – Milne Inlet Port Complex", Qikiqtaaluk Environmental Inc., Ref.: QE15-113-1, July 7, 2015.

2. SUMMARY OF WORK

At 6:30 a.m. each day, a meeting was held to distribute the daily work plan, discuss the tasks presenting health and safety risks, and share other foreseen problems. Each day ended at 6:30 p.m. Weekly reports, including the daily activity logs, are presented in Appendix B of this report.

On a daily and as-needed basis, the site technician communicated with the project manager to ensure the continuity of the work. When Ruskin's game plan differed from the action plan stipulated in the waste management plan, the site technician communicated with the project manager. The new measure was evaluated and the procedure modified, if required.

The work was carried out over a period of 4 weeks and summarily divided as follows:

- Week 1 (August 18 to 23, 2015):
 - mobilization of equipment and personnel,
 - assessment of the work by our technician,
 - removal of a section of the roof structure,
 - identification of contaminants requiring special attention or handling;
- Week 2 (August 24 to 30, 2015):
 - drainage of fluids from the Genie-Lifts,
 - removal of the engines,
 - removal of small debris and placement in marine containers (per category),
 - transfer of oil from old tote tank to new closed top drums,
 - general packaging of hazardous waste,
 - dismantling and crushing of marine containers;
- Week 3 (August 31 to September 6, 2015):
 - dismantling and crushing of marine containers,
 - cleaning of containers affected by grease and oil,
 - transport of containers to port area in preparation for off-site shipment,
 - building of crates for the cylinders;
- Week 4 (September 7 to 13, 2015):
 - final preparation for off-site shipment,
 - communication with maritime transporter for the loading of the sealift,
 - completion of hazardous waste documentation.

A photographic report is presented in Appendix C of this document.

3. HEALTH AND SAFETY

The daily site meeting included health and safety issues. Each activity presenting a health and safety risk was subject to approval. The waste management plan addressed the risks related to the handling of certain hazardous materials present for this project. The completed health and safety forms are presented in Appendix D of this document.

The waste management, site meetings and forms covered, among others, the following tasks:

- Tasks related to the handling of oily solids, oils and greases;
- Tasks related to the exposure of workers to chromium soot;
- Tasks related to the cutting of certain materials with heat-producing tools;
- The packaging of compressed cylinders with partially melted valves.

Certain other risks required documenting, such as the possible presence of asbestos in one of the lamp components found on-site. A laboratory analysis was required to determine whether the component was an asbestos containing material.

BIM's health and safety representatives were included in some morning meetings, and discussions were initiated with them regarding some tasks posing health and safety risks.

4. PACKAGING COMPLIANCE

To ensure that the materials packaged during the Anmar project were compliant for maritime transport, QE and Ruskin implemented the following actions:

- Hazardous materials:
 - validation of IMDG requirements,
 - question/validation with Transport Canada for the cylinders,
 - on-site technician possessed IMDG training,
 - communication of the documentation to the maritime transporter (dated September 15, 2015);
- Non-hazardous materials:
 - communication of the documentation to the maritime transporter,
 - transmission of the photographic report.

The role of QE and Ruskin was to ensure together that the dangerous goods were packaged in compliance with the waste management plan and that all were accompanied by the compliant transport documentation. Furthermore, the maritime transport company was advised of the inventory (hazardous and non-hazardous) to be loaded on the ship. A meeting with Desgagnés Transport, photographic reports and email transfers were carried out to ensure that all proceeded as anticipated during loading.

5. GLOBAL INVENTORY

Ruskin was awarded the contract to leave nothing behind, to package and transport the materials off-site in compliance with applicable regulations. As such, Ruskin appropriately packaged all materials, and the list of materials to be loaded on the boat is presented in the following tables. A copy of the completed backhaul request form is presented in Appendix E.

TABLE 1: Scrap Metal

Material Description	Container No.	Container Type	Estimated Volume	Estimated Weight
<ul style="list-style-type: none"> Bulk metal pieces; Crushed containers; Miscellaneous metal debris. 	<ul style="list-style-type: none"> 496061-3; 631492-1; 922303-9; 693779-6; 092683-6; 182075-2; Bulk Package 1; Bulk Package 2; Bulk Package 3. 	40 ft sea container	<ul style="list-style-type: none"> 6 sea containers; 3 bulk packages. 	130 m.t.
<ul style="list-style-type: none"> Bulk metal pieces; Crushed containers; Miscellaneous metal debris. 	<ul style="list-style-type: none"> 213892-1; 202087-7; 287409-6; 788932-6. 	20 ft sea container	4 sea containers	26.54 m.t.

TABLE 2: Non-hazardous Waste

Material Description	Container No.	Container Type	Estimated Volume	Estimated Weight
Plastic tarp	123392-4	40 ft sea container	1 sea container	11.34 m.t.
Miscellaneous garbage	607633-7	40 ft sea container	1 sea container	7.5 m.t.
Miscellaneous garbage	273080-1	20 ft sea container	1 sea container	4.76 m.t.

TABLE 3: Contaminated Soils

Material Description	Container No.	Container Type	Estimated Volume	Estimated Weight
Contaminated soils	<ul style="list-style-type: none"> 697283-0; 683413-3. 	20 ft sea container	2 sea containers	29 m.t.
Contaminated soils	<ul style="list-style-type: none"> 684413-3; 184684-9; 139098-9; 601132-8. 	40 ft sea container	3 sea containers	66 m.t.

TABLE 4: Regulated Dangerous Goods

Material Description	Container No.	Container Type	Estimated Volume	Estimated Weight
Hazardous Waste	399892-6	20 ft sea container	1 sea container	6.35 m.t.

6. REGULATED DANGEROUS GOODS FOR TRANSPORT

As part of the project, some of the dangerous goods were classified under the IMDG. These are listed in the table below, and a copy of the maritime transport manifest, along with a packaging list and photographs, are presented in Appendix F of this document.

TABLE 5: Non-Hazardous Waste

Description	Packaging	Quantity
Batteries	Open top drums, UN, 205 L.	1
Paint related materials	Open top drums, UN, 205 L.	4
Diesel	Open top drums, UN, 205 L.	2
Mercury	Open top drums, UN, 205 L.	1
Trichloroethylene	Open top drums, UN, 205 L.	1
Propane	Cylinders overpacked in a wooden crate	5
Fire extinguishers	Cylinders overpacked in a wooden crate	10
Aerosols	Cans	approx. 10 kg
Oxygen, compressed	Cylinders overpacked in a wooden crate	3
Acetylene, dissolved	Cylinders overpacked in a wooden crate	1

7. MATERIALS DISPOSAL CENTRES (HAZARDOUS AND NON-HAZARDOUS)

Upon arrival at the Port of Valleyfield, the materials are directed to authorized disposal sites. Four (4) categories of materials are to be disposed of: hazardous materials, non-hazardous materials, scrap metal and contaminated soils. The disposal facilities are listed below:

Hazardous materials:

Solva-Rec Environnement Inc.

795 Lucien-Beaudin
Saint-Jean-sur-Richelieu (Quebec) J2X 5M3
Tel.: 450 347-3008
Fax: 450 347-1270



Non-hazardous Materials:

BFI Lachenaie (Complexe Enviro Progressive Ltée)

3779 Des Quarante-Arpents Road
Lachenaie (Quebec) J6V 1A3
Tel.: 450 474-2423



Scrap Metal:

ArcelorMittal - Contrecoeur

3900 Route des Acieries, RR1
Contrecoeur (Quebec) J0L 1C0
Tel.: 450 392-3200



Contaminated Soils:

Horizon Environnement

120 Fifth Avenue
Grandes-Piles (Quebec) G0X 1H0
Tel.: 819 538-3921



A copy of the operating permit is presented in Appendix G.

8. COMPLIANCE WITH WASTE MANAGEMENT PLAN

The work was carried out in compliance with the waste management plan presented by QE. Each time Ruskin proposed a task outside of the guidelines of QE's plan, an analysis of the task to be performed was completed and procedures were implemented. For example, the sea containers considered as scrap in QE's report were dismantled and crushed using a different technique. The new task was assessed by QE and adjustments were made.

9. SOIL MANAGEMENT

Prior to beginning the dismantling and remediation work, QE presented an environmental characterization report¹. The presence of contaminated soils was detected at a few locations points on-site. In all, 15 test pits were excavated (TP-1 to TP-15). The environmental characterization report is presented in Appendix H.

During the week of dismantling work, the excavation of soils began in the areas identified during QE's Phase II ESA and under the containers that had contained potentially hazardous materials (PHCs, batteries and oily solids). Some additional samples were collected to more accurately delineate the contaminated areas. Considering that a membrane was present at approximately 10 to 20 inches beneath the soil, only impacted surface soils were managed.

The excavation and containerization work is summarized as follows:

- A total of 6 confirmatory samples were collected following the excavation;
- Contaminated soils beneath Seacans BSC-2 and BSC-3 were excavated and put in Quatrex bags. Confirmatory analyses were collected (SS-03 and SS-04). Other than the exceedance presenting in sample SS-02, the confirmatory samples (6 overall) presented PHC concentrations below applicable criteria;
- Contaminated soils on the east side of BSC-2 and BSC-3 were also excavated over an 11" thickness, but olfactory evidence of contamination (associated with diesel fuel, probably stemming from burned Genie lifts, or a previous spill) were observed in a wider area than what appears to be associated with the fire. Natural soils in this area are covered by a liner, located at a depth of approximately 1.5 ft;
- Soils from the bags were samples (11 samples in total) and some contained quantities of lead coming from the melted batteries that were in the container located in the northwest corner of the Site. High levels of PHCs were also discovered.

Potentially contaminated soils (above criteria) should remain in place (from the liner up to 10 to 12 inches) in the northwest corner (near SS-2) of the former Anmar Shop. The information was shared with BIM and, as such, soil management will take place. Considering that the soils are affected by a volatile hydrocarbon (diesel) and are easily treated, the soil treatment platform (landfarm) will be on-site to complete this work.

The locations of the confirmatory samples, as well as the corresponding certificates of analysis, are presented in Figures 1 and 2 of Appendix I of this report.

The distribution of the bags to be disposed of off-site in an authorized facility is as follows:

- 50 bags with PHC concentrations above applicable criteria;

1. "Environmental Characterization of Soils, Anmar Maintenance Shop – Milne Inlet", Qikiqtaaluk Environmental Inc., Ref.: QE15-113-1, July 7, 2015.

- 5 bags with lead concentrations above applicable criteria.

10. OTHER SAMPLES

In an effort to confirm the suspected presence of asbestos in a material found on the project site (photograph 2 of Appendix B), a laboratory analysis was requested. The material may possibly have served as an insulator for the lights that were hung on the roof structure. The analyses (2 in all) revealed that the samples contained less than 0.1% asbestos. The corresponding certificate of analysis is presented in Appendix I of this report.

11. TECHNICAL INSTRUCTIONS

On the project site, some cylinders were found with their valves completely burned. It was impossible to tighten the security cap. As compressed cylinders are regulated for maritime transport, Transport Canada was contacted to provide a technical instructions. It was decided that the cylinders could be transported without the valves under the condition that they be packaged in such a way that the valve not be disturbed during the maritime transport. Transport Canada's email is presented in Appendix J of this report.

12. FINAL DISPOSAL (SCRAP METAL AND NON-HAZARDOUS WASTE)

All the materials from the Anmar remediation project departed from Milne Inlet during the week of September 27, 2015 on the marine vessel Avataaq (A2N), operated by Nunavut Eastern Arctic Shipping (NEAS). Once the materials had arrived at the Port of Valleyfield, QE first carried out an inspection of the materials for health and safety purposes and to prepare for final disposal.

All scrap metal (i.e., scrap metals in containers, heavy equipment and bulk metals) was disposed of/recycled at Arcelor Mittal's Contrecoeur plant. The non-hazardous waste (i.e., garbage) was disposed to BFI in Lachenaie. Andy Transport ensured the transport from the Port of Valleyfield to Contrecoeur and Lachenaie. Beginning November 20, 2015 the schedule is presented in the following tables.

November 20, 2015

TABLE 6: Disposal at Arcelor Mittal, Contrecoeur

Container No.	Packaging Specification	Contents
496061-3	40ft container	Bulk metals, beams
202087-7	20ft container	Bulk metals, 2 furnaces
213892-1	20ft container	Bulk metals, bar and tubes
287409-6	20ft container	Mechanical equipment
788932-6	20ft container	Genie-Lift parts

TABLE 7: Disposal at BFI, Lachenaie

Container No.	Packaging Specifications	Contents
123392-4	40ft container	Roofing Tarp

November 23, 2015

TABLE 8: Disposal at Arcelor Mittal, Contrecoeur

Container No.	Packaging Specifications	Contents
631492-1	40ft container	Bulk metals, small items in wooden boxes
9223039	40ft container	Mixed metals
6937796	40ft container	Metal sheets
Genie-Lift	Bulk	Genie-lift

TABLE 9: Disposal at BFI, Lachenaie

Container No.	Packaging Specifications	Contents
273080-1	20ft container	Detritus

November 24, 2015

TABLE 10: Disposal at Arcelor Mittal, Contrecoeur

Container No.	Packaging Specifications	Contents
092683-6	40ft container	Metal sheets
182075-2	40 ft container	Bulk scrap metal
Genie-Lift	Bulk	Genie-lift

TABLE 11: Disposal at BFI, Lachenaie

Container No.	Packaging Specifications	Contents
6076337	40 ft container	Detritus

November 25, 2015

TABLE 12: Disposal at Arcelor Mittal, Contrecoeur

Container No.	Packaging Specifications	Contents
Genie-Lift	Bulk	Burnt Genie-Lift
Genie-Lift boom	Bulk	Genie-Lift boom

November 26, 2015

TABLE 13: Disposal at Arcelor Mittal, Contrecoeur

Container No.	Packaging Specifications	Contents
Crushed containers	Bulk	Scrap metal
Crushed containers	Bulk	Scrap metal

November 27, 2015

TABLE 14: Disposal at Arcelor Mittal, Contrecoeur

ContainerNo.	Packaging Specifications	Contents
Crushed containers	Bulk	Scrap metal

All containers used to store the materials were left with Arcelor Mittal for scrap metal. Their poor condition made them non-compliant for re-use. QE, Arcelor-Mittal and BIM made arrangements so that all values for the metal be returned to BIM. QE was contracted to track the weights. Appendix H presents the applicable weight ticket and summarizes the weight per container.

13. FINAL DISPOSAL (HAZARDOUS WASTE)

Container 399892-6 of hazardous waste was transported and disposed of at *Solva-Rec Environnement's* (*Solva-Rec*) disposal centre on November 27, 2015. The 5 wooden crates containing mostly compressed cylinders were also transported to and disposed of by *Solva-Rec* on November 30, 2015. The certificate of disposal is presented in Appendix L. The container was returned to the Port of Valleyfield as it was in good condition.

14. FINAL DISPOSAL (CONTAMINATED SOILS)

The hydrocarbon contaminated soil bags were containerized into 4 separate containers. The bags (also called Quatrex) were destuffed at the Port of Valleyfield. The container numbers are the following:

- 679283-0 (20 ft container);
- 683413-3 (20 ft container);
- 184684-9 (40 ft container);
- 601132-8 (40 ft container);
- 139098-9 (40 ft container).

Once destuffed, the bags were loaded on dump trucks and were transported by Laidlaw to *Horizon Environnement's* disposal facility in Grandes-Piles. The certificate of disposal is presented in Appendix M.

APPENDIX A

WASTE MANAGEMENT PLAN

WASTE MANAGEMENT PLAN FIRE OCCURRED AT ANMAR MAINTENANCE SHOP

MILNE INLET PORT COMPLEX

Privileged and confidential document presented to

**Mr. Guy Laliberté
Construction Manager
Baffinland Iron Mines Corporation**

and

**Mr. Jim Millard
Environmental Manager
Baffinland Iron Mines Corporation**

**2275 Upper Middle Road East, Suite 300
Oakville (Ontario) L6H 0C3**

FINAL REPORT

July 7, 2015


O/Ref.: QE15-113-1

WASTE MANAGEMENT PLAN
FIRE OCCURRED AT ANMAR MAINTENANCE SHOP
MILNE INLET PORT COMPLEX

Privileged and confidential document presented to

BAFFINLAND IRON MINES CORPORATION

Prepared and reviewed by:


Pascal Prud'homme, B.Sc., M.Env.
Project Manager

Approved by:


Benoît Dion, M. Env.
Project Director



FINAL REPORT

July 7, 2015

O/Ref.: QE15-113-1

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LIST OF ABBREVIATIONS

CALA:	Canadian Association for Laboratory Accreditation
CEAEQ:	<i>Centre d'Expertise en Analyses Environnementales du Québec</i>
CO:	Carbon Monoxide
CO ₂ :	Carbon Dioxide
GNUDE:	Government of Nunavut Department of Environment
<i>Guide d'échantillonnage:</i>	<i>Guide d'échantillonnage à des fins d'analyse environnementale, ministère du Développement durable, de l'Environnement et des Parcs, 2008</i>
	<i>Cahier 1: Généralités, 2008</i>
	<i>Cahier 2: Échantillonnage des rejets liquides, 2008</i>
	<i>Cahier 3: Échantillonnage des eaux souterraines, June 2011, revised on February 20, 2012</i>
	<i>Cahier 4: Échantillonnage des émissions atmosphériques en provenance des sources fixes, 2008</i>
	<i>Cahier 5: Échantillonnage des sols, August 2008, revised November 17, 2009</i>
	<i>Cahier 8: Échantillonnage des matières dangereuses, 2008</i>
HAZMAT:	Hazardous materials
IMDG:	International Marine Dangerous Goods Code
LNAPL:	Light non-aqueous phase liquid
MDDELCC:	<i>Ministère du Développement durable, de l'Environnement et Lutte contre les Changements climatiques</i>
MVOC:	Measured Volatile Organic Compound
Nunavut Landfill Guideline:	<i>Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, Government of Nunavut Department of Environment, January 2002, revised in April 2011.</i>
µg:	Microgram
ng:	Nanogram
pg:	Picogram
PPE:	Personal protection equipment
PVC:	Polyvinyl chloride
TCLP:	Toxicity characteristic leaching procedure

1. INTRODUCTION

Following our proposal dated May 26, 2015, Qikiqtaaluk Environmental Inc. (QE) was retained on the same day by Mr. Arvi Narayanan, a representative of Baffinland Iron Mines Corporation (BIM), to proceed with an assessment and a characterization of waste materials following the fire that occurred at the BIM's Anmar Maintenance Shop at the Milne Inlet Port Complex. The main goal was to categorize the waste from the fire and recommend the best packaging and disposal options with respect to the applicable laws, regulations and guidelines. Areas of potential concern were identified by QE prior to the sampling of materials potentially not compatible for the on-site landfill. Potential concerns were mainly burned metallic materials covered with potentially toxic or leachable soot.

The site being studied (hereafter referred to as the "Site") is no longer in use since a fire occurred this winter (2015) and burned almost everything that was stored or used for Anmar's maintenance activities.

The present document provides a brief description of the Site and its surroundings, the methodology used to conduct the current environmental characterization of waste, as well as the findings, conclusions and recommendations of the environmental characterization.

As mentioned above, unless otherwise indicated, the term "Site" refers to the site under study.

The inventory was conducted on May 29, 2015 by Mr. Pascal Prud'homme from QE. Then, soot sampling was completed on May 30 and 31, 2015.

2. OBJECTIVES

The objectives of this study were:

- To inventory non-hazardous and hazardous materials present onsite;
- To determine the categorization of potential hazardous waste (i.e., soot surface samples);
- Shipping and analysis of samples of the potential hazardous waste collected for 1 or more of the following parameters: metals on leachates compared to Column 2 of Table 1 of the GNUDE's *Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage treatment Facilities*, and total concentrations of cyanide, dioxins and furans of Section 3 of the Quebec *Hazardous Materials Regulation*;
- Reporting including the following items:
 - categorization of materials, following laboratory results,
 - packaging instructions for hazardous and non-hazardous waste materials,
 - health and safety procedures for the removal of the identified hazardous waste.

3. SITE LOCATION

The Site, described as a Maintenance Shop at BIM's Milne Inlet installation, has a total surface area of approximately 1,314 m².

The approximate geographical coordinates (central point of the property) in degrees minutes and seconds are:

- 71°53'10" North;
- 80°54'03" West.

The area of the Site is currently used as an industrial port complex for the shipping of iron ore. Figure 1 of Appendix A presents the Site and its regional context.

4. WORK PERFORMED AND METHODOLOGY

4.1 Summary of Work Performed

4.1.1 Preliminary Assessment

Prior to conducting a complete inventory of the Anmar Maintenance Shop and environmental characterization work, a preliminary assessment was done on May 12, 2015 by QE's Special Project Director, Mr. Mario Mercier, who is specialized in industrial decommissioning.

Mr. Mercier's conclusions were that liquid hazardous materials were observed on the ground's surface, sea container floors and surface water. Moreover, various hazardous and non-hazardous materials were burned. Thus, potentially toxic soot must be covering some materials of the shop, especially the walls and ceilings of sea containers and the metal structure for the PVC roof. A major part of the materials found in the former maintenance shop would need to be packed adequately to respect transportation regulations, shipped and disposed of offsite. To plan and coordinate the decommissioning work of the burned maintenance shop, a complete inventory of the hazardous and non-hazardous materials found onsite must be conducted.

4.1.2 Environmental Characterization

According to Mr. Mercier's conclusions, a complete inventory of materials found in the burned shop was conducted on May 29, 2015 by Mr. Pascal Prud'homme, Project Manager-Environment at QE. The inventory, as part of the environmental characterization of burned materials found onsite, allowed the classification of materials relating to their final disposal and the estimated volumes for each type of materials and their disposal. This classification will further help BIM to manage the decommissioning and packaging work of every residual material found onsite. The locations of the hazardous materials are presented in Figure 2 of Appendix A and in the photographic report in Appendix B. The complete inventory table can be consulted in Appendix C of the present document.

Following the inventory, QE representatives targeted some materials to be sampled, mainly soot covering metal sea containers and metal roof structures. Soot sampling was conducted on May 30 and 31, 2015, after soil sampling. The soil environmental characterization report has been produced separately from this study, as required by BIM.

To determine if a material is hazardous, there are currently no standards for environmental sampling of solids and residual materials that exist for Nunavut. Thus, all fieldwork was conducted in accordance with the applicable guidelines established by the *MDDELCC* and the client's requirements. *MDDELCC* guidelines were used because the final disposal of hazardous materials will be done in the province of Quebec.

In order to meet the objectives of the current study, the work performed included completion of the following:

- Inventory of burned materials left onsite, determination of materials to sample and the staking of the Site sampling locations with a yellow paint marker;
- Swab test for soot sampling and collecting solid samples;
- Description of the materials sampled;
- Estimated volume materials present on-site;
- Chemical analysis of the soot and solid samples in accordance with the established analytical program;
- Preparation of a technical report detailing the findings of the Environmental Characterization of Materials, including a Waste Management Plan.

Photographs illustrating some of the materials observed on the Site are presented in the photographic report at Appendix B.

4.2 Sampling Strategy

Sampling locations were selected based on observations made onsite by QE prior to the Environmental Characterization of Materials. The soot sampling strategy focussed on areas where there were specific burned materials, such as urethane insulation, batteries and the PVC roof. The solid sampling strategy focussed on burned materials that could be associated with hazardous waste, such as burned urethane insulation, light liners potentially composed of asbestos and the burned PVC roof.

A total of 5 locations on the Site were chosen to conduct swab tests. Sampling locations were chosen by targeting areas where specific burned materials were identified. Each swab test was performed using a solvent recommended for each targeted parameter; for inorganic compounds (metals and cyanide), water was used to conduct the swab test sampling, whereas acetone was used to conduct swab test sampling for organic compounds (dioxins and furans).

4.2.1 Timeline for the Work Performed

The timeline of the different environmental characterization steps carried out is summarized below:

- May 12, 2015: preliminary assessment of the maintenance shop;
- May 29, 2015: environmental assessment of the maintenance shop to highlight areas of environmental concern and make an inventory of all the residual materials left onsite;
- May 30 and 31, 2015: collection of swab test and solid samples in each of the targeted areas where a specific burned material was identified.

4.2.2 Work Preparation

Before beginning fieldwork, preparation included:

- Logistical coordination between the QE Project Manager and the client representatives onsite;
- Preparation of field equipment and materials, including acetone from BIM's Milne Inlet laboratory.

4.3 Sampling Work

4.3.1 Swab Test

The Environmental Characterization of Materials fieldwork included the collection of swab tests on soot-covered sea container walls and ceilings as indicated in Figure 2 of Appendix A.

All swab tests were conducted using new gauze pads and nitrile gloves for each sample. Swab tests were performed on an approximate surface of 400 cm². Gauze pads used for soot sampling were put in new jars provided by Exova, QE's selected laboratory.

Swab test locations were identified on walls of sea containers using a yellow paint marker.

Throughout the fieldwork, a total of 5 swab tests were collected (3 where urethane insulation was burned, 1 where batteries were burned and 1 from the metallic roof structure where the PVC roof was burned).

4.3.2 Solid Samples

The Environmental Characterization of Materials fieldwork also included the collection of burned solids that could be associated with hazardous materials.

All burned solids were collected using new nitrile gloves for each sample, and a cutter when required (such as the PVC roof sample). Solid samples were put into new, Ziploc-type plastic bags.

Throughout the fieldwork a total of 5 solid samples were collected (3 from completely or partially burned urethane insulation, 1 from burned light liners that could be associated with asbestos and 1 from the burned and melted PVC roof).

4.3.3 Liquid Sampling

No liquid samples were collected because liquids present on the floors of the shop and on the ground were presumed to be hazardous waste.

4.4 Cleaning of Sampling and Measuring Instruments

Since new disposable equipment was used for each sample, no cleaning of equipment was required.

4.5 Sample Containers and Sample Conservation

All soot samples collected were placed in jars provided by an analytical laboratory. All samples were labelled and stored in a cooler with ice bags provided by BIM in order to maintain them at an approximate temperature of 4°C until delivery to the laboratory. Samples were brought at QE's Montreal facility for shipping to Exova Laboratory of Pointe-Claire (Montreal, QC).

Solid samples collected were placed in PVC Ziploc-type bags, labelled and stored in the same cooler as the soot samples.

Samples not selected for chemical analysis are stored by the laboratory for the period of this project. After this period, the samples will be destroyed by the laboratory unless otherwise instructed by an authorized representative of the Client.

Finally, container types and conservation and transport methods for samples were selected in accordance with the guidelines presented in the *Guide d'échantillonnage, Cahiers 1, 3, 5 and 8*.

4.6 Laboratory Analyses

4.6.1 Analytical Program

The Environmental Characterization of Materials' analytical program is based on the environmental issues highlighted during the environmental assessment visit performed on May 29, 2015, before soot and solid sampling.

The choice of analytical parameters for the samples sent for laboratory analysis was established following the environmental assessment visit and based on the nature of the suspected organic and inorganic contaminants.

Soot and solid samples collected during the characterization work were delivered to the analytical laboratory as promptly as possible. The analytical laboratory chosen is accredited by the *CEAEQ* for all the analyses performed for categorization for disposal purposes in Quebec. Certificates of accreditation are available upon request. Furthermore, the analytical reports received are verified and signed by a member of the Association of the Chemical Profession of Ontario or the *Ordre des Chimistes du Québec*, according to each type of analysis conducted.

The samples selected were analyzed using the methods presented in Table 1, below. The detection limits associated with each parameter analyzed are also presented in Table 1.

TABLE 1: Analytical Program and Detection Methods

Matrix	Analysis	Method	Detection Limit	
Solid	Dioxins and furans	EC-1/RM/19	pg/wipe	Variable
	Cyanide	EPA600/479.020,335.2	mg/kg	1
Leachate	Metals (mercury, arsenic, barium, cadmium, chromium, lead, selenium, silver, uranium and zinc)	MA200-Met1.2	mg/L	Variable

From a total of 5 soot and 5 solid samples collected, 3 soot samples and 1 solid sample were selected for laboratory analysis. Table 2, below, presents the number of analyses performed on soot and solid samples for each parameter.

TABLE 2: Parameters Analyzed per Matrix (Number of Analyses)

Parameters	Metals (from TCLP)	Dioxins and Furans	Cyanide
Soot	3	1	1
Solid	1	-	1

It should be noted that samples US-1, US-2 and US-3 of urethane soot were all put together to form 1 composite sample, to enable the laboratory to respect the analytical method for TCLP. This procedure was repeated for burned urethane samples BU-1, BU-2 and BU-3.

4.6.2 QA/QC Program

All projects completed by QE include a QA/QC program in order to verify the reliability, precision and accuracy of the fieldwork analytical results.

4.6.2.1 Onsite

Several precautions were taken during the course of the fieldwork in order to eliminate the risk of contamination from equipment and sampling instruments and to ensure effective and representative sampling. The precautions taken, particularly during collection, transport, identification and conservation of samples included:

- The application of standardized work procedures through the continuous training of field technicians for the various standardized methods of sample collection and management;
- Constant supervision of employees by management;

- Use of disposable nitrile gloves for each sample collected;
- Adequate cleaning of equipment, containers and sampling instruments before collecting each sample;
- Careful use and protection of the appropriate sampling containers and measuring instruments during sample collection, transport and conservation;
- Precise identification and labeling of all samples shipped to the laboratory accompanied by a completed and signed chain of custody form;
- Shipping of samples to the laboratory as promptly as possible, where possible;
- Conservation and storage of samples according to the standardized methods recommended by the *MDDELCC*.

No field duplicates or blanks were used during soot and solid sampling because no significant external sources of contamination (dust, atmospheric emissions, VOCs etc.) were identified on the Site in the vicinity of the sampling locations. Finally, no trip blanks were used, as all samples were conserved in hermetically sealed containers during their transport between the Site and the laboratory.

4.6.2.2 *At the Laboratory*

Exova applies its own QA/QC in accordance with the requirements of CALA and *CEAEQ* in order to provide analytical results of the highest possible quality and reliability. This program includes, among others, the following elements:

- Laboratory blanks;
- Laboratory duplicates;
- Control/reference samples;
- Certified reference materials;
- Sample spiking;
- Surrogates (organics).

A summary of the laboratory's internal QA/QC program is available upon request.

5. RESULTS

The results of the present Environmental Characterization of Materials for the Anmar Maintenance Shop are summarized in Table I of Appendix C as per the certificates of analysis, included in Appendix D.

5.1 Interpretation of the Results

According to these results, soot and solids sampled would not be associated with hazardous materials with respect to leachate contents in metals or total concentrations of cyanides, with the exception of the soot found on the walls and ceiling of Seacan #BSC-3, represented by sample BB-1, where batteries were burned and of the soot found on the walls and ceilings of other burned sea containers, as represented with composite sample US-1, where urethane insulation was partially to completely burned.. Sample BB-1 showed a leachate concentration of 0.517 mg/L for cadmium, exceeding the leachate criterion of 0.5 mg/L. Other results for BB-1 were below leachate criteria.

Sample US showed a leachate concentration of 116 mg/L for chromium, exceeding the leachate criterion of 5 mg/L. Other results for the US were below leachate criteria.

Thus, hazardous materials onsite are composed of burned materials already known to be hazardous (such as burned batteries), liquids (LNAPL and stains) observed on the ground and soot covering the inside walls and ceiling of Seacan #BSC-3 and other insulated Seacans. With respect to the Nunavut Landfill Guideline, these materials cannot be disposed of in a local landfill and would require special attention with respect to the hazardous materials or dangerous goods regulation and guideline (storage, shipping and disposal).

5.2 Specific Interpretation of Results for Dioxins and Furans

A swab test confirms whether a surface is acceptable for cutaneous contact. At 64 pg/400 cm² (analytical result for Sample Rss-1), the value equates to 1.6 ng/m² (64 pg x 1,000 ng/pg)/0.04 m², or 15 times less than the criteria of 25 ng/m².

If a sea container wall is 2 mm thick and the metal has a relative density of 7, and if there are no dioxins or furans on the other side, the weight to weight concentration would be:

$$\frac{0.0016 \mu\text{g}/\text{m}^2}{(0.002 \text{ m} \times 7000 \text{ kg}/\text{m}^3)} = \frac{0.0016 \mu\text{g}/\text{m}^2}{14 \text{ kg}/\text{m}^2} = 0.0001 \mu\text{g}/\text{kg}$$

Therefore, no problem exists regarding the level of dioxins and furans with respect to exposure by cutaneous contact or their classification as hazardous materials with respect to the Quebec Hazardous Materials Regulation.

6. ESTIMATED VOLUMES AND MANAGEMENT PLAN

Most of the materials will be shipped offsite in 20-foot sea containers. As such, QE's management recommendations include volume optimization operations.

In the sections below, each type of materials is treated individually in order to provide BIM with helpful management plan for the various materials present on the Anmar Maintenance Shop site. QE's procedures for health and safety and hazardous waste packaging and labelling are presented in Appendix E.

6.1 Metal Materials or Scrap Metal

6.1.1 Description and Inventory

Metal materials onsite are composed of equipment parts, heaters and structures from the former maintenance shop building (sea containers and steel roof trusses). It should be noted that a major part of the sea containers found on-site were partially to completely burned (14* 40-foot and 2* 20-foot). However, 2* 40-foot and 2* 20-foot sea containers are still in good condition and could be used for the offsite shipment of the Anmar shop decommissioning materials. Equipment parts, such as washers, bolts, nuts, various beams and poles, oil and air filters and racks were partially or completely burned, but were not covered by soot.

Nevertheless, other metal materials were covered by soot and were completely or partially burned. These soot-covered materials include electric air blowers (heaters) and structure components, such as sea containers and metal beams installed to support the PVC roof. The analytical results of soot sampled on these materials show that the soot is not a hazardous waste with respect to the Nunavut Landfill Guideline and could be disposed of offsite in any authorized scrap metal facility, with the exception of soot found on the walls and ceiling of Seacan #BSC-3, which contains burned batteries and on the walls and ceilings of other burned sea containers, which contain partially to completely burned urethane insulation.

6.1.2 Shipping and Disposal

Because most metal materials are not considered hazardous waste, they can be shipped to, and disposed of as a non-hazardous waste material, in an authorized metal recycling facility. In order to adequately ship metal materials to the disposal facility, large components (sea containers, Genie lifts) should be cut with a plasma torch, a grinder or a mechanical shear. The mechanical shear should be favoured over other cutting tools, as the plasma torch and the grinder require special PPE, even if the material is not considered hazardous. Once cut, metal materials should be crushed down, where possible, to optimize their volume for shipping. Urethane insulation found on the walls of some of the sea containers is

not a concern for disposal. QE has consulted with a scrap metal representative from American Iron and Metal (AIM) and the urethane insulation coating will not have to be removed prior to disposal and can remain fixed to the walls of insulated containers. An industrial shredder at the scrap metal facility will mechanically separate the two components. Also, metals containing non-hazardous waste soot can be disposed of as is without any removal of the soot. However, soot from burned urethane insulation is not suitable for the on-site landfill and as such the option of off-site disposal in authorized recycling facilities will have to be evaluated.

Electric air blowers should be inspected to confirm the presence or absence of refractory brick. If so, the refractory brick should be removed and disposed of separately. Further laboratory analysis should follow to determine the categorization of the brick for packaging and disposal purposes. Also, air blowers found in insulated sea containers will have to be disposed of with other metal components covered with chromium contaminated soot.

A large part of the small components found in the shop is mixed with other residual materials, such as electric components and ash (electrical and metal components were stored on wooden racks that were burned). Small metal components should be sorted from other mixed residual materials, if reasonably possible, prior to being packaged in sea containers. Solutions for sorting small components could be a magnet, hand-picking operations or with the use of a small loader with a bucket. Mixed residual materials, other than metal, could be packaged in the same container. We recommend packaging small metal components in small bulk containers (i.e., 1 m³ wooden crate) prior to packaging them directly in the sea containers. With the use of a tilt chassis especially for the off-loading of sea containers, the contents would be dropped off directly in the scrap metal facility yard. The use of this trucking system will avoid the de-stuffing costs at the port or the disposal facility.

TABLE 3: Shipping and Disposal of Metal Components

Description	Materials Preparation	Proposed Inner Packaging ¹	Disposal Option
All sea containers (with the exception of #024092, 300535, 693779 and 039667) ²	<ul style="list-style-type: none"> Cut in pieces with a mechanical shear or a manual grinder or plasma torch. Prior to cut with manual equipment, specific FLRA and health and safety protocol should take place (see Appendix E, for specific JSA procedures); If possible, pieces must be crushed down. 	In 20-foot sea containers with other compatible hazardous waste. ³	Recycled in an authorized scrap yard facility

Description	Materials Preparation	Proposed Inner Packaging ¹	Disposal Option
Specific procedures per container (prior to being declassified)	<ul style="list-style-type: none"> Removal of oil from floor of containers #222174, #901030, #694267, #693779; Removal of paint from floor of container #110709; For BSC-3 and methane insulated sea containers, each part of container covered of contaminated soot should be packaged with a thick polythene sheet adequately wrapped with a rigid adhesive tape. 	<ul style="list-style-type: none"> Store used absorbent sheet for oil and paint removal in non-UN open-top drums; Cleaned wood could be used to package other material or be packaged in a sea container dedicated to wooden debris; Specially wrapped cadmium and chromium contaminated container parts should be packaged with other compatible hazardous waste. 	Reused as packaging materials or recycled in an authorized facility
Heavy equipment (3 Genie lifts)	Fluid drainage prior to dismantling.	<ul style="list-style-type: none"> Strap all moving parts; Package in order to be moved with a forklift or a crane. 	Recycle in an authorized scrap yard facility.
Air blower (heater)	Fluid drainage and removal of refractory brick, if present, prior to dismantling ⁴	<ul style="list-style-type: none"> Strap all moving parts and place the equipment in a sea container; If stored in a burned sea container, specially wrapped chromium contaminated heater parts should be packaged with other compatible hazardous waste. 	Recycle in an authorized scrap yard facility.
Miscellaneous metal parts	Sorting and segregation from other mixed materials with an excavator/loader equipped with a magnet/bucket or by hand.	Bailed, if possible, or stored in 1 m ³ crates.	Recycle in an authorized scrap yard facility.

1. Taking into consideration that all materials will be placed in a 20 ft sea container.
2. These sea containers can be shipped as is or used to carry materials for off-site disposal.
3. Equipment inside the 20-foot sea containers must be positioned and braced in compliance with the sealift company's packaging guidelines (<http://www.arcticsealift.com/>).
4. The refractory brick will have to be disposed of separately from other non-hazardous waste. Laboratory analyses may be required for their categorization.

6.3 Hazardous Materials

6.3.1 Description and Inventory

The majority of the hazardous materials found on-site are partially burned. As such, hazardous materials still in their original containers will need to be repackaged before shipping, as well as some of the liquid hazardous materials that leaked onto the sea container floors or onto the ground. Here is a list of hazardous materials observed onsite:

- Oil, lubricants and grease in 5-gallon containers or in 1 tote tank;
- Paints and solvents in 1-pint, 1-gallon and 5-gallon containers;
- Propane and welding gas cylinders in 20 lbs to 100 lbs bottles;
- Fire extinguishers;
- Sodium or mercury light bulbs;
- Used oil filters;
- Aerosol cans;
- Batteries and ash from burned batteries;
- Anticorrosive protection agent.

Soot found on the walls and ceiling of sea container BSC-3 is considered hazardous according to the *Nunavut Landfill Guideline*. Specific procedures relating to contaminated soot are discussed in Section 6.1.2.

Please note that the locations of the hazardous waste are presented in Figure 2 of Appendix A of this report.

6.3.2 Shipping and Disposal

Hazardous materials require specific packaging for shipping and disposal. Table 4 below shows the shipping options for each type of hazardous material.

TABLE 4: Hazardous Materials Shipping and Disposal

Description	Material Preparation	Proposed Inner Packaging ¹	IMDG Requirements	Disposal Option
Oil, lubricants and grease in 5-gallon cans or in 1 tote tank.	<ul style="list-style-type: none"> • Transfer any liquid to a tote tank or a close-top drum; • Clean partially burned tote tanks with absorbent sheets. 	<ul style="list-style-type: none"> • Store cleaned tote tanks in the metal parts container and empty 1 pint to 5 gallon cans into non-UN Quatrex-type bags; • Liquids: in a tote tank or 	Not IMDG regulated.	Disposal offsite in an authorized facility.

Description	Material Preparation	Proposed Inner Packaging ¹	IMDG Requirements	Disposal Option
		non-UN drums; <ul style="list-style-type: none"> Oily absorbent sheets: in a close-top non-UN drum. 		
Paint and solvent in 1 pint, 1 gallon and 5 gallon cans.	Separate closed and opened cans for packaging.	<ul style="list-style-type: none"> Package closed cans in a UN Quatrex-type bag; Package opened or leaking cans in close-top UN drums. 	UN 1263, class 3 sticker	Disposal offsite in an authorized facility.
Propane and welding gas cylinders in 20 lbs to 100 lbs bottles.	Classification per type of gas and segregation per category (avoid packaging on the same skid as flammable gas or oxidizers)	Metal racking customized for gas cylinders or wooden crates (cylinders stored with valves on top).	<ul style="list-style-type: none"> Propane : UN 1978, class 2.1 sticker; Acetyl: UN 1001, class 2.1 sticker; Oxygen: UN 1072, Class 2.2 (5.1) sticker 	Disposal offsite in an authorized facility.
Fire extinguishers.	-	In non-UN Quatrex-type bags or in wooden crates.	Fire extinguisher: UN 1044, class 2.2 sticker.	Disposal offsite in an authorized facility.
Sodium or mercury light bulbs.	-	In UN Quatrex-type bags or open-top UN plastic drums.	Mercury bulbs: UN 2024, class 6.1 sticker.	Disposal offsite in an authorized facility.
Used oil filters.	-	Open-top non-UN drums or non-UN Quatrex-type bags.	Not IMDG regulated.	Disposal offsite in an authorized facility.
Aerosol cans.	-	Open-top UN drums or UN Quatrex-type bags.	Aerosol: UN 1950, class 2.1 sticker.	Disposal offsite in an authorized facility.
Batteries and ash from burned batteries.	-	UN certified battery wrangler.	Batteries: UN 2794, class 8 sticker.	Disposal offsite in an

Description	Material Preparation	Proposed Inner Packaging ¹	IMDG Requirements	Disposal Option
				authorized facility.
Anticorrosive protection agents.	Already in a wooden crate.	Close the top and strap the crate or package in a non-UN Quatrex-type bag/drum.	Not IMDG regulated.	Disposal offsite in an authorized facility.

1. Taking into consideration that all materials will be placed in a 20 ft sea container.

6.3.3 Specific Procedures for the Cleaning of Sea Containers

Sea containers used for the construction of the maintenance shop were impacted by the fire that occurred this winter. Some walls and ceilings are partially or completely covered with soot, some wooden floors are partially or completely burned or are slippery due to the presence of oil, grease or paint.

Because soot on the roof structure is not considered hazardous, no specific procedure has to be taken by workers to package cut trusses. The specific procedure for sea containers is discussed in Section 6.1.2.

Residual parts of burned wooden floors that are not affected by liquid hazardous materials can be removed from sea containers prior to the cutting of the metal walls, ceilings and floors and packaged with other miscellaneous waste.

Wooden floors that are affected by liquid hazardous materials (oil, grease and paint) must be packaged separately from the other container wooden floors, because they are considered to be a hazardous material. The 2 packaging options are:

- Removal of the wooden floor and packaging into Quatrex-type bags, without other preparation or conditioning operations;
- Removal of the liquid hazardous materials by using a granular absorbent. The oily absorbent must then be packaged in non-UN open-top drums or Quatrex-type bags. Note that the Quebec regulations allow up to 3% of oil and grease on a solid. That said, traces of oil or grease can be visible and the container or materials can be declassified from being hazardous waste. According to Nunavut regulations, no criteria have been defined for the Process Residuals parameter (leachate on solid waste). No other guideline is available for oily surface materials in Nunavut. As such, the Quebec threshold for oil and grease content will be used to sort materials.

6.4 Other Materials

6.4.1 Description and Inventory

This section includes materials that cannot be recycled or do not require special disposal, as per hazardous waste. These materials do not contain any hazardous materials. Other dry materials are listed below:

- Ash from burned wooden materials;
- Parts of the PVC roof and 3 PVC tarps (intact or partially burned);
- Various wooden parts (intact or partially burned);
- Non-metal electrical components (intact, partially or completely burned);
- Burned wooden and aluminum windows and doors;
- Rubber pipes (intact or partially burned);
- Various clothing (intact or partially burned, frequently greasy);
- Intact Styrofoam-insulated liners;
- Concrete bags or pails (not burned, but the quality is no longer good as the concrete is moist).

6.4.2 Shipping and Disposal

Other materials could be disposed of in the local landfill or offsite. Table 5 describes QE's recommendations for offsite preparation, packaging and disposal.

TABLE 5: Shipping and Disposal of Other Materials

Description	Material Preparation	Proposed Inner Packaging ¹	Disposal Option
Ash from burned wooden materials	<ul style="list-style-type: none"> • Because of their light weight, ash must be handled by workers equipped with adequate PPE against dust (glasses, mask); • Ash must be sampled (composite samples) once packaged in open-top drums or Quatrex-type bags 	Non-UN Quatrex-type bags or open-top drums.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.

Description	Material Preparation	Proposed Inner Packaging¹	Disposal Option
Parts of the PVC roof and 3 PVC tarps (intact or partially burned).	Adequately rolled and secured.	Can be placed in sea containers without specific packaging.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.
Various wooden parts (intact or partially burned).	Wooden parts in good condition must be reused for packaging of other materials.	Can be placed in a wooden crate or pail or reused for packaging other materials.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.
Non-metal electrical components (intact, partially or completely burned).	-	Wooden crate or non-Un open-top drums.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.
Burned wooden and aluminum windows and doors.	-	Wooden crate.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.
Rubber pipes (intact or partially burned).	-	Wooden crate or non-Un open-top drums	Suitable for on-site landfill and/or off-site disposal in an authorized facility.
Various clothing (intact or partially burned, frequently greasy).	-	Wooden crate or non-Un open-top drums	Suitable for on-site landfill and/or off-site disposal in an authorized facility.
Intact Styrofoam-insulated liners.	Already in pail in a PVC bag.	Reuse onsite or complete packaging with wooden crate for shipment offsite.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.

Description	Material Preparation	Proposed Inner Packaging ¹	Disposal Option
Concrete bags on pails (not burned, but quality is no longer good as the concrete is moist).	A part of the wooden crate was burned. Complete wooden crate and strap.	Wooden crate.	Suitable for on-site landfill and/or off-site disposal in an authorized facility.

1. Taking into consideration that all materials will be placed in a 20 ft sea container.

6.5 Volumes

The complete materials inventory conducted on-site allowed QE to estimate the approximate volumes for each category of materials. The following table presents each type of material. This table can be used to plan the packaging materials required for shipment offsite.

TABLE 6: Estimated Volumes of Materials

Material ¹	Approximate Volume
Cut sea containers covered with contaminated soot	120 m ³
Air blowers (8 units) potentially covered with contaminated soot	37 m ³
Steel roof structures	55 to 65 m ³
Empty tote tanks (5 units)	1 m ³
Heavy equipment (3 Genie lifts with nacelle dismantled)	175 to 200 m ³
Partially burned PVC roof	30 to 35 m ³
Ash (mostly mixed with various materials and contained in sea containers #679514, #594334 and #300515 and covering the ground)	15 to 20 m ³
H-beams tables for machining operations (still in good condition)	8 to 10 m ³
Other miscellaneous metal parts	25 to 30 m ³
Hazardous waste (excluding contaminated soils)	6 to 8 m ³
Non-hazardous waste (plastics, wood, clothes, etc.)	5 m ³
Total	500 m³

1. Batteries and fluids from heavy and light equipment should be removed prior to equipment packaging and included with other hazardous materials.

7. CONCLUSIONS AND RECOMMENDATIONS

QE was retained by Baffinland Iron Mines Corporation (BIM) to proceed with an assessment and a characterization of waste materials following the fire that occurred at the Anmar Maintenance Shop at BIM's Milne Inlet Port Complex. The principle objective was to categorize the waste from the fire, and any other materials found on-site, and recommend the best options for packaging and disposal with respect to the applicable laws, regulations and guidelines. Potential areas of concern were identified by QE prior to the sampling of materials potentially incompatible for the on-site landfill. Conceivable concerns were mainly the burned metallic materials covered with soot (some of which is considered as hazardous waste) and hazardous materials in partially to completely burned containers.

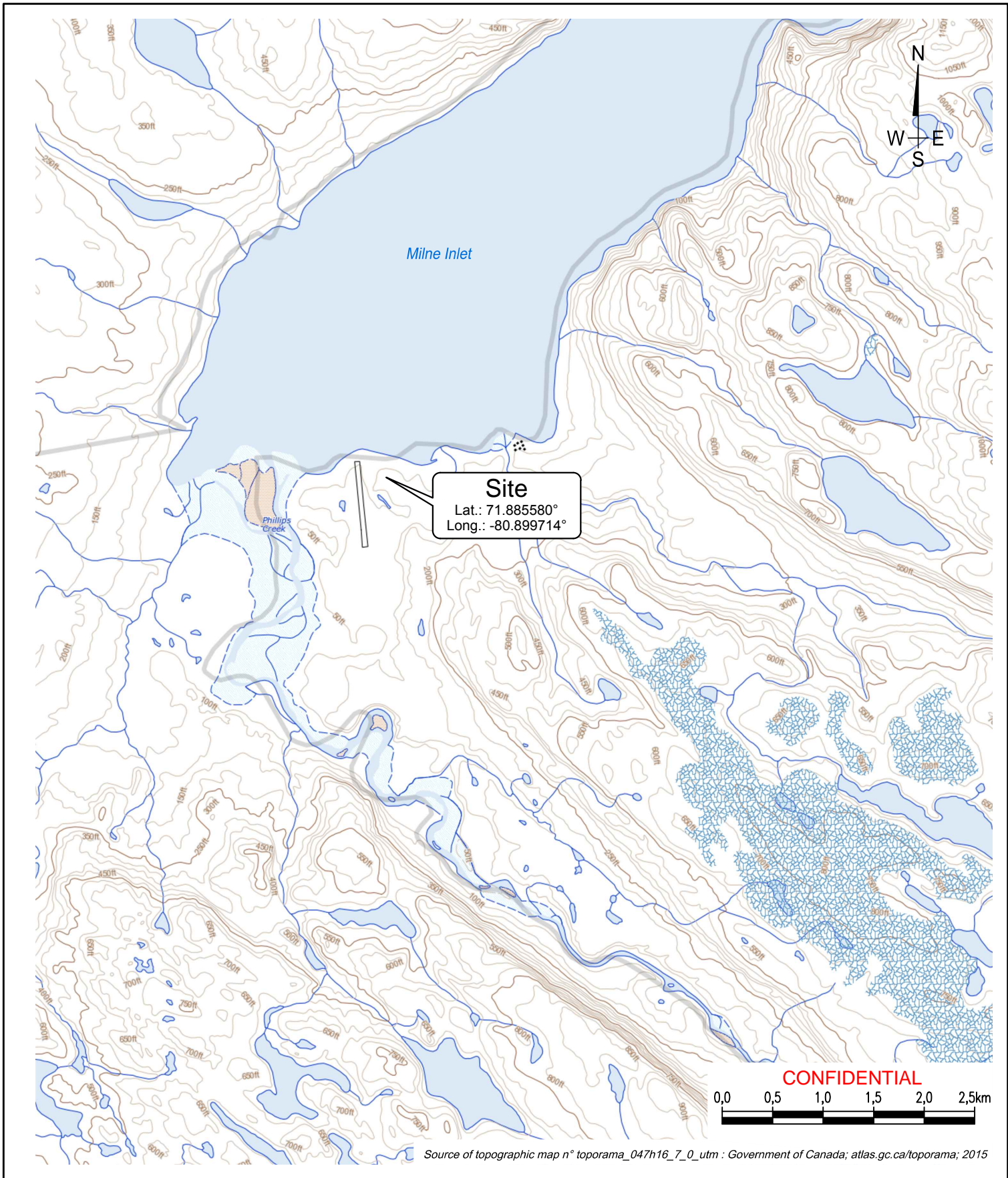
The approximate volume of materials to be dismantled, sorted or packaged is 500 m³. Of this total volume, a volume of 6 to 8 m³ of hazardous waste and approximately 150 m³ of metal components covered with contaminated soot must be packaged and disposed of offsite in an authorized facility. Approximately 15 to 20 m³ of ash would need to be investigated further by collecting composite samples to determine whether they can be disposed of in an on-site landfill or offsite in an authorized facility. For the remaining materials, it is BIM's decision whether the materials are disposed of in the on-site landfill or shipped offsite for disposal in a landfill or for recycling. From QE's perspective, because of possible return value on the scrap metal and BIM's corporate liability, it is recommended that the materials be disposed of offsite in authorized facilities.

QE also recommends the following action plan:

- Initiate discussions regarding the final disposal of materials (on-site landfill or off-site disposal);
- Implement QE's fieldwork recommendations;
 - mobilize a HAZMAT technician for the segregation, classification and packaging of identified hazardous waste,
 - under the supervision of an environmental field technician, prepare the non-hazardous materials for the on-site landfill or off-site disposal,
 - once everything is removed, a soil clean-up must be conducted to remove stains (oil, paint, etc.) and residual materials such as ash and small metal parts,
 - submit a clean-up report, including a summary of the work conducted and presenting the weight tickets and certificates of disposal or recycling.

APPENDIX A

FIGURES



Presented to:

**BAFFINLAND IRON MINES
CORPORATION**

Property located at:
*Anmar Maintenance Shop
Milne Inlet*

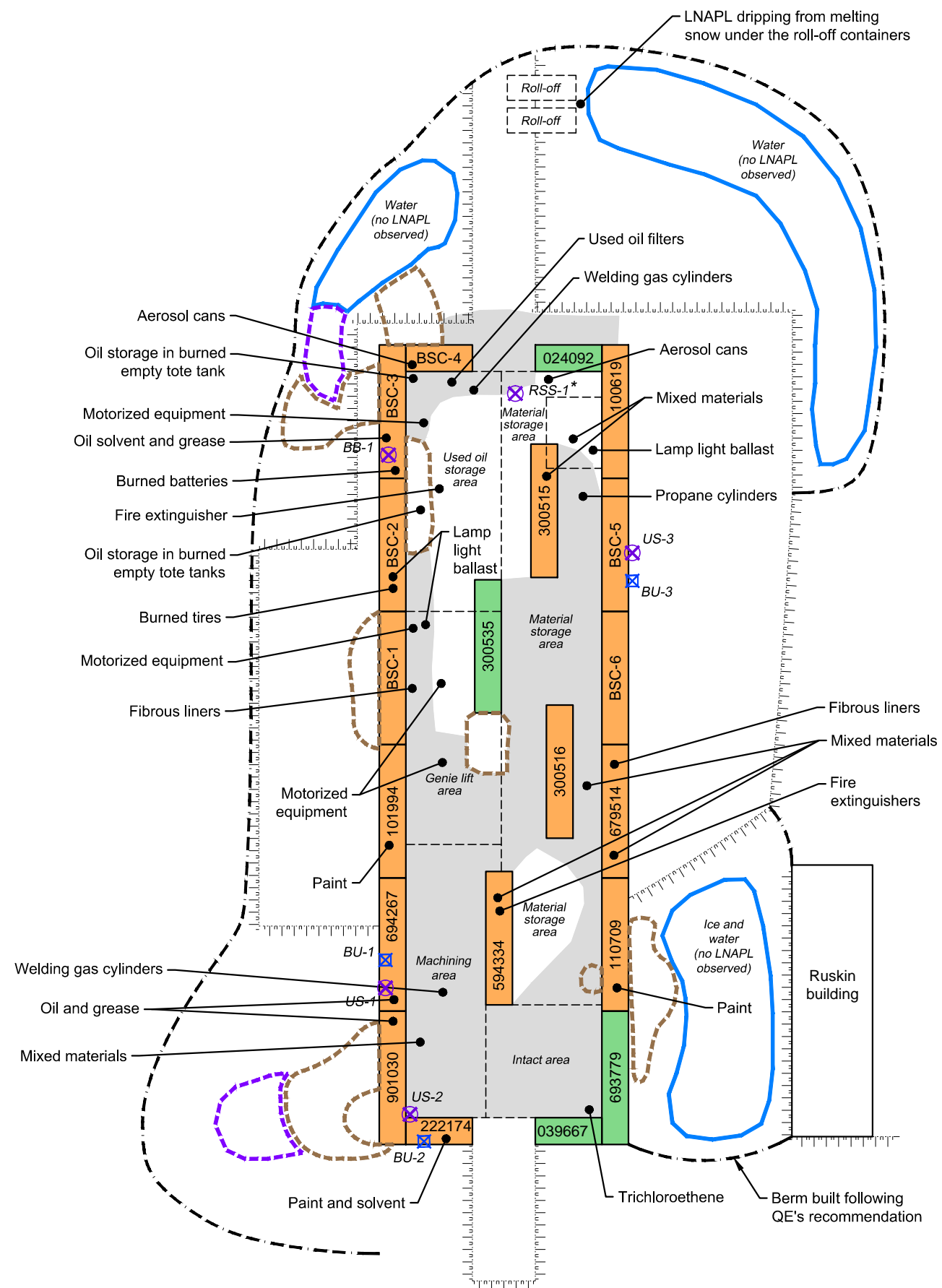
Figure 1

Regional Site Location

WASTE MANAGEMENT PLAN

Scale: As shown	Design date: 2015-06-10	Revision date: 2015-07-08
Drawn by: H. Longval	Verified by: P. Prud'homme	Approved by: B. Dion
Project no.: QE15-113-1	Drawing no.: QE15-113-1-02	Layout Geodetic reference: A UTM/NAD83 Zone 17






This document shall not be used for construction, building or installation purposes.




Legend


US-1 Swab test
(Qikiqtaaluk environmental, May 2015)

 ^{BU-1} Solid sampling points
(Qikiqtaaluk environmental, May 2015)


— — — Berm (approximate location)

<div style="display: flex; align-items: center;"> <div style="width: 100px; height: 100px; border: 1px solid black; margin-right: 10px;"></div> <div> <p>Embankment slope (approximate location)</p> </div> </div>
--

 Approximate impacted area with paint stains
or oil stains on soil surface

 Light Non-Aqueous Phase Liquid (LNAPL)

Intact Seacan

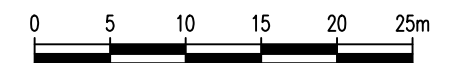
 Burned or partially burned Seacan

Frozen soil surface on May 30, 2015

- * Swab test on roof steel structure

Source:

- *Qikiqtaaluk environmental; swab test locations are based on field observations; May 2015.*



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Figure 2
Site Plan and Sampling Point Locations

WASTE MANAGEMENT PLAN

Presented to:

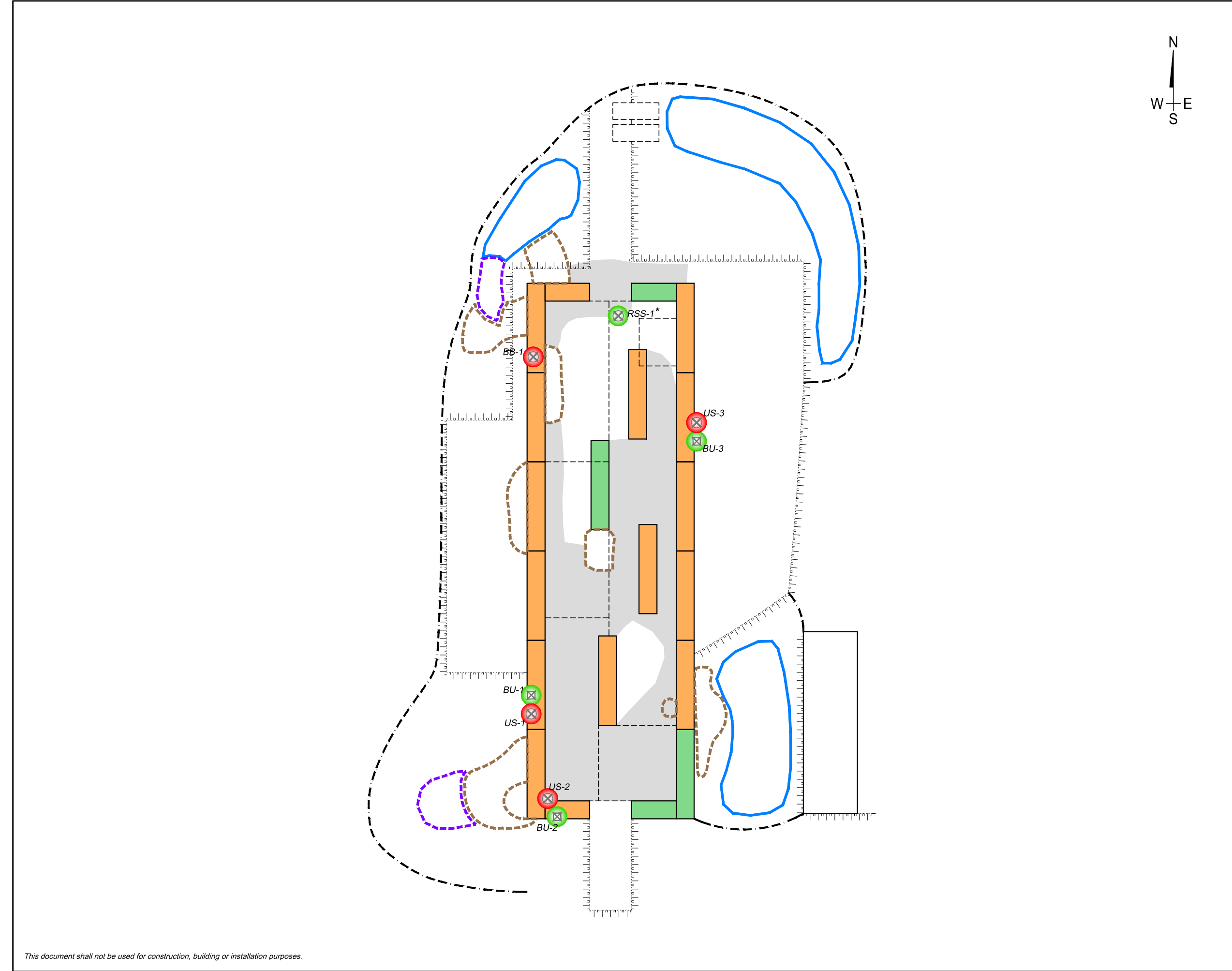
**BAFFINLAND IRON MINES
CORPORATION**

Property located at:

Anmar Maintenance Shop
Milne Inlet

Scale:	Design date:	Revision date:
As shown	2015-06-10	2015-07-08
Drawn by:	Verified by:	Approved by:
S. Zumeri	P. Prud'homme	B. Dion
Project no.:	Drawing no.:	Layout:
QE15-113-1	QE15-113-1-02	B
		Geodetic reference:
		None
		None





Legend

- US-1**
Swab test
(Qikiqtaaluk environmental, May 2015)
- BU-1**
Solid sampling points
(Qikiqtaaluk environmental, May 2015)
- Berm (approximate location)
- Embankment slope (approximate location)
- Approximate impacted area with paint stains or oil stains on soil surface
- Light Non-Aqueous Phase Liquid (LNAPL)
- Intact Seacan
- Burned or partially burned Seacan
- Frozen soil surface on May 30, 2015
- * Swab test on roof steel structure

Classification Code (residual materials)

- Concentration below the GIWD or Q2, r.32 criteria
- Concentration above the GIWD or Q2, r.32 criteria

GIWD : Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, Government of Nunavut, Department of Environment, January 2002, revised in April 2011.

Q2, r.32 : Quebec Regulation respecting the Hazardous Materials, 1997, updated on september 1, 2013

Source:

- Qikiqtaaluk environmental; swap test locations are based on field observations; May 2015.

0 5 10 15 20 25m

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Figure 3
Analytical Results of Swab test and solid samples

WASTE MANAGEMENT PLAN

Presented to:

BAFFINLAND IRON MINES CORPORATION

Property located at:
Anmar Maintenance Shop
Milne Inlet

Scale:	As shown	Design date:	2015-06-10	Revision date:	2015-07-08
Drawn by:	D. Grant	Verified by:	P. Prud'homme	Approved by:	B. Dion
Project no.:	QE15-113-1	Drawing no.:	QE15-113-1-02	Layout:	C
			Geodetic reference:	None	None

Qikiqtaaluk environmental
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APPENDIX B

PHOTOGRAPHIC REPORT



Photo 1

Overview of the
burned Anmar
Maintenance Shop
that burned.



Photo 2

View of paint and
solvent containers in
Seacan #222174.



Photo 3

View of a partially burned tote tank containing oil in Seacan #901030. Oil is covering the wooden floor.



Photo 4

View of partially burnt 5-gallon containers filled with oil and grease in Seacan #901030.



Photo 5

View of burnt light
ballasts in Seacan #
BSC-2.



Photo 6

View of the burnt hot
air blower (heater) in
Seacan # BSC-2.



Photo 7

View of burnt battery ash in Seacan # BSC-3.



Photo 8

View of burnt 1-gallon containers in Seacan # BSC-3 which presumably contained lubricant, grease or solvent.



Photo 9

View of new oil filters
that were burned in
Seacan # BSC-3.



Photo 10

View of burnt aerosol
cans in Seacan
BSC-4.



Photo 11

View of mixed materials (wood ash, small metal parts and electrical components) inside Seacan # 679514. Thickness of mixed materials is between 0.25 and 0.5 m.



Photo 12

View of partially burned 5-gallon containers of blue paint in Seacan #110709. Blue paint leaked out of both sides of the Seacan.



Photo 13

View of intact area inside, near the southeast corner of the shop.



Photo 14

View of frozen ash and soot on the ground in the material storage area, in the eastern area of the shop.



Photo 15

View of burnt 100-lbs propane cylinders in the materials storage area.



Photo 16

View of partially burned mixed materials in the materials storage area (explosion-proof lights, metal parts, aerosol cans, etc.).



Photo 17

View of mixed materials (ash, metal parts, tools, etc) in the machining area near the southwest corner of the shop.



Photo 18

View of electrical components. Concave liners are made of fibrous materials that could be associated with asbestos in the western area of the shop, near the Genie-Lift area.



Photo 19

View of partially to completely burnt lifting machinery in the western area of the shop, near the Genie-Lift area.



Photo 20

View of the burnt hydraulic unit in the western area of the shop, near the Genie-Lift area.



Photo 21

View of partially to completely burnt materials (oil tote tanks, fire extinguishers, tarps, light bulbs and tubs) and of ash and ABC powder on the ground in the used oil area near the northwest corner of the shop.



Photo 22

View of burnt equipment in the used oil area near the northwest corner of the shop.



Photo 23

View of burnt urethane (Sample BU-1) and urethane soot (Sample US-1) sampling location in Seacan #694267.



Photo 24

View of the partially burnt PVC tarp composing the former roof near the intact area in the southeast of the shop.



Photo 25

Wooden crates
containing cylinders.



Photo 26

Boom from Genie-Lift.



Photo 27

Genie-Lift 2.



Photo 28

Genie-Lift 1.



Photo 29

Burned Genie-Lift.



Photo 30

Wrapped crushed
containers.



Photo 31

Crushed containers.

APPENDIX C

TABLES

- Solids inventory of May 29, 2015
- Analytical results sampled on May 30 and 31, 2015

Description	General Condition/Health and Safety Considerations	Foam Insulation (according to QE observations)	Frequently Seen HAZMAT													Semi-burned Rubber Pipes (drum)	Ash (drum)	Hazardous ash (drum)	Burned Window Frames (wood & aluminum)	Burned Steel Doors
			Adhesive (steel 5 gal.)	Paint or Solvent (steel 5 gal)	Paint or Solvent (steel 1 gal)	Paint, Solvent or Oil (PVC 1 gal)	Paint or Solvent (PVC 1/2 gal)	Paint or Solvent (steel 1 pint)	Grease (PVC 5 gal)	Oil (PVC 5 gal)	Aerosol Cans (drum)	Burned Oil Filters (drum)	Semi-melted Tote with 300 L of used oil	Asbestos Liner	Semi-burned Batteries					
222174	<ul style="list-style-type: none">Partially burned, presence of soot on the walls and the ceiling;H&S: Solvent and paint odour;H&S: Slippery floor, presence of greasy soot on the complete surface of the floor;Darkening of the main part of the Seacan.	Yes	1	21	17	-	27	6	-	-	-	-	-	-	-	-	-	-	-	5
901030	<ul style="list-style-type: none">Completely burned;H&S: Slippery floor, presence of oil on the complete surface of the floor;Spill evidence outside.	Yes	-	-	-	-	-	-	4	3	-	-	1	-	-	-	-	-	24	-
694267	<ul style="list-style-type: none">Completely burned	Yes	-	-	-	-	-	-	-	3	-	-	-	-	-	-	0.2	-	-	-
101994	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor;H&S: large steel sheets and racks constrain access;Spill evidence outside.	Yes	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
BSC-1	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor;H&S: a lot of electrical wires around heater.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BSC-2	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
BSC-3	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor;H&S: steel racks not well fixed and constrain access;H&S: large amount of oil filter on the ground;H&S: north part of Seacan is dark (no light and no opening for daylight);Spill evidence outside.	No	-	-	-	14	-	-	-	-	-	6	-	-	-	-	-	2	-	-
BSC-4	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor;H&S: steel racks not well fixed and constraint access;H&S: the complete Seacan is dark (no light and no opening for daylight).	No	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
024092	<ul style="list-style-type: none">Not burned, in good condition.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
100619	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-
BSC-5	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor.	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BSC-6	<ul style="list-style-type: none">Completely burned;H&S: no wooden floor.	Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
679514	<ul style="list-style-type: none">Completely burned;H&S: floor is not visible, because of the amount of ash and burned equipment and parts (2 to 3' thickness);Dark in all the Seacan.	No	-	-	-	-	-	-	-	-	-	-	-	30	>4	-	-	-	-	-

Frequently Seen HAZMAT																				
Description	General Condition/Health and Safety Considerations	Foam Insulation (according to QE observations)	Adhesive (steel 5 gal.)	Paint or Solvent (steel 5 gal)	Paint or Solvent (steel 1 gal)	Paint, Solvent or Oil (PVC 1 gal)	Paint or Solvent (PVC 1/2 gal)	Paint or Solvent (steel 1 pint)	Grease (PVC 5 gal)	Oil (PVC 5 gal)	Aerosol Cans (drum)	Burned Oil Filters (drum)	Semi-melted Tote with 300 L of used oil	Asbestos Liner	Semi-burned Batteries	Semi-burned Rubber Pipes (drum)	Ash (drum)	Hazardous ash (drum)	Burned Window Frames (wood & aluminum)	Burned Steel Doors
110709	<ul style="list-style-type: none">• Completely burned;• H&S: floor is not visible in the north part of the Seacan because of the amount of ash and burned equipment and parts (2 to 3' thickness);• H&S: wooden floor is visible in the rest of the Seacan, but is slippery near paint (5 gal);• H&S: dark in the north part of the Seacan.	No	-	6	-	-	-	-	-	-	-	-	-	-	-	50'	>4	-	-	-
693779	<ul style="list-style-type: none">• Not burned, in good condition;• Presence of soot inside on the walls and the ceiling insulation;• H&S: floor is slippery in the north part of the Seacan.	Yes, ceiling only	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
039667	<ul style="list-style-type: none">• Not burned, no soot, in good condition.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
594334	<ul style="list-style-type: none">• Completely burned;• H&S: snow and a steel plate constrain access inside the Seacan (kind of confined space);• H&S: wooden floor is completely burned and covered with ash and burned materials;• H&S: because of the steel plate, it is dark in the Seacan.	Yes, doors only	-	-	-	-	-	-	-	-	-	-	-	-	-	-	>6	-	-	-
300516	<ul style="list-style-type: none">• Partially burned, presence of soot on the walls and the ceiling;• H&S: Hole in the floor back to the right door.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300535	<ul style="list-style-type: none">• Not burned, presence of soot on the walls and the ceiling.	No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
300515	<ul style="list-style-type: none">• Completely burned;• H&S: wooden floor is completely burned and covered with ash and burned materials.	Yes	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Intact Area	<ul style="list-style-type: none">• Area avoided by the fire;• H&S: there is still a lot of material everywhere on the ground;• Black and blue spots on the ground.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Material Storage Area	<ul style="list-style-type: none">• Area impacted by the fire;• H&S: piles of various materials and ash everywhere on the ground;• Blue spots on the ground near paint gallons stored in a Seacan.	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-
Machining Area	<ul style="list-style-type: none">• Area impacted by the fire;• H&S: piles of various materials and ash everywhere on the ground;• Red spots on the ground near steel work bench (brake fluid).	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-

			Frequently Seen HAZMAT																	
Description	General Condition/Health and Safety Considerations	Foam Insulation (according to QE observations)	Adhesive (steel 5 gal.)	Paint or Solvent (steel 5 gal)	Paint or Solvent (steel 1 gal)	Paint, Solvent or Oil (PVC 1 gal)	Paint or Solvent (PVC 1/2 gal)	Paint or Solvent (steel 1 pint)	Grease (PVC 5 gal)	Oil (PVC 5 gal)	Aerosol Cans (drum)	Burned Oil Filters (drum)	Semi-melted Tote with 300 L of used oil	Asbestos Liner	Semi-burned Batteries	Semi-burned Rubber Pipes (drum)	Ash (drum)	Hazardous ash (drum)	Burned Window Frames (wood & aluminum)	Burned Steel Doors
Genie Lift Area	<ul style="list-style-type: none">• Area impacted by the fire;• H&S: piles of various materials and ash everywhere on the ground;• H&S: Anmar supervisor can't ensure the stability of both Genie lifts with 8' high nacelle;• Green spots on the ground to the east of lifts (hydraulic fluid?).	-	-	-	-	-	-	-	-	-	-	-	-	40	in motorized equipment	-	1	-	-	-
Used Oil Area	<ul style="list-style-type: none">• Area impacted by the fire;• H&S: piles of various materials and ash everywhere on the ground;• Black spots on the ground around oil tote tanks;• Evidence of spill to the west and north side of this area;• In the east part of this area, a crane structure is stored on a trailer belonging to Ruskin.	-	-	-	-	-	-	-	-	1	-	10	-	-	-	-	-	2	-	-
Total			1	27	20	14	27	6	5	7	2	10	1	70	4	1	7	5	24	5

Steel and Other Metallic Materials																							
Description	Burned Tote Tank (former oil storage)	Burned Roll of Steel Mesh Carpet	Burned Heater	Heater (soot covered)	Steel Equipment (beams, sheet, racks, tools)	Steel Parts (bolts and nuts per drum	Burned wheels (with former tires)	Motorized Equipment	Burned Air Blower Pipe	Burned Chainblock	Steel Cabinet	Steel Tool Box	Steel Beams	Burned Steel Pipe	Electrical Wires	Burned Roll of Electrical Wire	Mercury-containing Light	Light Ballast	Electrical Components	Fire Extinguisher	Gas Cylinder	Special Waste	Intact Materials
222174	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
901030	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
694267	-	4	1	-	-	-	-	-	-	14	-	1	12	-	-	-	-	-	-	-	-	Melted metal spot (<0.1 m³)	-
101994	-	-	-	-	Yes	-	-	-	-	-	-	-	-	-	Yes	-	-	-	-	1	-	-	-
BSC-1	-	-	1	-	-	Yes	-	-	-	4	1	-	-	-	Yes	-	-	-	-	2	-	-	-
BSC-2	-	-	1	-	-	-	6	-	-	-	-	-	-	1	-	-	-	11	-	-	-	-	-
BSC-3	-	-	-	-	5 racks	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
BSC-4	-	-	-	-	3 rack	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-
024092	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	• 75 air housing filters; • 1x 3.52 gal container of canola liquid shortening; • 2x wooden bench; • 2x bags of absorbent clay.
100619	-	-	-	-	Various lifting equipment	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3	-	-	-
BSC-5	-	-	1	-	-	-	-	1	-	-	-	-	-	-	Yes	-	-	2	-	1	-	-	-
BSC-6	-	-	1	-	-	100 steel rods (3')	-	-	3	-	-	-	-	-	Yes	-	-	-	On 1 steel rack	-	-	-	-
679514	-	-	-	-	-	Mixed with ash and electric components on a 2 to 3' thickness	-	-	-	-	-	-	-	-	Yes	-	-	-	Mixed with ash and steel parts on a 2 to 3' thickness	-	-	-	-

Steel and Other Metallic Materials																							
Description	Burned Tote Tank (former oil storage)	Burned Roll of Steel Mesh Carpet	Burned Heater	Heater (soot covered)	Steel Equipment (beams, sheet, racks, tools)	Steel Parts (bolts and nuts) per drum	Burned wheels (with former tires)	Motorized Equipment	Burned Air Blower Pipe	Burned Chainblock	Steel Cabinet	Steel Tool Box	Steel Beams	Burned Steel Pipe	Electrical Wires	Burned Roll of Electrical Wire	Mercury-containing Light	Light Ballast	Electrical Components	Fire Extinguisher	Gas Cylinder	Special Waste	Intact Materials
110709	-	-	1	-	-	-	-	-	10	-	-	-	-	-	Yes	>2	-	-	Mixed with ash and steel parts on a 2 to 3' thickness in the north part of the seacan	1	-	-	-
693779	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	• 5 welding machine (Esab brand); • 2 pails of electrical components; • 10 bags of concrete.
039667	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	• 15 doors (wood and aluminum); • 1 bag of fiberglass insulation.
594334	-	-	-	-	Racks all along the seacan on each wall	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	-
300516	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
300535	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	• Lifting equipment; • Steel rods; • 3 roof liner rolls.
300515	-	-	-	-	Racks	>2 drums	-	-	-	-	-	-	-	-	Yes	-	-	-	-	-	-	-	-
Intact Area	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	• 6x 1 gal. of TCE; • Wooden racking; • Steel parts.
Material Storage Area	-	-	1	-	Various	4 drums	-	-	-	-	20	-	50	-	-	5	-	9	Various	1	• 1x 20lbs propane; • 5x 100lbs propane.	• Semi-burned pail of Climagel (Metpro anticorrosive protection agent)	-
Machining Area	-	-	-	-	-	-	-	Burned winch	-	-	-	-	-	-	-	-	-	-	-	1	2 welding gas cylinder (1 oxygen and 1 unidentified)	Burned blue PVC structure or drum	Steel structure (working bench)

	Steel and Other Metallic Materials																						
Description	Burned Tote Tank (former oil storage)	Burned Roll of Steel Mesh Carpet	Burned Heater	Heater (soot covered)	Steel Equipment (beams, sheet, racks, tools)	Steel Parts (bolts and nuts) per drum	Burned wheels (with former tires)	Motorized Equipment	Burned Air Blower Pipe	Burned Chainblock	Steel Cabinet	Steel Tool Box	Steel Beams	Burned Steel Pipe	Electrical Wires	Burned Roll of Electrical Wire	Mercury-containing Light	Light Ballast	Electrical Components	Fire Extinguisher	Gas Cylinder	Special Waste	Intact Materials
Genie Lift Area	-	-	-	-	-	-	4 (on the completely burned Genie lift)	• 1 hydraulic unit; • 1 welding machine; • 1 generator; • 1 engine; • 1 completely burned medium size Genie lift; • 1 partially burned large size Genie lift.	-	-	-	-	-	-	-	-	19	19	-	-	-	-	-
Used Oil Area	5	-	-	-	-	-	7 (4 on a small burned Genie lift, 2 on a trailer for the transport of a generator, and 1 left on the ground)	• 1 medium size burned Genie Lift; • 1 burned generator in a trailer; • 1 burned winch.	1	-	-	1	-	-	-	-	5	-	• 10 Neon Lights	14	• 2 cylinders for welding completely burned (unidentified)	• 3 semi-burned tarp	-
Total	5	5	7	1	0	6	6	1	14	18	21	2	62	2	1	7	27	41	0	45	4x welding	0	0

TABLE I: Analytical Results of Residual Materials (Leachate and Dry Materials)
Baffinland Iron Mines Corporation
Anmar Shop, Milne Inlet (Nunavut)

Sample Identification		RSS-1	BB-1	US	BU
Sampling Date (yyyy-mm-dd)		2015-05-31	2015-05-31	2015-05-30	2015-05-30
Parameter	Regulation/Guideline Hazardous Materials			Composite sample made from US-1, US- 2 and US-3	Composite sample made from BU-1, BU- 2 and BU-3
Leachate (mg/L)¹					
Mercury (Hg)	0.1	<0.0001	0.0004	<0.0001	<0.0001
Arsenic (As)	2.5	0.002	0.022	0.006	0.173
Barium (Ba)	100	0.11	0.06	0.08	0.08
Cadmium (Cd)	0.5	0.0023	0.517	0.248	0.0546
Chromium (Cr)	5	<0.5	<0.5	116	<0.5
Lead (Pb)	5	1.43	0.468	0.167	0.056
Selenium (Se)	1	<0.001	0.002	<0.001	<0.001
Silver (Ag)	5	<0.0005	<0.0005	<0.0005	<0.0005
Uranium (U)	10	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)	500	2.40	241	44.7	19.9
Dry Materials²					
Dioxins and furans (µg/kg) ³	5	0.0001*	-	-	-
Cyanides (mg/kg)	250	-	-	4	18

mg/L: Milligram per litre

mg/kg: Milligram per kilogram

Indicates an exceedance of the standards.

- The standard listed represents the concentration of a contaminant contained in the leachate of a solid material as well as the degree to which a material is considered leachable, therefore hazardous according to Column 2 of Table 1, Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, Government of Nunavut Department of Environment, January 2002, revised in April 2011.
 - The standard listed represents the concentration of a contaminant contained in a solid material as well as the degree to which a material is considered toxic, therefore hazardous according to Section 3 of the Quebec Regulation respecting Hazardous Materials (Q-2, r.32), 1997, updated on September 1, 2013.
 - The standard listed represents the sum of total equivalent concentrations relative to 2,3,7,8 -trichlorodibenzodioxin (2,3,7,8-TCDD) for all compounds listed in appendix 2 of the Quebec Regulation respecting Hazardous Materials (Q-2, r.32), 1997, updated on September 1, 2013.
- * This result has been calculated based on the conversion of a weight by surface analytical result of 64.1 pg/wipe to a weight by weight value.

Validation of Standards: May 2015

APPENDIX D

CERTIFICATES OF ANALYSIS (EXOVA LABORATORY)

Request number: **15-668839**



Date Received: 2015-06-22

Date Certificate Issued: 2015-06-25

Certificate Version: 2

☒ Official Certificate of Analysis

☐ Preliminary Certificate of Analysis

Client

Sanexen Services Environnementaux Inc.

9935, Catania, Bureau 200

Brossard, Québec, Canada

J4Z 3V4

Telephone : (450) 466-2123

Fax : (450) 466-2240

P.O. Number	Your project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Comments

Version 02: Addition of the analysis of boron, chromium and uranium for samples 2866074, 2866075, 2866081 and 2866082 omitted in the previous version. English version of the certificate and withdrawal of the criteria for "Politique de protection des sols et de réhabilitation des terrains contaminés".

This version replaces and cancels all earlier version.

NA : Information Not Available

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Client: **Sanexen Services Environnementaux Inc.****Request Number: 15-668839**

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Sample(s)

Lab. No.	2866074	2866075	2866081	2866082
Your Reference	RSS-1 (Water)	BB-1	US-1	BS-1
Matrix	Leachate	Leachate	Leachate	Leachate
Sampled by	NA	NA	NA	NA
Site sampled	NA	NA	NA	NA
Date sampled	NA	NA	NA	NA
Date received	2015-06-22	2015-06-22	2015-06-22	2015-06-22

Parameter(s)

Method

Reference

TCLP leachate (1 liter)	Preparation	2015-06-22	2015-06-22	2015-06-22	2015-06-22
Leachate method TCLP (1311) (Accredited)	Analysis	-	-	-	-
E-A-EN-EN-CHI-PC-MD026 (REF: MA.100-Lix.com.1.1)	Sequential No.	507524	507524	507524	507524
pH of the solid - initial (1/20)		7.6	8.3	<nd>	2.2
pH after acid addition		1.9	2.1	Non requis	Non requis
pH after leaching		4.9	5.2	4.9	4.3
Solution used		1	1	1	1



Client: **Sanexen Services Environnementaux Inc.**

Request Number: 15-668839

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Sample(s)

Lab. No.	2866079	2866080
Your Reference	US-1	BS-1
Matrix	Solid	Solid
Sampled by	NA	NA
Site sampled	NA	NA
Date sampled	NA	NA
Date received	2015-06-22	2015-06-22

Parameter(s)

Method
Reference

Total Cyanide as CN

Cyanide (colorimetry). Result on dry weight. (Accredited)
E-A-EN-EN-CHI-PC-MD009 (REF EPA600/4-79.020,335.2)

Total Cyanides as CN

Preparation	2015-06-23	2015-06-23
Analysis	2015-06-23	2015-06-23
Sequential No.	507660	507660
mg/kg	4	18



Client: **Sanexen Services Environnementaux Inc.**Request Number: **15-668839**

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Sample(s)

Lab. No.	2866074	2866075	2866081	2866082
Your Reference	RSS-1 (Water)	BB-1	US-1	BS-1
Matrix	Leachate	Leachate	Leachate	Leachate
Sampled by	NA	NA	NA	NA
Site sampled	NA	NA	NA	NA
Date sampled	NA	NA	NA	NA
Date received	2015-06-22	2015-06-22	2015-06-22	2015-06-22

Parameter(s)

Method

Reference

Arsenic (As)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Arsenic	mg/L	0.002	0.022	0.006	0.173
Baryum (Ba)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Barium	mg/L	0.11	0.06	0.08	0.08
Boron (B)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Boron	mg/L	0.03	0.19	0.05	0.17
Cadmium (Cd)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Cadmium	mg/L	0.0023	0.517	0.248	0.0546
Chromium (Cr)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Chromium	mg/L	< 0.5	< 0.5	116	< 0.5
Lead (Pb)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Lead	mg/L	1.43	0.468	0.167	0.056
Mercury (Hg)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Mercury	mg/L	< 0.0001	0.0004	< 0.0001	< 0.0001

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Certificate of Analysis No. 665870 - Revision 2 - Page 4 of 5



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Results pertain only to the samples submitted for analysis.

Client: **Sanexen Services Environnementaux Inc.**Request Number: **15-668839**

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Sample(s)

Lab. No.	2866074	2866075	2866081	2866082
Your Reference	RSS-1 (Water)	BB-1	US-1	BS-1
Matrix	Leachate	Leachate	Leachate	Leachate
Sampled by	NA	NA	NA	NA
Site sampled	NA	NA	NA	NA
Date sampled	NA	NA	NA	NA
Date received	2015-06-22	2015-06-22	2015-06-22	2015-06-22

Parameter(s)

Method

Reference

Selenium (Se)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Selenium	mg/L	< 0.001	0.002	< 0.001	< 0.001
Silver (Ag)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (not accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Silver	mg/L	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Uranium (U)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (Accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Uranium	mg/L	< 0.001	< 0.001	< 0.001	0.001
Zinc (Zn)	Preparation	2015-06-23	2015-06-23	2015-06-23	2015-06-23
Metals by ICP (not accredited)	Analysis	2015-06-23	2015-06-23	2015-06-23	2015-06-23
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)	Sequential No.	507690	507690	507690	507690
Zinc	mg/L	2.40	241	44.7	19.9

Note 1: Results and comments, if any, relate only to samples submitted for analysis at the Pointe-Claire laboratory (#307).

Joanie Gagnon

Joanie Gagnon, chemist

CHIMISTE
Joanie Gagnon
2014-115
QUEBEC

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Certificate of Analysis No. 665870 - Revision 2 - Page 5 of 5



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Results pertain only to the samples submitted for analysis.



Certificat d'analyses

Client: **Sanexen Services Environnementaux Inc.**

Request Number: **15-668839**

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Total Cyanide as CN					
Sequential ID No.: 507660					
Total Cyanides as CN	mg/kg	< 1	< 1	89	84 - 126
Silver (Ag)					
Sequential ID No.: 507690					
Silver	mg/L	< 0.0005	< 0.0005	1.06	0.8 - 1.2
Arsenic (As)					
Sequential ID No.: 507690					
Arsenic	mg/L	< 0.001	< 0.001	0.985	0.8 - 1.2
Baryum (Ba)					
Sequential ID No.: 507690					
Barium	mg/L	< 0.01	< 0.01	1.05	0.8 - 1.2
Boron (B)					
Sequential ID No.: 507690					
Boron	mg/L	< 0.02	< 0.02	0.99	0.8 - 1.2
Cadmium (Cd)					
Sequential ID No.: 507690					
Cadmium	mg/L	< 0.0005	< 0.0005	0.970	0.8 - 1.2
Chromium (Cr)					
Sequential ID No.: 507690					
Chromium	mg/L	< 0.5	< 0.5	1.0	0.8 - 1.2
Mercury (Hg)					
Sequential ID No.: 507690					
Mercury	mg/L	< 0.0001	< 0.0001	0.0447	0.04 - 0.06
Lead (Pb)					
Sequential ID No.: 507690					
Lead	mg/L	< 0.001	< 0.001	320 1.07	226 - 340 0.8 - 1.2
Selenium (Se)					
Sequential ID No.: 507690					
Selenium	mg/L	< 0.001	< 0.001	0.956	0.8 - 1.2
Uranium (U)					
Sequential ID No.: 507690					
Uranium	mg/L	< 0.001	< 0.001	1.02	0.8 - 1.2

RDL : Reported Detection Limit

Appendix 1 of Certificate no.665870 - Page 1 of 2

This certificate must not be reproduced, except in its entirety, without written consent from the laboratory. The official version of this certificate is protected and cannot be modified. The above-mentioned samples will be retained for a period of 30 days following the issue of this certificate with the exception of microbiology samples or as instructed by the client. Results pertain only to the samples submitted for analysis.

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Certificat d'analyses

Client: **Sanexen Services Environnementaux Inc.**

Request Number: **15-668839**

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Zinc (Zn)					
Sequential ID No.: 507690					
Zinc	mg/L	< 0.007	0.009	1.02	0.8 - 1.2

Comments

Sequential ID no. 507690 : Zinc : Blanc positif non soustrait des échantillons / Positive blank not subtracted from the samples.

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Certificat d'analyses

Client: **Sanexen Services Environnementaux Inc.**

Request Number: **15-668839**

P.O. Number	Your Project ID.	Project Manager
QE15-113-1	QE15-113-1	Pascal Prud'homme

Quality Control Results - Part 2

Parameters (Sequential ID No.)	Units	Duplicate		
		Value 1	Value 2	Difference (%)
Total Cyanide as CN				
Sequential ID No: 507660	(Sample no)		(2866079)	
Total Cyanides as CN	mg/kg	4	4	0.0

2015-305-EX					
Table A: Dioxins and Furans: solid (pg/wipe)					
			<u>RSS-1 Acetone</u>		
	<u>Lab Blank</u>	# of		# of	
		pks		pks	
<u>Furans:</u>					
2378-TCDF	ND (0.3)		248		
Total TCDFs	ND (0.3)		2931	16	
12378-PeCDF	ND (0.2)		23.3		
23478-PeCDF	ND (0.2)		45.9		
Total PeCDFs	ND (0.2)		1097	14	
123478-HxCDF	ND (0.1)		54.9		
123678-HxCDF	ND (0.1)		25.5		
234678-HxCDF	ND (0.1)		25.1		
123789-HxCDF	NDR (1.2)		1.5		
Total HxCDFs	ND (1.2)		332	12	
1234678-HpCDF	NDR (1.4)		56.3		
1234789-HpCDF	ND (0.2)		4.7		
Total HpCDFs	ND (1.4)		81.6	4	
OCDF	3.7	1	33.3	1	
<u>Dioxins:</u>					
2378-TCDD	ND (0.4)		NDR (2.0)		
Total TCDDs	ND (0.4)		134	3	
12378-PeCDD	ND (0.3)		4.4		
Total PeCDDs	ND (0.3)		83.7	4	
123478-HxCDD	ND (0.2)		3.0		
123678-HxCDD	ND (0.3)		4.3		
123789-HxCDD	ND (0.2)		8.2		
Total HxCDDs	ND (0.3)		50.1	5	
1234678-HpCDD	NDR (1.6)		11.5		
Total HpCDDs	ND (1.6)		23.7	2	
OCDD	NDR (4.0)		18.4	1	
Toxic Equivalent (TEQ)	0 pg/wipe		64.1 pg/wipe		
Approved By:	Colleen Tashiro				
Signature:	<i>C. Tashiro</i>			June 25/2015 12:30pm	
				Date and Time	

2015-305-EX						
Table A (cont.)						
	Lab Blank		RSS-1 Acetone			
% Recovery						
of Surrogates:						
13C-2378-TCDF	71		82			
13C-2378-TCDD	78		85			
13C-12378-PeCDF	63		87			
13C-23478-PeCDF	64		88			
13C-12378-PeCDD	67		90			
13C-123478-HxCDF	65		81			
13C-123678-HxCDF	69		79			
13C-234678-HxCDF	63		78			
13C-123789-HxCDF	49		63			
13C-123478-HxCDD	69		91			
13C-123678-HxCDD	63		62			
13C-1234678-HpCDF	60		75			
13C-1234789-HpCDF	59		127			
13C-1234678-HpCDD	63		76			
13C-OCDD	47		59			
ND - none detected (detection limits in brackets)						
NDR - none detected based on peak ratio						
NDS - none detected based on peak shape						
Reference Method based on Environment Canada 1/RM/19						
Approved By: Colleen Tashiro						
Signature: <u>C. Tashiro</u>						

APPENDIX E

QE PROCEDURES

- Health and Safety
- Hazardous waste packaging and labelling

13.6 MOTOR VEHICLE AND HEAVY MACHINERY SAFETY

Document no: QE-EHS-13.6-PR
Last updated: 2015-02-09



1. Object and Scope	This procedure outlines the methodology used to prevent accidents while operating motor vehicles and heavy machinery. This procedure also describes the guidelines to follow when operating a vehicle or machinery. It applies to all QIKIKTAALUK departments.
2. Acronyms and Definitions	Blind spot: Part that is hidden from the field of view. PCB: Polychloride biphenyls TDG: Transportation of dangerous goods
3. Methodology and Obligations <i>General Information</i>	Using a Company Vehicle QIKIKTAALUK management must make sure that the vehicle operator: <ul style="list-style-type: none">• Holds a valid driver's licence and complies with the driving regulations prescribed by the <i>Highway Safety Code</i>;• Holds a driving record in good standing, that has been reviewed prior to using a Company vehicle;• Notifies their immediate supervisor of any defects with their vehicle; defects and deficiencies of commercial vehicles of > 4,500 kg must be documented upon daily inspection;• Refrains from transporting people if the reported defects have not been repaired, or if it is deemed that the vehicle fails to ensure their safety;• Brings the vehicle to the warehouse's mechanic when it is due for an oil change (5,000 km);• Ensures the maintenance of the vehicle that is being lent. Maintenance must be as prescribed by the manufacturer; and that• Signs, stickers, labels or other material are installed in such a way that they do not hamper safe operation of the vehicle. The vehicle must comply with all the provisions of the <i>Highway Safety Code</i> and must have the following elements: <ul style="list-style-type: none">• 2 reflective triangles. In case of a breakdown on the road or within 3 m of the road, one of these signals must be placed both 30 m in front and behind of the vehicle;• 1 portable fire extinguisher compliant with section 3.4.4 of the "<i>Safety Code for the construction industry</i>." The driver must have the skills required for the type of extinguisher and for operating it;• 1 first aid kit inside the driver's cabin. At the Rivière-des-Prairies warehouse, all vehicles, even personal vehicles, must be parked in reverse. Use of a cell phone or two-way radio ("walkie-talkie") while driving on a public road or a job site is prohibited. If one must take or make a call, they are to park in a secure spot before using the phone or radio. It is also forbidden to use a cell phone to send text messages while driving. Using an iPod, mp3 player or other electronic devices with headphones is strictly forbidden.

<div>4. Methodology and Obligations</div> <div>Transportation of Dangerous Goods</div>	<div>Transportation of Dangerous Goods</div> <ul style="list-style-type: none"> • All vehicle drivers transporting dangerous goods must comply with applicable federal and provincial regulations. • The driver must have received training on the TDG and hold a valid certificate, issued by QIKIKTAALUK, certifying that they have received this training. • The driver must inspect the vehicle before leaving. • As required by the <i>Highway Safety Code</i>, the driver must keep a register of hours worked and of vehicle inspections. A register must be kept if driver travels more than 160 km (in a straight line) from the point of departure. • At the end of the month, a copy of the register must be submitted to the person in charge of transportation to be kept on file for 2 years. • When transporting PCBs, the driver must inspect the vehicle every two (2) hours or 200 km, whichever comes first. The inspection must be on record. • When transporting enough dangerous goods such that danger placards must be placed on the vehicle, the driver must make a mandatory stop 5 m before a railroad crossing (unless otherwise indicated) and, as required by regulation, must ensure that safety marks are affixed on the vehicle as well as on containers of dangerous goods. • It is forbidden to use the Louis-Hippolyte-Lafontaine and Ville-Marie tunnels in Montreal and the Joseph-Samson tunnel in Québec if driving a vehicle that is transporting dangerous goods in sufficient quantity such that danger placards be affixed. • The driver is responsible for the safety of the load and must make sure that the material transported is secured and safely handled. If applicable, a means of containment must be provided to prevent any accidental release. • The driver must keep a copy of transportation documents inside the vehicle cabin, at arm’s length or inside the driver door. The driver must also provide a document copy upon delivery of the dangerous goods and bring back the signed copy to be kept for 2 years. • Prepare a vehicle cleaning procedure for when the vehicle travels through a contaminated area in order to avoid spreading the contamination outside the contaminated area. • Any incident (including accidental releases or spills of dangerous goods) must be immediately reported and be investigated in accordance with standards described in the <i>QE-EHS-03-PR Management of Incidents</i> procedure.
<div>5. Methodology and Obligations</div> <div>Planning and Managing Travels</div>	<p>When an employee must travel by vehicle over important distances to reach a site, the following measures are to be implemented:</p> <ul style="list-style-type: none"> • Plan work so as to limit travels when possible (e.g., combine travels); • Travel during daytime and avoid driving during bad weather conditions; • Before leaving for an unknown location, obtain driving instructions; • Inform supervisor or another person of itinerary and make provisions for a reliable means of communication in the event of an emergency; • Plan for breaks to reduce driving fatigue.

	<p>Employee must have followed training and be informed about planning and managing travels.</p> <p>Where commercial vehicles of > 4,500 kg are concerned, it is forbidden to accumulate more than 13 hours of driving per day or more than 14 hours of work.</p>
<div>6. Methodology and Obligations</div> <div>Heavy Machinery</div> <div>  </div> <div>  </div> <div>  </div>	<div>Safety of heavy machinery</div> <p>Work requiring heavy machinery on a job site present unusual and specific movement conditions. Workers may be exposed to various types of machinery, specifically: dump trucks, semi-trailers, loaders, bulldozers, backhoes, compact excavators, drills or lift trucks.</p> <p>These machines have many blind spots which restrict the field of view and prevent from seeing movements on the ground.</p> <p>The height and the shape of the machine can make it such that the zones immediately in front of and behind the machine are not visible to the operator. Similarly, although side-view mirrors are present, visibility can remain limited on either side. Usually, blind spots are bigger at the back of a vehicle and may extend over more than 20 m (70 feet) for a typical light duty truck equipped with a tool box.</p> <p>With a view to ensuring the safety of all, a key factor to ponder consists in restricting backing up manoeuvres. Communication is also instrumental for anyone who tries to enter the heavy machinery or truck work area.</p> <p>Whether communication is visual or through radios, it must be two-way. In other words, before entering an unprotected area, the pedestrian must have received a clear signal that the operator is aware of their presence. One must never assume that the operator is aware of their presence. The operator must then stop the machine unless the pedestrian is there to guide an operation. If it is required, the operator must also stop the vehicle as soon as they lose sight of the pedestrian. These signals must be agreed upon beforehand and known to all the workers.</p> <p>Work performed in trenches or in excavations requires the use of excavators for digging or handling materials. It is thus important to put safety measures in place to prevent accidents that are likely to happen with these machines: tipping over, coming into contact with power lines, striking a worker, etc.</p> <p>Make sure that no one is present within the swing radius of the excavator's arm or counter-weight.</p> <p>Please note that using the excavator for lifting purposes is only allowed for sewer, water main and culvert work.</p> <div>Movement of Heavy Machinery</div> <p>Before taking a seat inside the machine, walk around it to make sure that no one is near and risks getting injured during the operation.</p> <p>Never work below the tools tied to the equipment without an appropriate restraint system.</p> <p>The machine's tool must be used for its intended use and the machine must never carry more passengers than the number of seats available.</p>

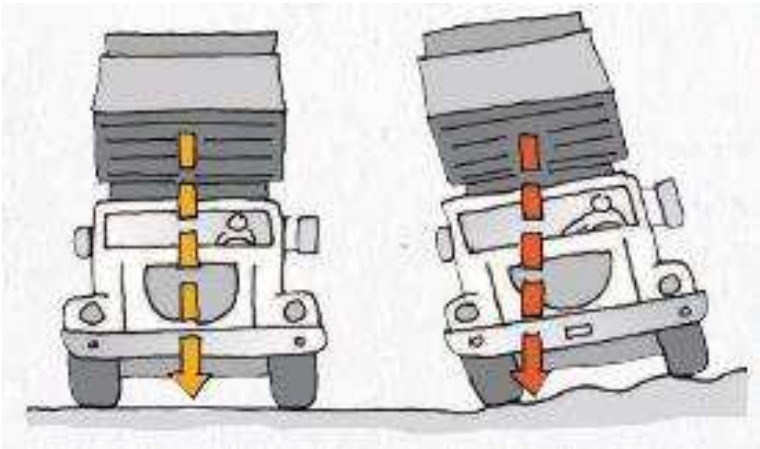
Maintaining or lifting an excessive load increases the risk of tipping over. The higher the weight and height of the load, the higher the risk.

Never leave the machine running while unattended and always rest the tool on the ground when stopping work or leaving the cabin.

Always keep the tool as close as possible to the ground when moving. Make sure that no one can fit entirely or partly underneath the tool.

Have good knowledge of the vehicle's operating conditions.

Maintaining too great a load or moving too quickly makes the machine more vulnerable to the ground or road conditions. At unloading point, steep or unstable ground and few bank degrees are sufficient to tip over, especially semi-trailers with dump body.



Traffic Plan

Aiming to better coordinate movements of vehicles and construction equipment on a job site, it is of utmost importance to develop a traffic plan that will be communicated to all stakeholders and be well displayed on the worksite.

An appropriate traffic plan should include the following items:

- Itineraries for vehicles and heavy equipment as safe as possible to access and exit work areas;
- Planning traffic so as to restrict backing up manoeuvres and prevent minor accidents between workers and vehicles;
- Specific and clearly defined backing up areas;
- Implementation of means of communication (for spotters, operators of heavy machinery, truck drivers, workers on foot, etc.);
- Appropriate and visible signage;
- Maximum speeds allowed on the job site.

The Flagger's Role

On a construction site, the function of Flagger is critical when workers and site vehicles share the same traffic areas. A flagger gives directions to a driver when manoeuvres may endanger the safety of individuals.

	<p>Here again, communication between the flagger and the driver is of utmost importance. The driver must never lose sight of the flagger who must always be seen by the driver. When visual contact is interrupted, the driver must stop the vehicle and activity at once.</p> <p>The flagger must comply with the following prevention measures:</p> <ul style="list-style-type: none"> • Wear high visibility clothing, suitable for the climate; • Be positioned in the driver’s line of vision, so as to see the path the vehicle will take and see beyond this path; • Pay attention to obstacles as well as to buried conduits and pipes; • Be aware of the driver’s blind spots; • Observe the movement of the device or of the load when the driver cannot see it; • Avoid being under a load at all times and ensure that no one is behind a vehicle.
7. Roles and Responsibilities	It is each employee’s responsibility to behave responsibly when operating a QIIKTAALUK vehicle.
8. Training and Awareness	QIIKTAALUK management must make sure that each employee who drives a company vehicle holds the permit required by the <i>Highway Safety Code</i> , complies with driving regulations and has received the training require for the type of vehicle used. Furthermore, the following courses are available: defensive driving on roads, transportation of dangerous goods, truck inspection prior to departure.

1. Object and Scope	<p>This procedure outlines the methodology used to prevent all accidents related to driving a lift truck (forklift) and other lifting equipment. This procedure also allows workers to make sure that they can safely operate a forklift truck. It applies to all QIQUIKTAALUK departments.</p>														
2. References	<ul style="list-style-type: none"> <i>QE-EHS-13.8-FO1: Inspection Sheet for Forklift Truck</i> <i>Occupational Health and Safety Regulations (c.S-2.1, r.13)</i> <i>Occupational Health and Safety Regulations (OHSR, section 256.3)</i> <i>“Guide de prévention, Chariots élévateurs” of the Association sectorielle du transport et de l’entreposage (ASTE), 2007.</i> 														
3. Acronyms and Definitions	<p>OHSR: <i>Occupational Health and Safety Regulations</i></p> <p>Stacking: Operation that consists of superimposing containers.</p> <p>TDG: Transportation of Dangerous Goods</p> <p>WHMIS: Workplace Hazard Management Information Systems</p>														
4. Methodology and Obligations <i>General Information</i>	<p>Only employees who have followed both the theory and practice components of the training course <i>Conduite préventive des chariots élévateurs</i> (Defensive driving of lift trucks) given by the <i>Association sectorielle du transport et de l’entreposage</i> (via Prévention formerly known as <i>ASTE</i>) or any other recognized agency may use a lift truck.</p> <p>For all other equipment, the operator must have received the necessary training before using the equipment (consult the EHS department).</p> <p>Risks</p> <p>The principal risks are mainly associated with the operator’s moving manoeuvres and with the environment in which work is carried out.</p> <table border="1"> <thead> <tr> <th>Examples of risks to consider</th><th>Potential consequences</th></tr> </thead> <tbody> <tr> <td>Passageways are obstructed and not marked</td><td>Collision with a forklift truck or worker</td></tr> <tr> <td>Limited work space</td><td>Difficult to move, collision with material.</td></tr> <tr> <td>Work procedure is absent or lacking</td><td>Getting stuck under the chassis</td></tr> <tr> <td>Speeding, narrow turn or sudden stop</td><td>Forklift driver or transported load falling</td></tr> <tr> <td>Handling unstable loads</td><td> <ul style="list-style-type: none"> Load falling Collision with obstacles </td></tr> <tr> <td>Restricted field of view (due to the height of the load or of the mast)</td><td>Collision with a forklift truck, a worker or an obstacle</td></tr> </tbody> </table> <p>Operators must be protected by a roof to avoid being hit by a falling object. Transporting loads above workers and/or above the location where workers must be placed or walk through is forbidden.</p>	Examples of risks to consider	Potential consequences	Passageways are obstructed and not marked	Collision with a forklift truck or worker	Limited work space	Difficult to move, collision with material.	Work procedure is absent or lacking	Getting stuck under the chassis	Speeding, narrow turn or sudden stop	Forklift driver or transported load falling	Handling unstable loads	<ul style="list-style-type: none"> Load falling Collision with obstacles 	Restricted field of view (due to the height of the load or of the mast)	Collision with a forklift truck, a worker or an obstacle
Examples of risks to consider	Potential consequences														
Passageways are obstructed and not marked	Collision with a forklift truck or worker														
Limited work space	Difficult to move, collision with material.														
Work procedure is absent or lacking	Getting stuck under the chassis														
Speeding, narrow turn or sudden stop	Forklift driver or transported load falling														
Handling unstable loads	<ul style="list-style-type: none"> Load falling Collision with obstacles 														
Restricted field of view (due to the height of the load or of the mast)	Collision with a forklift truck, a worker or an obstacle														

<div> <div>5. Methodology and Obligations</div> <div>Declaration</div> </div>	<div>General Safety Rules:</div> <ul style="list-style-type: none"> Carry out inspections prior to using equipment and perform weekly inspections in a safe spot. In order to perform a full inspection, such inspections should be conducted in 2 parts, when the forklift truck is stopped and when it is operation. Prior to using a motorized mobile equipment, repair all malfunctions detected during inspections that may affect the safe operation of equipment; Consult the manufacturer’s operator’s guide for any maintenance work or recommendations specific to the forklift truck used; Have a full maintenance inspection done by a qualified technician after each period totalling 2,000 hours of use, or once per year; Observe the forklift truck’s load capacity and ensure that the load is stable before moving it; Avoid tipping over by moving with the forks in a low position, while making sure to tilt the mast backwards; Observe signs and passageways, limit your speed and signal your presence (horn) when you are less visible; Observe safety rules when changing the propane tank; Ensure adequate ventilation to reduce carbon monoxide concentrations in the atmosphere. Ensure that mobile equipment is properly immobilized to prevent any movement when it is not in use. Operator of equipment must use a flagger when field of view is obstructed.
<div> <div>6. Methodology and Obligations</div> <div>Visual Check</div> </div>	<div>Visual Check:</div> <ul style="list-style-type: none"> General aspect of the forklift truck (cleanliness, visible damage); Load plate (visible and adequate). Nominal pay load is indicated; No evidence of leakage on the ground (oil, brake fluid, hydraulic connectors or other); Adequate engine oil, gas, transmission fluid and coolant levels; Appropriate electrolyte level in battery and terminals are tight and clean; Hydraulic hoses in good condition (not cut or crushed, no ballooning). Connectors are not leaking; Cables and chains (adequate tension; not stretched, crushed or broken); Tires and wheels in good condition; Rims (bolted, in good condition); Mast in good condition (check welding and bolts); Overhead guard and driver’s seat in good condition (in place, welded or bolted, anchored to forklift truck); Panel, controls and instruments in good condition; General aspect of fork arms (centered, locked and equal height). Check for cracks and signs of wear;

Page 3 of 3

FORM

13.8 SAFETY OF LIFTING EQUIPMENT

Document n°: QE-EHS-13.8-FO1
Date de révision: 2013-03-20



FORKLIFT


CHECK LIST

Lift No.: _____

Verified by: _____

Date: _____

GENERAL SAFETY INSTRUCTIONS

- Weekly inspections must be performed in a safe area. They should take place in two parts, when the forklift is stopped and when it is in operation for a full inspection.
 - Consult the manufacturer's manual for any maintenance or specific recommendations for the forklift use.
 - A complete maintenance inspection must be performed by a qualified technician after every 2,000 hours or annually.
 - Check the load capacity of the forklift and the stability of the load before moving.
 - Prevent lateral overturning circulating with forks in lowest position while making sure to tilt the mast back.
 - Observe signs and lanes, limit your speed and make your presence known (horn) when you are not very visible.
 - Follow safety rules when changing the propane tank
 - Ensure adequate ventilation to reduce the levels of carbon monoxide accumulated in the air.
- 



VISUAL CHECKS

- ☐ General aspect of the forklift (cleanliness, visible damage).
 - ☐ Capacity plate (visible and adequate). Indication of the load limit.
 - ☐ No evidence of leaks on the ground (oil, brake fluid, hydraulic fittings or other).
 - ☐ Adequate levels of oil, gas transmission and water radiator.
 - ☐ Check battery lids and leads for damage and fuel level.
 - ☐ Hydraulic hoses in good condition (not cut or crushed, without bloating). Fittings that do not leak.
 - ☐ Chains and ropes (proper tension, not stretched, crushed nor broken).
 - ☐ Tires and wheels in good condition.
 - ☐ Wheels (bolted in good condition).
 - ☐ Mast in good condition (check welds, bolts).
 - ☐ Headrest and driver's seat in good condition (in place, welded or bolted securely attached to the trolley).
 - ☐ Dashboard, gauges and instrumentation in good condition.
 - ☐ General appearance of forks (centered, locked and same height). Check cracks and forks' wear.
 - ☐ Backrest protection of load in place, bolted and in good condition.
 - ☐ General aspect of the propane tank (well anchored, without leakage, WHMIS and TDG labels).
 - ☐ Remarks:

OPERATIONAL CHECKS

- ☐ Panel board instrumentation functions.
- ☐ Horn and backup alarm functions.
- ☐ The steering wheel responds to maneuvers.
- ☐ Operational safety belt in good condition.
- ☐ Operational headlights, taillights and indicators.
- ☐ The clutch responds to maneuvers.
- ☐ Functional brake and parking brake.
- ☐ Operational service brakes (front and rear).
- ☐ Hydraulic controls responds to maneuvers.
- ☐ Elevation of the mast (check leaks, chains and hoses stuck).
- ☐ The fork tilt responds to maneuvers.
- ☐ The opening and closing of the sliding forks responds to maneuver.
- ☐ Remarks:



13.8 SAFETY OF LIFTING EQUIPMENT

Document n°: QE-EHS-13.8-FO1
Date de révision: 2013-03-20

SAFETY TIPS FOR FORKLIFTS



1



- ✓ **SAFETY CLOTHING**
- ✓ **TRAINING**

Only operators who have completed the forklift operation skill training may operate the forklift. Wear designated work clothes and protective devices.

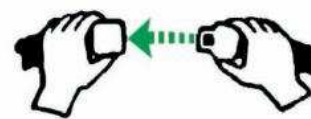
2



- ✓ **PRE-OPERATIONAL INSPECTION**

Inspect the forklift before starting work and inform the supervisor immediately if there are problems. Contact your dealer for repairs or modifications.

3



- ✓ **FASTEN SEAT BELT**

Before operating the forklift fasten your seat belt.

4



- ✓ **KEEP WITHIN SPEED LIMIT**

Always operate the forklift at a speed that is appropriate for the environment. Observe the work site rules and operate the forklift safely.

5



- ✗ **AVOID HAZARDS**

Do not drive over objects such as pieces of wood scattered on the ground. Doing so could cause the load to shift or the operator to lose control.

6



- ✗ **UNSTABLE LOAD**

Stack the load on the pallets and skids safely and properly. Use prevention measures such as ropes or binders if required. Do not carry unstable loads.

7



- ✗ **DON'T USE FORK TIPS**

Do not use the tip of the forks as a lever to raise a heavy load. Do not push a load with the tip of the forks, and do not use the tilt cylinder to pull a load.

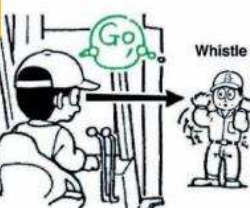
8



- ✓ **USE SUITABLE PALLETS**

Use pallets and skids that can withstand the weight of the load. Do not use damaged, deformed or decayed pallets and skids.

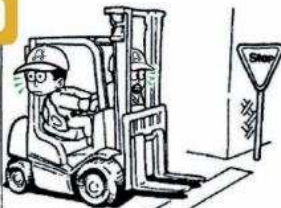
9



- ✓ **USE HELPER IN NARROW SPACES**

Assign a helper at narrow places and make sure to predetermine signals to be used. The forklift operator must follow the signals given by the helper.

10



- ✓ **LOOK LEFT AND RIGHT AND SOUND HORN**

If the view is obstructed, always stop once, sound horn, and look left and right before proceeding.

11



- ⚠ **KEEP FORKS LOW**

Do not travel with the forks higher than a foot from the floor, and never travel or turn with the forks in an elevated position or tilted forward.

12



- ✓ **CLEAR VISIBILITY**

If visibility is obstructed, a lookout helper may be required. Drive carefully when backing.

13



- ✗ **NO RIDERS**

A forklift is built for only one person. It is dangerous for anyone to ride on the forks or anywhere else on the forklift.

14



- ✗ **NO HANDS ON MAST**

Do not place hands or feet on the cross members of the mast. Your hand will be severed if the mast is lowered while your hand is on it.

15



- ⚠ **SLOW DOWN WHEN TURNING**

Travel slowly when turning. Forklifts can tip over even at very slow speeds. The combination of speed and the sharpness of a turn can cause a tip over.

16








- ⚠ **SPECIAL CARE FOR SPECIAL LOADS**


Take special care when carrying a long or wide load. Turn and work slowly to prevent the load from shifting. Make sure the load is balanced.


1. Object and Scope	This procedure outlines the methodology used to protect all QIKIQTAAALUK workers who are exposed to risks for which personal protection equipment (PPE) is required (eyes, hands, feet and head). It applies to all QIKIQTAAALUK departments.
2. References	<ul style="list-style-type: none"> • <i>Association paritaire de santé et de sécurité du travail, secteur imprimerie et activités connexes</i> • <i>Occupational Health and Safety Regulations (OHSR)</i> • <i>Act Respecting Occupational Health and Safety (AROHs)</i> • <i>Canadian Standards Association (CSA)</i> • <i>Institut national de recherche et sécurité (INRS)</i>
3. Acronyms and Definitions	PPE: Personal protection equipment ATV: All-terrain vehicle
4. Methodology and Obligations <i>General Information</i>	<p>The objective of rigorous PPE use is to protect employees against injuries by creating a barrier against occupational risks. PPE is not a substitute to good engineering practices, administrative controls or good work practices, and this equipment must only be used along with the appropriate control in order to ensure the integrity of the personnel's health and safety.</p> <p>PPE will be identified, worn and maintained when its use is deemed necessary, and will serve to reduce the chance of injury or occupational illness.</p> <p>The PPE safety standard defines the minimum rules that apply to all employees and other individuals who have access to QIKIQTAAALUK facilities or job sites.</p> <p>This standard aims to protect the eyes and face, head, hands and feet and also targets high visibility devices. Given their particular nature, individual standards are provided for respiratory, hearing and fall protection.</p> <p>PPE must be checked prior to use to make sure that it is in good condition. QIKIQTAAALUK will provide its employees with the necessary PPE to fulfill their tasks safely.</p> <p>It should be noted that PPE is not required in office buildings or in work trailers used as offices. This may vary according to the activities and work being carried out in these environments. For example, if construction work or other similar activities is being carried out in these environments, the PPE standard would then become applicable.</p>
5. Methodology and Obligations <i>Personal Hygiene Rules</i>	<p>In addition to wearing PPE, personal hygiene rules must be observed:</p> <ul style="list-style-type: none"> • Wear appropriate safety equipment and protective clothing at all times; • Any person working on a job site must wash their hands and face before eating, drinking, smoking or using the washroom; • Observe rules pertaining to washing and removing boots and other equipment before entering the changing room (clean area) and the contaminated area, if applicable; • Place contaminated tools, materials and PPE at specific locations to avoid spreading the contamination, and particularly avoid contact with bare skin. Hazardous substances such as PCB and mercury are present on some of our job sites;

	<ul style="list-style-type: none"> • The combination of PPE use, good housekeeping and good personal hygiene are required at all times; • Make sure to wear a breathing mask when required and write your name on it; • Consider a coffee break as exiting. Therefore all work clothes must be removed, and the hands and face carefully washed; • Allow smoking only in specifically designated areas. It is strictly prohibited to smoke on the work site; • Remove all personal belongings such as watches, rings, chains, etc. to avoid contamination outside the contaminated area. As such, the lining on hard hats, safety boots, etc. must be thoroughly checked. <p>Jewellery, Body Piercings, Loose Clothing and Long Hair</p> <p>Special attention must be given to jewellery, loose clothing and long hair which might get caught in mobile equipment or on fixed objects, causing injuries.</p> <p>Consequently, it is forbidden to wear jewellery on a job site such as watches, bracelets, rings, hoop earrings, necklaces or chains that hang outside clothing. Exposed body piercing jewellery, that is to say which is not covered by clothing, is strictly prohibited on our job sites.</p> <p>Long hair must be tied back underneath the hard hat, or tucked underneath clothing.</p> <p>Headbands, hair nets, welders’ caps, hoods and other similarly flat head gear can be worn underneath the hard hat as long as they do not hinder its proper fit or its uniform suspension. Wearing a hood must not impair peripheral vision. It is forbidden to wear a baseball cap underneath the hard hat since it hinders the hat’s proper fit and suspension.</p>
6. Methodology and Obligations <i>Hand and Skin Protection</i>	<p>This standard describes the minimum requirements in terms of hand protection for all employees and any other person who is granted access to QIKIQTAAALUK facilities or job sites. Appropriate skin protection should be provided to workers and should take account of prevailing chemical, mechanical, thermal, physical and other risks.</p> <p>All employees must wear protective gloves adapted to the risks when they are working QIKIQTAAALUK’s property or job site.</p> <p>The selection of protective gloves will be made based on the risk analysis for the job to be performed. At the very least, the following rules apply:</p> <ul style="list-style-type: none"> • <u>Work Gloves</u>: leather gloves are the basic protective means for all lifting or load transport; • <u>Gloves Resistant to Chemicals</u>: based on the type of chemicals, the gloves will provide protection against contact with chemicals and will be resistant to product permeation; • <u>Gloves for Sampling and Resistant to Contamination</u>: Nitrile or latex gloves will be worn for sampling activities to protect the hands and the samples. Based on the nature of the risks, it will be possible to wear these gloves underneath chemical resistant gloves or leather gloves; • <u>Gloves Resistant to Cuts</u>: when work comprises a risk of getting cut, Kevlar® gloves must be used; • <u>Welding gloves</u>: when welding, soldering or cutting using a torch, welding gloves must be worn.

	<p>Procedure for Removing Soiled Gloves</p> <p>By removing gloves using the following method, contact with the external part of the glove is avoided, and so is the risk of being contaminated by the products on the surface of the gloves:</p> <ol style="list-style-type: none"> 1. Loosen the finger tips on one of your gloved hands using the other hand; 2. Make a ball with this glove; 3. Pinch the glove in the other hand a few centimetres from the edge; 4. Flip it over (the other glove) and remove it; 5. Discard soil gloves (= chemical waste) in an appropriate container. <p>By carefully removing gloves, contact with the exterior part of the glove is avoided.</p> 
<p>7. Methodology and Obligations</p> <p><i>Foot Protection</i></p>	<p>All workers exposed to risks of feet injury must wear approved safety footwear when they are working in the warehouse, in the field and on QIKIQTAAALUK job sites, excluding offices, pedestrian areas and the warehouse cafeteria.</p> <p>Generally, there is a risk of a foot injury when the worker is exposed to sharp or pointy objects, falling objects that are heavy or sharp, molten metal when welding, hot or corrosive liquids or other similar risks.</p> <p>Protective footwear must at least comply with, or exceed, the standards under CSA Z195-M92 (OHSR, section 344). Approved protective footwear (safety boots) must be covered and support the ankle, have a sole that is resistant to oils and acids and have a heel that is at least 13 mm (½ inch), but no greater than 25 mm (1 inch). Safety boots must be laced up all the way.</p> <p>Depending on the type of products handled, it is possible to replace leather boots with boots that are resistant to chemicals. These boots however must provide adequate protection against products for which they are worn and must be CSA-approved.</p> <p>Depending on weather conditions, it may be possible to wear rubber boot covers on top of the approved safety boots, as long as these covers do not interfere with the protective properties of the footwear.</p> <p><u>You must replace your safety boots if:</u></p> <ul style="list-style-type: none"> • You notice cracks, holes or tears; • A broken, detached or peeled off sole; • The steel toe is pushed in; • The sole plate is punctured or torn; • The lining is worn above the steel toe;

	<ul style="list-style-type: none"> The sole’s non-skid treads are worn out. <div>   </div> <div> <div>Incorrect wear</div> <div>Correct wear</div> </div>
<div> <div>8. Methodology and Obligations</div> <div> <div>Eye and Face Protection</div> <div>   </div> </div> </div>	<p>This standard defines the minimum requirements for protecting the eyes and face and applies to all employees and to any person who is granted access to QIKIQTAAALUK properties or job sites. For each task that poses a risk to the eyes and face, all QIKIQTAAALUK employees must wear safety glasses with side shields. Wearing safety goggles or a full visor may be required when safety goggles are deemed insufficient (e.g. dust, grinding, presence of hazardous vapours/liquids, welding, etc.).</p> <p>The face screen combines eye protection and face protection that may be worn with a headband directly on the head, or in combination with a hard hat. Based on the type, face screen offer protection against impact with particulate matter, splashing, heat radiation, harsh chemical substances or a combination of these elements. Wearing glasses or a mask with a filtering cartridge is required for all welding work or similar activity.</p> <p>The eye is a precious yet very vulnerable organ. When it is affected, you must know how to react as to not worsen the situation. It should be noted that most eye injuries or burns require medical treatment.</p> <p>Therefore if you witness an accident involving the eyes, immediately call first aid attendants.</p> <p>Risks</p> <p>The risks for the eyes and face most frequently encountered are:</p> <ul style="list-style-type: none"> Dust and dirt swept up by the wind; Tree branches; Projection of particulate matter from drilling, cutting, digging and other similar work; UV rays emitted during electrical and welding work; Splashing, smoke; Fibres from insulating materials, like fibreglass; Irritating and corrosive agents.


	<p>Dust</p> <p>If dust gets in your eyes, avoid rubbing them. Natural tears often suffice to spontaneously eliminate dust.</p> <p>Foreign Body</p> <p>Do not rub eyes and do not apply pressure. Never attempt to remove a foreign body lodged in the eye: this might cause it to penetrate even deeper and worsen the injury. Instead, wait for medical help.</p> <p>Contact Lenses</p> <p>On a job site, contact lenses cannot replace safety glasses. Dust and dirt may lodge themselves behind contact lenses and cause sudden discomfort and a loss of vision. Furthermore, it is difficult to keep contact lenses clean, as appropriate facilities for removing, cleaning and reinserting contact lenses are rarely available. Wearing contact lenses is not recommended for people who are regularly exposed to irritating vapours, intense heat, splashes of liquid, molten metal or other similar elements, and when the work requires regular use of a breathing mask.</p> <p>Wearing contact lenses does not substitute the required use of protective eyewear. People who wear contact lenses must use the same protective eye devices as other employees performing the same tasks, compliant with CSA Z94.3-92.</p> <p>Prescription Glasses</p> <p>People who wear prescription glasses must use compliant protective glasses that are adjusted to their sight, following the criteria listed below. They must:</p> <ul style="list-style-type: none"> • Be compliant with CSA Z94.3-92; • Be purchased from authorized suppliers; • Comprise plastic or polycarbonate lenses; • Have permanent side shields.
<p>9. Methodology and Obligations</p> <p><i>Head Protection</i></p> 	<p>This standard describes the minimum requirements for head protection for all employees and any person who is granted access to QIKIQTAAALUK facilities or job sites.</p> <p>All employees must wear a hard hat when working on QIKIQTAAALUK properties or job sites.</p> <p>Hard hats must at least be compliant with, or exceed CSA Z94.1-92. (OHSR, Section 342) or CSA Z94.1 – 05. The type of hat selected will be based on the risks of a vertical impact (Type I) or of a vertical or lateral impact (Type II).</p> <p>The effective date determines the start of the hard hat’s period of validity (based on the manufacturer’s specifications). The hard hat must be inspected before each use to verify its integrity and condition, and must be worn in the intended way. The suspension may be reversed such that the hard hat is worn backwards. If the hard hat’s label bears a reversibility sign, the suspension may be installed backwards (sweatband on the opposite side of the rim) such that the hard hat can be worn with the rim at the back.</p>

13.9.1 PERSONAL PROTECTION EQUIPMENT	Document no: QE-EHS-13.9.1-PR Last updated: 2015-02-09	 Qikiqtaaluk environmental ᑭᑭᑭᑭᑭᑭᑭᑭ ᑭᑭᑭᑭᑭᑭᑭᑭ
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	<p><i>N.B.: A hard hat that has received an impact must be checked and replaced, if required.</i></p> <p>When an employee must operate or be a passenger on a snowmobile or an ATV, the type of head protection must be compliant with the <i>ministère des Transports</i>’ standard or with CSA D-230. (RROHS, section 286).</p>
10. Methodology and Obligations <i>High Visibility Clothing</i>	<p>This standard describes the minimum visibility requirements for all employees and any person who is granted access to QIKIQTAAALUK facilities or job sites.</p> <p>All employees must wear high visibility protective clothing when working on a QIKIQTAAALUK property or job sites where vehicles or heavy machinery are being used.</p> <p>The following requirements apply:</p> <ul style="list-style-type: none"> • The high visibility safety vest is orange, yellow or lime green with 2 50-mm (2 inches) vertical stripes made of reflective material at the front, and 2 bands forming an “X” at the back, as well as a horizontal band at the waist. This vest is considered Class 2 clothing. If required, the vest must have a quick release system such as Velcro, or other similar system; • Overalls are considered Class 3 clothing, as long as the instructions provided in the standard are followed. Generally, additional stripes are applied to the sleeves and legs; • High visibility safety clothing must be kept clean and in good condition to maintain adequate reflectivity.
11. Methodology and Obligations <i>Respiratory Protection</i>	<p>Refer to Section 13.9.2 Respiratory Protection</p>
12. Methodology and Obligations <i>Hearing Protection</i>	<p>Refer to Section 13.9.3 Hearing Protection</p>
13. Roles and Responsibilities	<p>The Employer’s Responsibilities:</p> <ul style="list-style-type: none"> • It is the responsibility of the employer or his representatives (directors, project managers, health and safety coordinators, foremen) to take necessary measures to protect the health, safety and physical well-being of the people employed and to make sure that the protection equipment is properly worn when required; • Provide required PPE and make it available to employees and visitors; • Make sure that employees are trained to use, maintain and clean PPE that is supplied to them; • Make sure that the PPE safety standard is met by all employees and that they use and maintain their PPE appropriately; • Make sure that damaged or faulty PPE is replaced on the spot; • Make sure that contractors, visitors and people who are granted access to QIKIQTAAALUK facilities follow and observe the PPE safety standard.

	<p>The Worker’s Responsibilities:</p> <ul style="list-style-type: none"> • The workers must correctly wear PPE that is supplied to them and maintain it (e.g. cleaning, inspection); • The worker must not alter PPE (e.g. paint, puncture); • Inspect PPE and make sure it is in good condition. If PPE is broken, faulty or damaged, the worker must notify their immediate supervisor to have it repaired or replaced.
14. Training and Awareness	<p>Training on the importance of wearing and maintaining PPE is part of the new Employee Integration Program and of annual training sessions.</p>

13.9.2 RESPIRATORY PROTECTION

1. Object and Scope	<p>This procedure outlines the methodology used to protect QIKIQTAAALUK workers against known or potential occupational respiratory hazards. It applies to all QIKIQTAAALUK departments.</p>
2. References and Acronyms	<ul style="list-style-type: none"> CSA Z94.4-02 CSA Z180.1-00 <i>Occupational Health and Safety Regulations</i> (OHSR) EHS: Environment, Health and Safety PPE: Personal Protection Equipment RPE: Respiratory Protection Equipment
3. Methodology and Obligations <div>General Information</div> <div>  </div>	<p>RPE are numerous and varied, different ones corresponding to specific work situations. The use of ventilation or of another means of technical control should be favored prior to using RPE. It is strictly forbidden to expose workers to contaminants at levels exceeding limit values of professional exposure.</p> <p>Using a RPE is necessary each time a person faces the risk of health impairment from inhalation of air polluted by gases, vapours, dust, aerosols or air that is oxygen deficient.</p> <p>RPEs are divided into 3 main groups:</p> <ul style="list-style-type: none"> Paper masks (<i>to protect against dust</i>); Cartridge masks (<i>to filter dust and vapours that can be filtered with the cartridge</i>); Respiratory systems providing breathable air. These systems are used when contaminants cannot be filtered by cartridges or if they represent an imminent hazard that may lead to death. <p>Respiratory systems that dispense breathable air must be approved by the EHS department to make sure they comply with CSA-Z180.1-00: Compressed breathing air and Systems.</p> <p>RPE must be correctly disinfected and stored after each use.</p>
4. Methodology and Obligations <div>Respiratory Protection Program</div>	<p>Respiratory Protection Program</p> <p>The <i>OHSR</i> requires that an employer provide workers with respiratory PPE at no cost when necessary.</p> <p>It also dictates that a respiratory protection program should be developed and implemented in accordance with CSA Z94.4-93.</p> <p>This program is managed by the EHS department. Their mandate is to develop, maintain and monitor the respiratory protection program that comprises the following.</p> <p><u>Technical Component:</u></p> <ul style="list-style-type: none"> Assessing risks (by project); Determining the protection required (equipment selection).

	<p><u>Employee Component:</u></p> <ul style="list-style-type: none">• Checking the program’s effectiveness;• Training personnel on respiratory protection and on equipment wear and maintenance;• Medical evaluation (ability to work with a mask) and medical monitoring;• Respiratory mask fit test. <p>The approach used to identify and quantify contaminants based on situations that may require respiratory protection is presented in the section <i>Contaminant identification and required respiratory protection</i>. This specifically applies to asbestos and silica work. Where asbestos is concerned, one should refer to procedure <i>QE-EHS-13.9.6 Asbestos</i>. Work likely to emit silica dust should be evaluated to determine suitable work methods and means of protection to reduce exposure of workers to a minimum. At any given time, silica concentration cannot exceed the limit value of professional exposure.</p>																																								
<p>5. Methodology and Obligations</p> <p><i>Identification of Contaminants and Required Respiratory Protection</i></p>	<p>For each work situation described in Table 1, contaminants that pose a risk to the worker’s health and safety through airway exposure are identified. It should be noted that this list is not exhaustive. It serves to illustrate the approach for a specific project.</p> <p style="text-align: center;">TABLE 1: Examples of work situations involving risks</p> <table><tr><th>Work situation</th><th>Contaminants present</th><th>Assessment of concentration</th><th>Comments</th></tr><tr><td>Building an observation well</td><td><ul style="list-style-type: none">• Crystalline silica sand• Portland cement• Bentonite</td><td></td><td>Work outdoors and of a short duration (< 15 min) that is repeated less than 10 times during a work shift</td></tr><tr><td>Washing sampling tools</td><td><ul style="list-style-type: none">• Hexane• Acetone</td><td></td><td>Work outdoors</td></tr><tr><td>Mixing biopiles</td><td><ul style="list-style-type: none">• VOC (BTEX)• Unclassified dust</td><td></td><td>Work outdoors</td></tr><tr><td>Decontamination work on buildings</td><td><ul style="list-style-type: none">• Asbestos• Lead paint• PCB paint</td><td></td><td></td></tr><tr><td>Emptying or filling filters</td><td><ul style="list-style-type: none">• Crystalline silica sand• Dust (GAC)• Used Ultrasorption</td><td></td><td></td></tr><tr><td>Sampling observation wells</td><td><ul style="list-style-type: none">• VOC (BTEX)</td><td></td><td>Work outdoors</td></tr><tr><td>Soil sampling</td><td><ul style="list-style-type: none">• Various</td><td></td><td>Work outdoors</td></tr><tr><td>Air sampling (monitoring method)</td><td><ul style="list-style-type: none">• VOC (BTEX)</td><td></td><td></td></tr><tr><td>Biogas sampling</td><td><ul style="list-style-type: none">• CH₄• H₂S</td><td></td><td>Work outdoors</td></tr></table> <p>BTEX: Benzene, Toluene, Ethylbenzene and Xylenes CH₄: Methane GAC: Granular Activated Carbon H₂S: Hydrogen Sulfide PCB : Polychlorinated Biphenyls VOC: Volatile Organic Compounds</p> <p>Contaminants are quantified using sampling and analysis methods described in the <i>Institut de recherche Robert-Sauvé en santé et en sécurité du travail</i> (IRSST)’s Sampling Guide for Air Contaminants in the Workplace, 8th edition.</p>	Work situation	Contaminants present	Assessment of concentration	Comments	Building an observation well	<ul style="list-style-type: none">• Crystalline silica sand• Portland cement• Bentonite		Work outdoors and of a short duration (< 15 min) that is repeated less than 10 times during a work shift	Washing sampling tools	<ul style="list-style-type: none">• Hexane• Acetone		Work outdoors	Mixing biopiles	<ul style="list-style-type: none">• VOC (BTEX)• Unclassified dust		Work outdoors	Decontamination work on buildings	<ul style="list-style-type: none">• Asbestos• Lead paint• PCB paint			Emptying or filling filters	<ul style="list-style-type: none">• Crystalline silica sand• Dust (GAC)• Used Ultrasorption			Sampling observation wells	<ul style="list-style-type: none">• VOC (BTEX)		Work outdoors	Soil sampling	<ul style="list-style-type: none">• Various		Work outdoors	Air sampling (monitoring method)	<ul style="list-style-type: none">• VOC (BTEX)			Biogas sampling	<ul style="list-style-type: none">• CH₄• H₂S		Work outdoors
Work situation	Contaminants present	Assessment of concentration	Comments																																						
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Air sampling (monitoring method)	<ul style="list-style-type: none">• VOC (BTEX)																																								
Biogas sampling	<ul style="list-style-type: none">• CH₄• H₂S		Work outdoors																																						

Table 2 presents the sampling and analysis methods for various contaminants.

TABLE 2: Sampling and Analysis Methods

Contaminant	IRSST Method	Sampling device	Analysis method
Crystalline silica	78-1 or 206-2	In-line cyclone with polyvinyl chloride filter (0.8 microns, 37 mm pre-weighted)	<ul style="list-style-type: none">FTIR or XRD
Hexane	141-2	SKC activated carbon tube #ST226-01 (7 cm long, 100/50 mg of carbon)	<ul style="list-style-type: none">Desorption/digestion in carbon disulfideAnalysis by GC_FID
Acetone	22-2	SKC activated carbon tube #ST226-01 (7 cm long, 100/50 mg of carbon)	<ul style="list-style-type: none">Desorption/digestion in carbon disulfideAnalysis by GC_FID
Benzene	24-3	SKC activated carbon tube #ST226-01 (7 cm long, 100/50 mg of carbon)	<ul style="list-style-type: none">Desorption/digestion in carbon disulfideAnalysis by GC_FID
Toluene	16-2	SKC activated carbon tube #ST226-01 (7 cm long, 100/50 mg of carbon)	<ul style="list-style-type: none">Desorption/digestion in carbon disulfideAnalysis by GC_FID
Ethylbenzene	250-1	SKC activated carbon tube #ST226-01 (7 cm long, 100/50 mg of carbon)	<ul style="list-style-type: none">Desorption/digestion in carbon disulfideAnalysis by GC_FID
Xylenes	101-2	SKC activated carbon tube #ST226-01 (7 cm long, 100/50 mg of carbon)	<ul style="list-style-type: none">Desorption/digestion in carbon disulfideAnalysis by GC_FID
Asbestos	243-1	Mixed cellulose ester filters with cassette equipped with conductive extension (0.8 microns, 25 mm)	<ul style="list-style-type: none">Analysis by PCOM
Lead dust	13-2	Mixed cellulose ester filters (0.8 microns, 37 mm)	<ul style="list-style-type: none">Desorption/digestion in nitric and perchloric acid (4:1), hydrochloric conc. and nitric conc.Analysis by FAAS
Unclassified dust	48-1	Polyvinyl chloride filter (0.8 microns, 37 mm pre-weighted)	<ul style="list-style-type: none">Analysis by MW

GC_FID: Gas chromatography – flame ionization detection
FTIR: Fourier transform infrared spectroscopy
XRD: X-ray diffraction
PCOM: Phase contrast optical microscopy
FAAS: Flame atomic absorption spectroscopy
MW: Measure of weight

A table based on the Table 3 template is used to report contaminant concentration results in the work area and to list the required RPE.

13.9.2 RESPIRATORY PROTECTION

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TABLE 3: Contaminant Concentrations

Work situation	Contaminants present	Results	RPE required
Building an observation well	<ul style="list-style-type: none"> • Crystalline silica sand • Portland cement • Bentonite 		
Washing sampling tools	<ul style="list-style-type: none"> • Hexane • Acetone 		
Mixing biopiles	<ul style="list-style-type: none"> • VOC (BTEX) • Unclassified dust 		
Decontamination work on buildings	<ul style="list-style-type: none"> • Asbestos • Lead paint • PCB paint 		
Emptying or filling filters	<ul style="list-style-type: none"> • Crystalline silica sand • Dust • Used Ultrasorption® (BTEX) 		
Sampling observation wells	<ul style="list-style-type: none"> • VOC (BTEX) 		
Soil sampling	<ul style="list-style-type: none"> • VOC (BTEX) 		
Air sampling (monitoring method)	<ul style="list-style-type: none"> • VOC (BTEX) 		
Biogas sampling	<ul style="list-style-type: none"> • CH₄ • H₂S 		

BTEX : Benzene, Toluene, Ethylbenzene and Xylenes

CH₄: Methane

H₂S: Hydrogen Sulfide

PCB: Polychlorinated Byphenyls

VOC: Volatile Organic Compounds

6. Training and Awareness

The ***Respiratory protection and mask fit*** training is required for all employees who use respiratory masks.

13.9.3 HEARING PROTECTION

1. Object and Scope	<p>This procedure outlines the methodology used to protect all QIKIQTAAALUK workers against the hazards related to noise in their work environment. The procedure aims to identify and control noisy areas and to identify and protect employees who are at risk of developing hearing loss caused by occupational exposure to noise. It applies to all QIKIQTAAALUK departments.</p>
2. References	<ul style="list-style-type: none"> CSA Z94.2-94 Act Respecting Occupational Health and Safety, AROHS Regulation respecting the quality of the work environment
3. Acronyms and Definitions	<p>dB: decibel</p> <p>EHS: Environment, health and safety</p>
4. Methodology and Obligations <i>General Information</i>	<p>Occupational noise is a prevention issue. Noise can cause deafness, and physical or psychological stress. It can also present a source of risks when it makes it difficult to hear hazard alarms.</p> <p>The <i>Regulation respecting the quality of the work environment</i> defines the types of noise and presents the standards to which we must comply. The standards to comply with are based on the noise level (indicated in decibels) and the duration of exposure.</p> <p>Under the occupational health and safety laws and regulations, standards must be complied with by implementing various measures to control or reduce noise, such as reducing noise at the source or preventing it from propagating. However these measures are not always possible. In such a case, we must individually protect the persons exposed to noise. QIKIQTAAALUK will provide hearing protection to its employees who are exposed to noise</p>
5. Methodology and Obligations <i>Noise Exposure Criteria</i>	<p>Individual Exposure</p> <p>An employee is considered exposed to noise if he is at risk of developing hearing loss due to noise. Regular exposure to noise levels exceeding a weighted average of 90 dBA or “equivalent” (with a 3 dB range), as indicated in Table 1, is considered at risk for developing hearing loss due to noise.</p> <p>In this procedure, the expression of “exposed to noise” does not attempt to draw the line between safe exposure and hazardous exposure. It must be recognized that some people are more sensitive than others to the effects of noise and can develop occupational hearing loss by being exposed to noise levels between 80 and 85 dBA. Even if the risk for exposure between 80 and 85 dBA is less than for regular exposure to levels above 85 dBA, employees who work in such situations should be informed and protective equipment should be made available to them. In addition, an employee is considered exposed to noise if he is regularly exposed to impact noises with a frequency and an acoustic pressure greater than the values presented in Table 2.</p> <p>Noisy Area</p> <p>An area or workspace is considered at risk if noise levels are regularly equal to or greater than 90 dBA.</p>

TABLE 1: Exposure to Continuous Noise

Duration of exposure permitted (h/day)	Noise level in dBA, corrected dBA or equivalent dBA*	
	Quebec	Ontario
16	85	82
12	87	-
8	90	85
4	95	88
2	100	91
1	105	94
½	110	97
¼	112	100
0	115	112

* this includes any continuous exposure or series or short exposures during a worker's work shift.




TABLE 2: Impact Noise

Noise level in (dB) Peak linear value	Number of impacts permitted (for an 8-h period)
> 140	0
140	100
135	316
130	1,000
125	3,162
120	10,000

6. Methodology and Obligations
Evaluation of Noise Levels

High-level noise areas and employees exposed to noise will be identified by the EHS department in collaboration with the customer service directors and supervisors concerned. To do so, evaluation of noise levels and dosimetry will be use.










If areas are identified as noisy, regular follow-ups (annual) will be carried out. If changes are made to the operating equipment, the director or head of department will contact the health and safety department so that noise levels may be re-evaluated. Signs are used to identify noisy areas.

<div>7. Methodology and Obligations</div> <div>Noise Control Measures</div>	<div>Engineering Controls</div> <p>It is preferable to put engineering controls in place to reduce noise directly at the source. Each situation must be assessed to determine the most practical and efficient way of reducing noise. Depending on the circumstances, potential improvements may include replacement by less noisy equipment, barriers, vibration reduction, source isolation, acoustic enclosures and others.</p> <p>When purchasing new equipment, attention must be paid to its noise level and the risk that it poses to employees that are called upon to use it. Before buying equipment, characteristics that relate to noise must be checked and taken into consideration for their long term impact, especially if the noise level at the source is greater than 90 dBA.</p> <div>Administrative Controls</div> <p>When engineering controls are not practical or achievable, work methods will have to be readjusted and schedules reorganized to reduce the length of exposure to noise.</p> <p>Signs must be posted near areas where the noise level regularly exceeds 90 dBA. These signs must indicate that hearing protection is mandatory to access the area. If a machine or a tool generates a high level of noise, a label or sign must be placed directly on the machine or tool informing the operator that appropriate protective equipment must be worn.</p> <p>Regular equipment and machine maintenance has a significant impact on noise control since well-maintained equipment is generally quieter, in addition to working better and being more reliable.</p>						
<div>8. Methodology and Obligations</div> <div>Hearing Protection Equipment</div>	<p>There are various models of hearing protectors. Each has its advantages and disadvantages. The important part is to choose protectors that will meet the user's needs and that may easily be adjusted and maintained. Hearing protectors must comply with CSA Z94.2-94 Hearing Protectors.</p> <p>Wearing hearing protection equipment when exposed to noise levels below 90 dBA is a personal decision and protective equipment will be provided upon request.</p> <div>Most Common Hearing Protectors</div> <table><tr><th></th><th>Advantage</th><th>Disadvantage</th></tr><tr><td><div>Ear muffs</div></td><td><p>Practical for intermittent use.</p><p>Easier to adjust than plugs.</p><p>Can be worn during ear infections.</p><p>Slightly better at blocking out low-pitched sounds than plugs.</p></td><td><p>Not very comfortable in extreme heat.</p><p>Reduced effectiveness when wearing glasses or a hat.</p><p>Cumbersome.</p><p>Puts an uncomfortable pressure on the skull.</p></td></tr></table>		Advantage	Disadvantage	<div>Ear muffs</div> 	<p>Practical for intermittent use.</p> <p>Easier to adjust than plugs.</p> <p>Can be worn during ear infections.</p> <p>Slightly better at blocking out low-pitched sounds than plugs.</p>	<p>Not very comfortable in extreme heat.</p> <p>Reduced effectiveness when wearing glasses or a hat.</p> <p>Cumbersome.</p> <p>Puts an uncomfortable pressure on the skull.</p>
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13.9.3 HEARING PROTECTION

Document no: QE-EHS-13.9.3-PR
Last updated: 2013-03-20



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<div>9. Methodology and Obligations</div> <div><i>Audiometric Tests</i></div>	<p>Hearing loss occurs gradually and can go unnoticed for a long period of time, until symptoms related to difficulties in communicating or hearing properly appear. Damage is permanent and non-reversible. Hearing loss may be prevented by controlling noise and implementing measures to preserve hearing.</p> <p>Regular audiometric tests allow detection of hearing loss early on. A change in an employee’s hearing profile can indicate to the examiner that the conditions in his work environment have changed or that the employee is not wearing his equipment appropriately. It is important to understand that the audiometric test cannot not prevent hearing loss, but is rather a way to measure and quantify the effectiveness of the prevention program.</p> <p>All employees that are at risk for hearing loss related to occupational noise must pass an audiometric test. All new employees assigned to operations must pass an audiometric test during their medical entrance exam.</p>												
<div>10. Roles and Responsibilities</div>	<div>Employees</div> <ul style="list-style-type: none">• Attend hearing protection training, as required;• Participate in the audiometric monitoring program;• Use hearing protection equipment when required;• Report any hazardous situation or any doubts to your supervisor. <div>Supervisors</div>												

	<ul style="list-style-type: none"> • Make sure that employees under your responsibility have received training, are aware of risks related to noise, and know how to use hearing protection equipment; • If hearing protection is required, the supervisor must make sure that employees for which he is responsible observe instructions and, if required, must apply the appropriate disciplinary measures. <p>EHS Department</p> <ul style="list-style-type: none"> • Elaborate and put a hearing protection procedure in place; • Carry out noise level evaluations and personal evaluations; • Offer technical services and advice on control means and hearing protection; • Supply appropriate training to employees and supervisors. <p>Director and Project Managers</p> <ul style="list-style-type: none"> • Identify the noisy areas for their operations and the workers exposed to these areas; • Put the appropriate means in place to reduce the risks of hearing loss, including, but not limited to, engineering controls if possible, or by providing appropriate protection equipment. <p>Management</p> <ul style="list-style-type: none"> • Make sure that the hearing protection program is implemented and that all operations they oversee comply with this program.
11. Training and Awareness	<p>All employees who are exposed to noise or who must wear hearing protection equipment must receive training from the EHS department. The course may be part of integration, orientation (for specific projects) or annual training.</p>

13.9.4 MATERIAL SAFETY DATA SHEETS

1. Object and Scope	This procedure outlines the methodology used to help all QIKIQTAAALUK workers to stay informed and safely handle hazardous substances at work. It applies to all QIKIQTAAALUK departments.
2. References	Act Respecting Occupational Health and Safety (AROHS)
3. Acronyms and Definitions	<ul style="list-style-type: none"> • MSDS: Material Safety Data Sheet • WHMIS: Workplace Hazardous Materials Information System • GHS: Globally Harmonized System
4. Methodology and Obligations <i>General Information</i>	<p>The MSDS is a document that provides information on a controlled product, pertaining to toxic effects, protective measures to avoid overexposure and chemical risks as well as procedures to follow in case of an emergency.</p> <p>A controlled product is a hazardous substance that meets the hazard criteria defined in the <i>Controlled Products Regulations</i>. Information provided on the MSDS completes the information found on the label of the controlled product. It is essential to consult the MSDSs of products before using them to become familiar with the precautions to take when handling them.</p> <p>The MSDS is provided to the employer by the supplier when the product is purchased. The employer must keep it on the work site, in a place known to all workers and which can easily and quickly be accessed by those who risk coming into contact with the product. At the Rivière-des-Prairies warehouse, the MSDSs are available at the cafeteria entrance.</p> <p>Technicians must have in their vehicle the MSDSs for the products they commonly use on site (e.g. hexane, acetone). These substances must be stored according to the MSDS instructions. All hazardous substance containers must be correctly identified. Emergency equipment and first aid tailored to the products being used must be available at all times on the work site.</p> <p>For a specific project, the MSDSs for the products with which the workers may come into contact must be available and readily accessible on site.</p>
5. Methodology and Obligations <i>Information Disclosed on an MSDS</i>	<p>The MSDS contains 9 categories of information. The information may be presented under the following titles or equivalent titles:</p> <ul style="list-style-type: none"> • Product information; • MSDS preparation information; • Hazardous ingredients; • Physical Data; • Risk of fire or explosion; • Reactivity; • Toxicological properties; • Preventive measures; • First aid.

6. Methodology and Obligations
WHMIS

In the context of the company’s current operations, the use of hazardous substances is inevitable. All Qikiqtaaluk workers who are in direct contact with these substances must have received WHMIS training, which is renewable every 3 years.

WHMIS is the Canadian standard for communicating hazard information. Complete information on health and safety is transmitted by means of caution labels on the “controlled product” containers, MSDSs and training programs for workers. WHMIS is implemented by federal, provincial and territorial laws. Requirements that apply to suppliers relate to MSDSs and labels, and are listed in the *Hazardous Products Act* and the *Controlled Products Regulations*.

The supplier’s label must be legible and affixed on the containers of controlled products. Illegible or lost labels must be replaced by a label from the employer. Removing or modifying the supplier’s label is strictly forbidden. When a product is transferred to another container, a label from the employer must be affixed to the new container. The label from the employer as a minimum should display the following information:

- Product name;
- Precautions for handling the product;
- A sentence indicating that a MSDS is available.

WHMIS Hazard Symbols

Controlled products fall into one or more of the following classes and each class has its own hazard symbol.

CLASS A



Compressed Gas

CLASS B



Flammable and Combustible Material

CLASS C



Oxidizing Material

CLASS D



1. Materials Causing Immediate and Serious Toxic Effects



2. Materials Causing Other Toxic Effects



3. Biohazardous Infectious Materials

CLASS E



Corrosive Material

CLASS F



Dangerously Reactive Material

7. Training and Awareness	<p>QIKIQTAALUK has the obligation of ensuring that its employees have received the appropriate training if they use and handle hazardous substances as part of their job, as stipulated in Section 62.5 of the Act Respecting Occupational Health and Safety.</p> <p>All people likely to be in contact with controlled products should know:</p> <ul style="list-style-type: none">• What these controlled products are;• What means to take to protect themselves against the hazards associated to these products;• Use, handling, storage and elimination procedures;• Specific technical controls to use (ventilation, etc.);• Required PPE;• Where to find more information about the product;• What procedures to follow in case of an emergency.
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13.9.5 RADIATION

13.9.5 RADIATION

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Last updated:



The procedure for radiation is currently being developed. It is forbidden to undertake work where workers are exposed to radiation risks without obtaining approval from the environment, health and safety director.

13.9.6 ASBESTOS

1. Object and Scope	This procedure outlines the methodology used to protect all QIKIQTAAALUK workers against respiratory dangers related to works involved with asbestos. It applies to all QIKIQTAAALUK departments.
2. References	<ul style="list-style-type: none"> Works liable to generate asbestos powder should comply with the updated criteria of the Safety Code for the construction industry, S-2.1, r. 6. Regulation on Health and Safety at work.
3. Acronyms and Definitions	<p>SCCI: Safety Code for the Construction Industry</p> <p>PPE: Personal Protection Equipment</p> <p>ACM: Asbestos Containing Material</p> <p>OHSR: Occupational Health and Safety Regulations</p> <p>TDGR: Transportation of Dangerous Goods Regulations</p> <p>TDG: Transportation of Dangerous Goods</p> <p>WSCC: Workers' Safety and Compensation Commission</p> <p>TWAEV: Time-weighted average exposure. It is the average concentration for an 8-hour workday and a 40-hour workweek.</p> <p>High Efficiency Particulate Air (HEPA) or P-100: Filter capable of filtering particles of 0.3 µm in size at an efficiency rate of at least 99.97%.</p> <p>Friable Asbestos Containing Material: Material containing 0.1% or more asbestos, <u>which can be</u> crumbled, pulverized or reduced to powder in the hand when dry. This material poses a higher risk of exposing people to airborne asbestos fibers. (SCCI, Art. 1.1).</p>
4. Methodology and Obligations <i>General Information</i>	<p>Asbestos is a natural fibrous rock which exists in different varieties. Among those mostly used in Quebec, we can find the chrysotile belonging to the rock-forming minerals of the serpentine group as well as the crocidolite from the amphibole group.</p> <p>The use of amosite, crocidolite or any product containing either of those matters is banned in Quebec since 1990. Asbestos is a substance known for its insulating, flame- retardant, acoustic, and electrical qualities. This explains its great popularity in the construction industry since 1930 till 1980. With years, it came to know that asbestos can be harmful for health and its use has decreased considerably.</p> <p>A significant amount of asbestos is still found in Quebec. Products and materials which contain asbestos can be found in:</p> <ul style="list-style-type: none"> Sealing materials; Gaskets boilers, kilns, water heater, refrigeration equipment, chimneys, steam pipes and hot water; Products used in construction: stucco, plaster, sealant, glue, underground pipeline, construction paper, roofing felts, floor covering (tile and prelate), ceiling tiles, and electrical cables, etc.; Brake pads; Heat resistant clothes and gloves; Asbestos-cement products (pipes and water and waste water pipelines, roofing and exterior wall panels;

	<ul style="list-style-type: none"> Fire blankets. <p>According to the SCCI and OHSR, any material with a concentration of asbestos of at least 0, 1 %, is considered as a material containing asbestos.</p>						
<p>5. Methodology and Obligations</p> <p><i>Asbestos Risks and Effects on Health</i></p>	<p>Asbestos fibers found in friable materials can easily detach during manipulations, shocks or vibrations. Other non-friable materials but which are sawn, cut, pierced or damages are equally dangerous. Asbestos fibers are extremely thin and they can easily spread in ambient air. This is when it becomes dangerous as the fibers are inhaled, enter the respiratory system and deposit deep in the lungs.</p> <p>In general, the risk of contracting a disease related to asbestos increases according to the number of fibers inhaled as well as the length of exposure. All types of asbestos fibers have a carcinogenic effect to humans.</p> <p>The 3 main diseases linked to asbestos exposure are :</p> <ul style="list-style-type: none"> Asbestosis Disorder: Disease caused by the accumulation of asbestos fibers into the pulmonary alveoli. With time, these fibers are wrapped with scar tissues which decrease the elasticity of the lungs, leading to breathing difficulties. The appearance symptoms may take from 15 to 20, years after exposure; Lung Cancer: It seems that the risk of developing lung cancer is 5 times higher than those who have not been exposed to asbestos fibers. The appearance symptoms may take from 20 to 30 years, after initial exposure; Mesothelioma: It is a rare form of cancer that affects the membrane lining of lungs (pleural) and abdomen (peritoneal). There is a long latency period before the first sign of the disease that is from 30 to 40 years, after initial exposure. <p>These 3 diseases are progressive and irreversible. As for pleural plaque formation (fibrous thickening of pleura), they are not diseases. They indicate however, the presence of asbestos fibers in the lungs.</p> <p>Exposure standards in Quebec are :</p> <table border="1"> <thead> <tr> <th>Type of Asbestos</th><th>ROHS Norm (TWAEV)</th></tr> </thead> <tbody> <tr> <td>Actinolite, anthophyllite, chrysotile, tremolite</td><td>1 fiber/cm³</td></tr> <tr> <td>Amosite, crocidolite</td><td>0.2 fiber/cm³</td></tr> </tbody> </table> <p>The TWAEV for other provinces and US is 0.1 fiber/cm³ for all types of Asbestos.</p> <p>Practical measures should be taken for any work done by Qikiqtaaluk, to minimize and control employee exposure to health hazards.</p>	Type of Asbestos	ROHS Norm (TWAEV)	Actinolite, anthophyllite, chrysotile, tremolite	1 fiber/cm ³	Amosite, crocidolite	0.2 fiber/cm ³
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<div>6. Methodology and Obligations</div> <div>Types of Work and General Measures</div>	<p>The SCCI divides any construction site where work is liable to produce asbestos dust emissions is carried out in 3 categories, according to their risk levels.</p> <div>1. <u>Low Risk Work, for example:</u></div> <ul style="list-style-type: none"> • The installation, handling, or removal of manufactured goods containing asbestos, provided they are and remain in a non-friable condition, such as vinyl tiles, acoustic tiles, gaskets, seals, asbestos cement products; • The sawing, cutting, shaping or drilling of a product with a hand tool or a power tool fitted with a dust-collection device equipped with a high-efficiency filter; • The removal of drywall installed with asbestos joint-filling compounds; <div>2. <u>Moderate Risk Work, for example:</u></div> <ul style="list-style-type: none"> • The total or partial removal of false ceilings for the purpose of gaining access to a work area where ACM are found; • The setting up of wires flocked with asbestos in false; • The handling or removal of small quantities of friable materials containing asbestos having a volume of debris not exceeding 0.03³ for each minor renovation or regular specific maintenance job; • Any work that is liable to produce asbestos dust emissions and that is not classified as low or high-risk; • Removal of lengthy asbestos sealed pipe with gloves bag. <div>3. <u>High Risk Work, for example:</u></div> <ul style="list-style-type: none"> • The cleaning or removal of a ventilation system, including rigid ducts, in buildings where the insulation contains asbestos applied by spraying; • The enclosure of friable material containing asbestos by the spray application of a sealant; • The repair, alteration or demolition of kilns, boilers or similar devices made entirely or partly of refractory materials containing asbestos; • The use of power tool not fitted with a dust-collection device equipped with a high-efficiency filter to grind, cut, drill or abrade an ACM product. • The handling or removal of small quantities of friable materials containing asbestos having a volume of debris not exceeding 0.03³ for each minor renovation or regular specific maintenance job; • The total or partial removal of false ceilings where friable ACM are found, if the volume of debris exceeds 0.03³ for each minor renovation or regular specific maintenance job. <div><u>General Measures</u></div> <ul style="list-style-type: none"> • The use crocidolite or amosite or any product containing either of those materials is not allowed, except when their replacement is not reasonable or feasible in practice. (ref.: SCCI Art.3.23.1).
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	<ul style="list-style-type: none"> Materials liable to generate asbestos dust shall be removed before undertaking any demolition work. (ref.: SCCI Art. 3.23.3.2). Never use compressed air in work areas, except when compressed air is necessary to operate a respirator. (ref.: SCCI Art. 3.23.5). Never smoke, eat, drink or chew any substance in work areas liable to generate asbestos dust. (ref.: SCCI Art.3.23.6). The principal contractor must notify the WSCC in writing (complying with SCCI Art 2.4.1) of the opening of a construction site at least 10 days before activities at the site begin. The Commission must also be notified of the closing of the construction site. Friable materials that contain asbestos and that are likely to be spread shall be kept thoroughly wetted for the duration of the work, except where the procedure may create a danger to the health, safety and physical integrity of the worker and where the danger cannot be eliminated by another means. (ref.: SCCI Art.3.23.9). Before moving kilns, boilers or similar devices made entirely or partly of refractory materials containing asbestos, the employer shall cover them entirely with an airtight film. (ref.: SCCI Art.3.23.9.1). Where work is being carried out outside, the employer shall also prevent the dispersal of the debris of materials containing asbestos by using airtight film or any other equivalent means. (ref.: SCCI Art.3.23.10). Clean all drop sheets (used to protect work area) and those intended for re-use with a vacuum cleaner equipped with a high-efficiency filter. (ref.: SCCI Art.3.23.11). Drop sheets intended for disposal must first be wet, then folded so that they hold all the dust that they have <i>collected</i> and, finally, placed in an airtight container. (ref.: SCCI Art. 3.23.11). The work area and the area around it must be cleaned with a vacuum cleaner equipped with a high-efficiency filter or by damp wiping the surfaces and then cleaning them. (ref.: SCCI Art. 3.23.12). Train and inform workers about the hazards of exposure. (See Section 12: Training and Awareness). <p><u>Personal protection equipment</u></p> <p>Ensure that any worker on construction site wear the following PPE:</p> <ul style="list-style-type: none"> Protective footwear complying with CSA Standard Z195-M1984, Protective Footwear and that is fitted with soles that do not slip on wet surface. (ref.: SCCI Art.3.23.14.); A certified safety hat in accordance with CSA Standard Z94.1 1-M1977 Industrial Protective Headwear. (ref.: SCCI Art. 2.10.3.). <p>Moreover, it is recommended that workers wear mittens or gloves (ref.: SCCI Art. 2.10.10.) to protect themselves from cuts as well as eye protection; such as safety goggles (ref.: SCCI Art. 2.10.5.) to protect themselves from projection of particles.</p> <p>The PPEs and precautions to be taken vary according to the level of work risk met (see Section – Different Work Category Requirements According to their Risk Levels).</p>
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<p>7. Methodology and Obligations</p> <p><i>Identification</i></p>	<p>Post a sign at the entrance to each work area to inform them about the work in process (Moderate or High risk level).</p> <p>That sign should respect the following criteria (ref.: SCCI Art. 3.23.15.-11):</p> <ul style="list-style-type: none"> It shall be yellow; Be 500 mm high by 350 mm wide; Shall be written in black; Present the information in the following order and in the size specified below: <table border="1"> <thead> <tr> <th>Information</th><th>Size of Lettering</th></tr> </thead> <tbody> <tr> <td>ASBESTOS</td><td>50 mm</td></tr> <tr> <td>DANGER</td><td>40 mm</td></tr> <tr> <td>Do not breathe dust</td><td>15 mm</td></tr> <tr> <td>Protective equipment must be worn</td><td>15 mm</td></tr> <tr> <td>No admittance</td><td>15 mm</td></tr> <tr> <td>Inhaling asbestos dust may be harmful to your health</td><td>10 mm</td></tr> </tbody> </table>	Information	Size of Lettering	ASBESTOS	50 mm	DANGER	40 mm	Do not breathe dust	15 mm	Protective equipment must be worn	15 mm	No admittance	15 mm	Inhaling asbestos dust may be harmful to your health	10 mm
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No admittance	15 mm														
Inhaling asbestos dust may be harmful to your health	10 mm														
<p>8. Methodology and Obligations</p> <p><i>Different Work Category Requirements According to their Risk Levels</i></p>	<p>OHSR demands that the control of the emission of asbestos dust is done in accordance with the SCCI code. The code defines 3 work categories. The following tables indicate the precautions to be taken according to the 3 risk levels.</p> <p><u>REQUIREMENT TABLE FOR LOW-RISK WORK</u></p> <table border="1"> <thead> <tr> <th>Worker's Protection</th><th>Collective Prevention and Protection</th></tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> Protective footwear that is fitted with soles that do not slip on wet surface Certified safety helmet Gloves and safety goggles are recommended </td><td> <ul style="list-style-type: none"> Determine the presence of asbestos and identify the types (laboratory analysis). Establish prevention measures and work methods. Train workers in accordance with the SCCI standards. Provide the WSCC with a notification of the opening of a construction site. Remove all furniture from the work area or protect them by airtight film. </td></tr> </tbody> </table>	Worker's Protection	Collective Prevention and Protection	<ul style="list-style-type: none"> Protective footwear that is fitted with soles that do not slip on wet surface Certified safety helmet Gloves and safety goggles are recommended 	<ul style="list-style-type: none"> Determine the presence of asbestos and identify the types (laboratory analysis). Establish prevention measures and work methods. Train workers in accordance with the SCCI standards. Provide the WSCC with a notification of the opening of a construction site. Remove all furniture from the work area or protect them by airtight film. 										
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Worker's Protection	Collective Prevention and Protection
<p align="center">RESPIRATORY PROTECTION</p> <ul style="list-style-type: none"> • Disposable mask of type P-100 certified FFP2 for ACM sample collection. • Filtering half masks of type P-100 for the sawing, cutting, shaping or drilling of a product with a hand tool or a power tool fitted with a dust-collection device equipped with a high-efficiency filter and the removal of drywall installed with asbestos joint-filling compounds. • No respiratory protection required for the installation or removal of products manufactured without damage, machining or destruction including unscrewing. 	<ul style="list-style-type: none"> • Where work is being carried out outside, prevent the dispersal of the debris of MCA (airtight film or any other equivalent means). Upon completion of work, work area and the area around it must be cleaned with a vacuum cleaner equipped with a high-efficiency filter or by damp wiping the surfaces and then cleaning them.

REQUIREMENT TABLE FOR MODERATE-RISK WORK

Worker's Protection	Collective Prevention and Protection
<ul style="list-style-type: none"> • Protective footwear that is fitted with soles that do not slip on wet surface; • Certified safety helmet; • Gloves and safety goggles are recommended; • Protective clothing (Type Tyvek) shall be worn and the clothing gown shall be used exclusively for carrying out such work. <p style="text-align: center;">RESPIRATORY PROTECTION</p> <ul style="list-style-type: none"> • Half mask equipped with a high efficiency filter; • Half-face piece or full-face piece respirator equipped with a high-efficiency filter in the presence of crocidolite or amosite and for any work not classified as low or high-risk. 	<p>In addition to the measures described previously:</p> <ul style="list-style-type: none"> • Remove, before and regularly during work, all ACM friable with a vacuum equipped with a high-efficiency filter or after having thoroughly wetted them; • During the removal of friable MCA, work area must be sealed off with an asbestos airtight enclosure; • Isolate the work area with an enclosure made of materials impervious to asbestos fiber during the removal of false ceilings for the purpose of gaining access to a work area where friable MCA are found and having a volume of debris not exceeding 0.03³; • Protect the building's ventilation system from any contamination; • Post a sign at the entrance of each work area to inform people of work in progress; • Always keep friable MCA thoroughly wetted, except when dangerous (e.g.: electricity); • To move them, cover structures made of ACM (e.g.: oven) with water-proof membrane;

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- During the removal of asbestos sealed pipe, the dust emission zone shall also be sealed off. The workers will be in contact with the pipe through the use of gloves bag and this is highly prioritized.
- At the End of Work:**
- Work clothes and protective footwear shall be cleaned by means of a vacuum cleaner equipped with a high-efficiency filter and place in airtight bag. If they are disposable, wet and fold them to trap the dust and place in water-proof container;
 - Disposable protective clothing should be placed in a plastic bag and ensure that it is hermetically sealed ;
 - Ensure that all reusable protective clothing, respiratory mask, safety helmets and protective footwear is washed or cleaned before leaving work area.

REQUIREMENT TABLE FOR HIGH-RISK WORK

Worker's Protection	Collective Prevention and Protection
<ul style="list-style-type: none">• Protective footwear that is fitted with soles that do not slip on wet surface• Certified safety helmet• Gloves and safety goggles are recommended• Protective clothing (Type Tyvek) shall be worn and the clothing gown shall be used exclusively for carrying out such work <p>RESPIRATORY PROTECTION</p> <ul style="list-style-type: none">• For any work using electric tools not fitted with thoroughly wetted friable materials containing asbestos and whose volume of debris exceeds 0.03m³ (1 pi³) without exceeding 0.3m³ (10 pi³): <p>Half-face or full-face respirator with a high-efficiency filter complying with one of the following types :</p> <ul style="list-style-type: none">➢ A powered air-purifying respirator➢ A supplied-air respirator operated in <u>continuous –flow</u> positive-pressure mode or in a pressure <u>demand</u> mode with positive pressure	<p>Volume of debris exceeding 0.03 m³ (1 pi³) without exceeding 0.3 m³ (10 pi³):</p> <p>In addition to the measures described previously:</p> <ul style="list-style-type: none">• Display information on hazards and safety measures in force;• Sealing off the work area from the rest of the building by an airtight enclosure that has an exhaust ventilation system;• Ensure that all workers apply the decontamination procedures to all workers. <p>Volume of Debris Exceeding 0.3 m³ (10 pi³):</p> <p>In addition to the measures described previously:</p> <ul style="list-style-type: none">• Take a sample of the concentration of airborne breathable asbestos fibers in the work area at least once per shift during the work. Obtain the results of those analyses within 24 hours and the results shall be recorded in a register that is available on the work premises during all the work;• A street clothes and work clothes changing rooms shall be installed and the changing rooms shall be separated by the shower room;

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- The diagram illustrates a contaminated zone with four distinct areas labeled A, B, C, and D. Zone A is a yellow rectangular area at the top right. Zone B is a red rectangular area below Zone A. Zone C is a red rectangular area below Zone B. Zone D is a red rectangular area at the bottom left. A green arrow points from Zone D towards Zone A, labeled 'CONTAMINATED ZONE'. The zones are separated by black lines, and there are small figures of people inside each zone.

- Diagram showing double changing rooms in a contaminated work zone (A): the worker removes his work clothes in first changing room (B), then takes a shower (C) and puts his street wear clothes in a second changing room (D).

9. Methodology and Obligations

Handling and Transportation of Asbestos Waste

During work, debris of materials containing asbestos must be placed in airtight containers appropriate to the type of debris, regularly during the work shift and the end of the work shift. Debris shall be removed by means of a vacuum cleaner equipped with a high-efficiency filter or by wetting the debris before it is removed. The containers shall be placed in such a way as to cause no inconvenience. (ref.: SCCI Art. 3.23.10.).

A label must be affixed to any receptacle containing asbestos material, whether new or used, unless the receptacle has already been labelled by a supplier in accordance with the Controlled Products Regulations (SOR/88-86).

The label must be permanently affixed and legible and must bear the following indications:

- Toxic by inhalation;
- Keep container tightly closed;
- Do not breathe dust.

Recommended Procedure

In addition to these regulations, it is recommended to apply more measures which aim to ensure that exterior air in work areas are not contaminated by asbestos fibers coming from containers containing asbestos waste materials:

- Use six mil polyethylene bags or waterproof barrels resistant to perforations;
- Make sure that containers are not overloaded. A particular attention must be given to cases where waste is wet. When containers are filled to their capacity, clean the surface with a moist sponge;
- If bag are used instead of barrels, proceed with one of the following ways before moving them from the work area: double bag or put the bags in a barrel;
- Seal asbestos waste receptors and remove them from work area;
- Place waste contents in a special container for this purpose or at a storage area until there is enough to be sent to a waste disposal site;
- Handle waste containers with care and do not throw them in containers (or at storage area), to avoid breakage and leakage of asbestos fibres into the air.

Transportation and Waste Disposal

The transportation of asbestos waste is subjected to TDGR since asbestos materials are classified as class 9.1 – miscellaneous dangerous goods.

This implies that the driver transporting asbestos waste must hold a training certificate on TDG. He needs to keep a copy of his training certificate as well as the shipping document which contains all necessary information on transported goods. Placarding of the vehicle is required for shipments of more than 500 kg.

As for the final disposal of asbestos waste, it can sometimes be subjected to some contractual requirements. It should be noted though that no governmental regulatory requirement exists yet. Thus, when not subjected to any contractual requirements, a landfilling Site which accepts this type of waste should be found, and they submit a report certifying that the waste will be buried immediately.

10. Methodology and Obligations <i>Recording and Disclosure of Information</i>	Recording and Disclosure of Information Register The employer must keep and update a register that must contain entries about the presence and type of asbestos in materials and the products which have been checked. It also mentions the nature and date of the work carried out on any material or products containing asbestos. The register also mentions the nature and date of works done on all material or asbestos containing product. Disclosure of Information The employer must disclose to every person who plans to or will carry out work liable to produce asbestos dust emissions the entries relevant to that work, so that the person may plan and implement the required measures. (OHSR 69.17).
11. Roles and Responsibilities	<p>In accordance with OHSR (Art. 69.11.), employer must check for the presence of asbestos in the materials and products likely to contain some, before undertaking any work liable to generate asbestos dust. He must also take the required measures to control the emission of asbestos dust before undertaking any work (Art. 69.14).</p> <p>SCCI Article 3.23.3 stipulates that employer has to determine the types of asbestos present in the materials before undertaking work liable to generate asbestos dust.</p> <p>Employer needs to take necessary measures to protect his employees' health and ensure their physical integrity. If the employer does not own the property, he is responsible for all materials and equipment which are under his authority.</p> <p>The person who intends or who will do works involving ACM must inform and advice all workers liable to be exposed to asbestos dust even; those who will be indirectly exposed.</p>
12. Training and Awareness	<p>Before undertaking work liable to emit asbestos dust, workers must be trained and informed of the risks, prevention methods and safe working methods by employers.</p> <p>The content of the workers' training program is shown in SCCI Article 3.23.7.</p> <p>The training and information program must contain at least:</p> <ul style="list-style-type: none"> • The employer's general obligations; • The effects of asbestos on health; • The standards applicable and the sampling to be carried out; • The worker's rights and obligations; • Individual and common protective devices and equipment; • The tasks to be carried out and the equipment and tools to be used; • Safe working methods and procedures; • Prevention and verification methods. <p>In the case that practical training is needed, it can be given through simulated or real work situation whilst ensuring workers' safety is not compromised; all must be done accordance with the safety procedures and practices.</p> <p>Workers will be given a certificate proving that they have received adequate training for any work involving asbestos on a construction site. A description of work methods and procedures used will have to be submitted to the WSCC at the opening of construction site.</p>

13.9.7 HAZARDOUS MATERIALS MANAGEMENT

13.9.7 HAZARDOUS MATERIALS MANAGEMENT	Document no: QE-EHS-13.9.7-PR Last updated: 2015-02-09	 Qikiqtaaluk environmental ᑭᑭᑭᑭᑭᑭ ᑭᑭᑭᑭᑭᑭ
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1. Object and Scope	<p>This procedure outlines the methodology used for safe management of chemical products from the moment of purchase to delivery at QIKIQTAAALUK sites, and to final disposal. It applies to all QIKIQTAAALUK departments.</p>
2. References	<p>Canadian Standards Association (CSA)</p>
3. Acronyms and Definitions	<p>Hazardous Waste: Used oil, used coal, used acetone, paint, paint thinners, alkaline batteries and rechargeable batteries, etc.</p> <p>EHS: Environment, Health and Safety</p> <p>LEL: Lower Explosive Limit</p> <p>OHSR: Occupational Health and Safety Regulations</p> <p>WHMIS: Workplace Hazardous Materials Information System.</p>
4. Methodology and Obligations <i>Inventory Management</i>	<p>When QIKIQTAAALUK project managers must order chemicals for their projects, they must first verify the whole inventory of the Rivière-des-Prairies (RDP) warehouse. If the chemicals are available in the inventory, the project manager must notify the RDP EHS coordinator by email to prepare the order and take the chemicals out of the inventory. If the coordinator is absent when one takes the chemicals out of the inventory, the coordinator must immediately be notified by email.</p>
5. Methodology and Obligations <i>Ordering and Storing</i>	<p>After ordering chemical products, project managers can choose between having them delivered to the Rivière-des-Prairies warehouse or directly to the QIKIQTAAALUK job site. The RDP EHS Coordinator or the technical supervisor must be notified beforehand of the type of chemical and the project number.</p> <p>Direct on-site delivery is preferred, since a lot more time is required for product management if products are delivered to the warehouse and this increases risks (temporary storage, preparing the transit manifest and plates, risks related to truck operation until arrival on-site).</p> <p>OHSR Article 72 states that storing and handling of dangerous goods must be performed so as to prevent accidental spilling or ignition. To this end, the following measures must be followed:</p> <ol style="list-style-type: none"> 1. Separate or isolate dangerous goods likely to catch fire or explode, release flammable or toxic gases when mixed to other goods; 2. Keep containers, piping and other devices in good condition; 3. In a safe manner, immediately clean any hazardous substance spilled on floors or on shelf racks; 4. A safe container should be used to transfer from one container to another, taking into account the condition and the nature of the poured hazardous substance.
6. Methodology and Obligations <i>Waste Management</i>	<p>When hazardous waste is generated on QIKIQTAAALUK sites, it must not be brought back to the RDP warehouse. Disposal costs are to be included in the project manager's budget.</p> <p>On the other hand, if the waste is brought back to the warehouse, the date of disposal must be communicated to the RDP EHS coordinator or technical supervisor as quickly as possible.</p>

<p>7. Methodology and Obligations</p> <p><i>Occupational Use of Hazardous Materials</i></p>	<p>Within the context of the company’s ongoing operations, the use of hazardous materials is unavoidable. All QIKIQTAAALUK workers who are in direct contact with these materials must have received WHMIS training.</p> <p>It is primordial that product MSDSs be consulted before using them to become familiar with handling precautions, required PPE, means of extinguishing, first aid, etc. Product MSDSs used at the Rivière-des-Prairies operations centre are inventoried in a binder labelled “MSDS” located in the garage. MSDSs are also available on the server. It is possible to consult experienced people at QIKIQTAAALUK to properly understand the properties and hazards for various products.</p> <p>Furthermore, technicians have MSDSs for products they commonly use on-site (e.g., hexane, acetone) inside their vehicle. These materials must be stored according to MSDS instructions.</p> <p>All hazardous materials containers must be correctly identified (following WHMIS requirements). Labels must be readable and cannot be removed or altered.</p> <p>Emergency equipment and first aid tailored to the products used must be available at all times on the work site.</p> <p>For a specific project, MSDSs for products with which workers may come into contact (environmental contaminants in the ground, water, equipment, materials and buildings) must be available and easily accessible on-site.</p>
<p>8. Methodology and Obligations</p> <p><i>Flammable, Combustible and Oxidizing Products</i></p>	<p>All personnel who may perform tasks involving flammable, combustible or oxidizing materials must be familiar with the associated risks.</p> <p>A few examples of flammable materials (that can ignite at room temperature) are petroleum hydrocarbons such as motor fuel, solvents such as hexane or acetone, compressed gases such as acetylene (used in tanks for welding) or propane.</p> <p>A few examples of oxidizing materials are hydrogen peroxide, potassium permanganate, sodium persulfate and O₂. These compounds are used, for example, when treating water or for <i>in situ</i> soil treatment.</p> <p>As for any other hazardous material, personnel must be familiar with the product’s characteristics as indicated in the MSDSs obtained from the suppliers. The most important characteristics for flammable (which may ignite or explode at room temperature) or combustible (which may ignite or explode at temperatures above room temperature) materials are the flash point and the LEL. It is strictly forbidden to enter a work area where the concentration of substances in the air has reached a level equal or superior to 10% of the LEL. A gas reading confirming the quality of air must be taken when there is a risk of flammable or combustible substance concentrations in the air.</p> <p>During excavations, drilling or handling, it is important to know the nature of the products present, to verify their dangerousness by testing concentrations present and to select safe work practices based on the situation.</p> <p>A work program specific to a project (emergency response plan) will be elaborated pending circumstances, and will identify potential hazards and emergency measures in case of a spill, fire or explosion. Examples of such a project include excavation work involving buried drums or untested underground pipes or reservoirs. Emergency and preventive measures include elements presented in <i>QE-EHS-10-PR Emergency Response Plan</i>.</p>

	<p>Safety Measures</p> <p>REDUCE risks of fire/explosion by preventing the release of flammable vapour or mist in the air of the work area.</p> <p>LIMIT the use of flammable or combustible liquids to well ventilated locations only.</p> <p>KEEP containers closed.</p> <p>USE the smallest quantity of flammable products required.</p> <p>CLEAN spills at once.</p> <p>MAKE USE of ventilation systems and of spark-proof equipment.</p> <p>GROUND all barrels, transfer tanks, pipes and piping so as to prevent the accumulation of an electrostatic load. Grounding pliers must be in contact with bare metal.</p> <p>USE only containers and distribution material (faucet, pump, receiving vats) approved for use with flammable liquids.</p> <p>MAINTAIN premises clean and ensure they are free from flammable materials.</p> <p>SIGNAL leaks, spills and deficiency of ventilation system to supervisors at once;</p> <p>STORE flammable or combustible substances in a safe manner, separate from sources of ignition and incompatible materials.</p> <p>DO NOT HEAT bottles or distribution systems containing flammable or combustible liquids.</p> <p>DO NOT USE flammable or combustible liquids for purposes other than those intended.</p>
<p>9. Methodology and Obligations</p> <p><i>Compressed Gas Cylinders</i></p> <div></div>	<p>Hazards associated with compressed gas cylinders are related to the hazardous materials within the cylinders and to the tremendous pressure inside the cylinders. Any gas under pressure may explode if not handled correctly. Fire is the main risk for flammable gases, but cylinders may also turn into missiles if a sudden release of gas occurs. Many precautions must be taken to prevent hazardous situations. Here are a few tips to properly store these cylinders in order to prevent incidents and avoid hazardous situations:</p> <ul style="list-style-type: none"> • Cylinders must be stored in a dry, well-ventilated and properly lit designated room far from doors, passageways, elevators and stairways. If the cylinders are stored outside, they must be in an adequate steel cage and placed on a fireproof surface protected from bad weather and locked at all times; • A “No SMOKING” sign must be posted near the storage area for compressed gas cylinders; • Keep compressed gas bottles at a suitable distance away from any source of electricity, sparks, flames or other source of heat. Cylinders must be kept away from radiators and other heat sources exceeding 52°C; • Store oxygen tanks and combustible gas cylinders separately. If they are stored indoors, oxygen tanks and combustible gas cylinders must be separated by a distance of at least 6 m (20 feet), by a wall at least 1.5 m (5 feet) high, or by a wall that is fire-resistant for at least ½ hour. (CSA W117.2-06 , Safety in welding, cutting and allied processes); • Mark or label empty cylinders and store them away from full cylinders; • Do not use a compressed gas cylinder if it is damaged or if the test date has expired;

	<ul style="list-style-type: none"> • Make sure that the cylinder valve is switched off and that the protective cover is installed before moving it; • Cylinders must always be moved with a trolley designed for this purpose. They must be upright, have their cover and be fastened during transport to avoid falling on the ground; • Never drag or roll a gas cylinder to move it. Never lift cylinders by their safety cover; • Always handle cylinders with caution, without allowing them to fall or collide with other cylinders to avoid damage and prevent leaks.
10. Methodology and Obligations <i>Emergency Equipment</i>	Extinguisher, eyewash station, emergency shower, first aid kit.
11. Roles and Responsibilities	It is each project manager’s responsibility to properly manage hazardous waste generated on their job sites.
12. Training and Awareness	<p>All QIKIQTAAALUK workers who are in direct contact with chemicals must have received WHMIS training, which is renewable every 3 years.</p> <p>There must be at least 1 qualified worker available on site to use a portable extinguisher where flammable, combustible or oxidizing products are present.</p> <p>During work hours, QIKIQTAAALUK must always make sure that the required number of first aid respondents is present for each work shift.</p>

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1. Object and Scope	This procedure outlines the methodology used for hot work performed on our job sites or in our RDP warehouse.
2. References	<ul style="list-style-type: none"> • <i>QE-EHS-13.10-FO1: Work Permit (formerly F0946-G01-00)</i> • <i>Manufacturier et Exportateurs de la Mauricie et du Centre-du-Québec</i> • <i>AON, <u>Programme de Prévention et de Gestion des risques</u>, Le regroupement des universités québécoises</i>
3. Acronyms and Definitions	<p>Hot Work: All work involving devices that produce an arc or sparks, the introduction of a combustion engine or any other work that uses a flame or that produces sparks in the workplace. Hot work also includes all electrical work as defined in the Canadian Electrical Code.</p> <p>Work Permit: Written document that must be present on site, which authorizes workers to perform hot work and informs them of the risks inherent to this type of work.</p>
4. Methodology and Obligations <i>General Information</i>	<p>Soldering, grinding, heating mechanical parts, plasma cutting and torch cutting, welding, and using a blowtorch are examples of hot work. There might be designated areas for hot work. These areas must be approved by the EHS department. In these areas, a work permit is not required.</p> <p>Before undertaking work that produces heat or sparks or which uses an open flame, you must always check that there is no other, more secure way to proceed. Techniques such as bolting, shearing, mechanical assembly and the use of threaded joints are examples of alternative work methods.</p> <p>Ideally, hot work should take place in an area that is free of combustible or flammable materials, and whose walls, ceiling and floor are made of non-combustible materials, or lined with such materials.</p>
5. Methodology and Obligations <i>Work Permit</i>	<p>In addition to SPOTs and JSAs, a work permit must be used following the procedure indicated below; otherwise its effectiveness may be compromised.</p> <p>Here is the procedure to follow:</p> <p>The project manager or site supervisor must authorize the start of hot work after making sure that all necessary precautions have been taken and after having visited the location of hot work. The work permit includes a list of controls to check off for this purpose. The following information is also recorded on the work permit:</p> <ul style="list-style-type: none"> • Location and nature of work; • Particular risks associated with the task and control measures; • Name and function of the employee who is assigned the work; • Date and time of expiry of the permit; • Name of the person to contact in case of an emergency; • Atmospheric control, if necessary; • Extinguishing means in place; • Required PPE.

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9. Methodology and Obligations

Explosive
Atmosphere

- All hot work mentioned here and performed in an explosive, or likely to be explosive environment or atmosphere requires particular procedures and precautions:
- A gas detector test (detects 4 gases) must be performed to issue a hot work permit. The test results, as well as the time at which the test was carried out and the technician’s signature, must be indicated on the work permit. To obtain a hot work permit approval, the gas detector result must be equal to 0% of the LEL; otherwise, corrective measures must be applied;
 - The gas detector reading must be taken immediately before starting work and must cover a 3 m radius around the work location. It must include low points, manholes, drain inlets and other within a 3 m radius.
 - If, for whatever reason, the work is left unattended for more than 30 minutes, after a break or lunch, another gas detector test must be performed;
 - If the permit issuer deems it necessary, he can require the permanent presence of a gas detector and indicate this on the permit;
 - It is forbidden to carry out any hot work in a location where flammable materials are transferred or handled, and where there is a possibility that vapours are present;
 - All equipment having contained hydrocarbons must be drained, washed and free of any flammable material.

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4. Methodology and Obligations <i>General Information</i>	<p>Soldering, grinding, heating mechanical parts, plasma cutting and torch cutting, welding, and using a blowtorch are examples of hot work. There might be designated areas for hot work. These areas must be approved by the EHS department. In these areas, a work permit is not required.</p> <p>Before undertaking work that produces heat or sparks or which uses an open flame, you must always check that there is no other, more secure way to proceed. Techniques such as bolting, shearing, mechanical assembly and the use of threaded joints are examples of alternative work methods.</p> <p>Ideally, hot work should take place in an area that is free of combustible or flammable materials, and whose walls, ceiling and floor are made of non-combustible materials, or lined with such materials.</p>
5. Methodology and Obligations <i>Work Permit</i>	<p>In addition to SPOTs and JSAs, a work permit must be used following the procedure indicated below; otherwise its effectiveness may be compromised.</p> <p>Here is the procedure to follow:</p> <p>The project manager or site supervisor must authorize the start of hot work after making sure that all necessary precautions have been taken and after having visited the location of hot work. The work permit includes a list of controls to check off for this purpose. The following information is also recorded on the work permit:</p> <ul style="list-style-type: none"> • Location and nature of work; • Particular risks associated with the task and control measures; • Name and function of the employee who is assigned the work; • Date and time of expiry of the permit; • Name of the person to contact in case of an emergency; • Atmospheric control, if necessary; • Extinguishing means in place; • Required PPE.

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	<p>Before starting work, it is imperative to notify all workers of the areas affected by the work permit and as such, of particular measures to be taken. This permit is only valid for a certain period of time and must be verified daily to control all new risks that may arise at any time.</p> <p>Before performing hot work, check what is on the other side (of the partition, wall, floor, ceiling, etc.). Be conscious of that heat propagating along metallic surfaces can ignite flammable materials located elsewhere.</p>
6. Methodology and Obligations <i>Supervision</i>	<p>For the entire duration of the work, constant supervision must be ensured in the area in question by a designated supervisor. He must pay attention to sparks and sources of heat. He is ready to intervene if required, using an extinguisher or a loaded fire hose at hand.</p> <p>Once work is done, the supervisor remains on the job site for at least 1 hour to make sure that there is no smoldering fire on the work site or in nearby areas. He then signs the work permit.</p>
7. Methodology and Obligations <i>Required Equipment</i>	<p>Hot Work Equipment :</p> <ul style="list-style-type: none">• Extinguishers suited to the task at hand;• Visors to protect against sparks or flames;• Flame retardant tarps to cover areas at risk;• Fire hose with “Y” type connector and nozzle (if required);• Torch with flashback arrestors. <p>Equipment must be inspected and in good condition.</p>
8. Methodology and Obligations <i>Prevention</i>	<p>Outlining a Security Perimeter:</p> <p>Remove all combustibles within an 11 m (35 feet) radius from the location of hot work. This even includes any combustibles that could be located on the other side of a partition or wall. Close any openings in the walls or floor. This measure can be upgraded based on the degree of flammability of the base materials in question (wood pile, shavings, and pulp and paper residues).</p> <p>Security perimeter: if it is impossible to apply exclusion.</p> <ul style="list-style-type: none">• Place screens and/or flame retardant tarps to cover the areas at risk.• Wash down the combustible areas. A loaded fire hose must be at hand.• Emergency fire hoses must not be used. <p>Types of Content (explosive, flammable):</p> <ul style="list-style-type: none">• Beware of products that look harmless, such as battery charging rooms (hydrogen vapours).• Aluminium, paper, cardboard and wood dust particles suspended in the atmosphere are explosive.• Coal dust.

9. Methodology and Obligations

*Explosive
Atmosphere*

- All hot work mentioned here and performed in an explosive, or likely to be explosive environment or atmosphere requires particular procedures and precautions:
- A gas detector test (detects 4 gases) must be performed to issue a hot work permit. The test results, as well as the time at which the test was carried out and the technician’s signature, must be indicated on the work permit. To obtain a hot work permit approval, the gas detector result must be equal to 0% of the LEL; otherwise, corrective measures must be applied;
 - The gas detector reading must be taken immediately before starting work and must cover a 3 m radius around the work location. It must include low points, manholes, drain inlets and other within a 3 m radius.
 - If, for whatever reason, the work is left unattended for more than 30 minutes, after a break or lunch, another gas detector test must be performed;
 - If the permit issuer deems it necessary, he can require the permanent presence of a gas detector and indicate this on the permit;
 - It is forbidden to carry out any hot work in a location where flammable materials are transferred or handled, and where there is a possibility that vapours are present;
 - All equipment having contained hydrocarbons must be drained, washed and free of any flammable material.

FORM

HOT WORK PERMIT

GENERAL INFORMATION

Title of project (site):

Project no.:

Issuer of permit:

Date (yyyy-mm-dd) :

Date of hot work (yyyy-mm-dd):

Issue time:

Expiry time:

This permit authorizes (name(s) of person(s):

Description of work:

PERSONAL PROTECTION EQUIPMENT

Mandatory: safety goggles, hard hat, safety boots and high-visibility reflective vest.

Additional Protection:

Half-mask with cartridge

Self-contained breathing apparatus (SCBA)

Harness and lifeline

Facial screen

Hearing protection

Two-way radio

Other equipment (please specify):

GAS TESTS

Assessments of the quantity of oxygen, presence of flammable vapours and of toxic materials (Please specify nature and allowable mean concentration).

Oxygen: (Between 19.5 % and 23 %)

Time :

H₂S (Max 10 ppm)

Time :

Flammable fumes: (≤ 10 %)

Time :

CO (Max 35 ppm)

Time :

Other toxic material(s): ppm

Time :

POSSIBLE HAZARDS AND PREVENTIVE MEASURES

1. Members of personnel are informed about the nature of work to be conducted.

2. All pieces of equipment are emptied, drained, purged or cleaned.

3. Job Safety Analysis (JSA) was reviewed with personnel.

4. STOP form was completed prior to commencement of the work.

5. All lines leading to equipment are disconnected or flanged.

6. Mechanical and electrical equipment are locked and tagged.

7. Combustible material is removed or protected.

8. Openings through which sparks could reach combustible materials are protected.

9. Sewers are covered and ditches are protected.

10. Scaffolding, ladders and/or platforms are safe and appropriate.

11. Ventilation is appropriate.

12. Emergency equipment is ready and operational.

13. There is a portable extinguisher or a fire hose near the work area.

14. Personnel is aware of risks generated by chemical products being used (safety data sheets are available).

CHECKED (✓)

N/A

AUTHORIZATIONS

Conditions for safe hot work are fulfilled and work may begin.

Foreman/Supervisor :

Time :

We acknowledge being aware of instructions related to this permit and undertake to comply with them.

Worker(s) :

Time :

Time :

ENDING OF PERMIT

Work is completed. Equipment has been checked and properly stored. Premises have been inspected and are deemed safe.

Foreman/Supervisor:































Time :

Worker(s):


Time :

Time :

HAZARDOUS WASTE PACKAGING AND LABELLING

TYPE OF WASTE	PACKAGING OPTIONS	LABELLING REQUIRED
Contaminated Soil (with hydrocarbons)		Hydrocarbon contaminated soil, Not TDG Regulated
Waste Oil		Waste Oil, Not TDG Regulated
Waste Glycol (Anti-freeze)		Waste Glycol, Not TDG Regulated
Waste Grease / Kitchen Grease		Waste Grease, Not TDG Regulated
Waste Oil Filters		Waste Oil Filters, Not TDG Regulated
Batteries (truck, fork lift, ...)		Batteries, Wet, Filled with Acid, UN 2794 
Salt		Waste Calcium Chloride, Not TDG Regulated
Sanitary Waste		Sanitary Waste, Not TDG Regulated
Fire Extinguisher (uncharged)		Fire Extinguisher
Electrical Waste (wires, panels,...)		Electrical Waste, Not TDG Regulated
Oily Pails and Jericans		Contaminated Oily Solid, Not TDG Regulated
OWS Waste Used Activated Carbon		Waste Activated Carbon
OWS Filters/Nanofilters		OWS Waste Filters, Not TDG Regulated
OWS Waste Water		Oily Water, Not TDG Regulated
Mix of Various Fuels (gasoline, aviation gas, diesel)		Flammable Liquid, N. O. S., UN 1993, FP 39°C 
Aerosols cans		Aerosol, Flammable, UN 1950, Class 2.1 Label 
Dry Cells *		Batteries, Dry, Containing Potassium Hydroxide, Solid UN 3038 
Hydraulic Hoses		Contaminated Oily Solids, Not TDG regulated
Contaminated Water (with fuel)		Oily Water, Not TDG Regulated
Contaminated Fuel (diesel or arctic diesel)		Waste Diesel, UN 1202, FP 39°C 
Contaminated Aviation Gas		Waste Aviation Gas, UN 1863, FP 50°C 
Contaminated Gasoline		Waste Gasoline, UN 1203, FP -39°C 
Waste Absorbent Materials		Oily Absorbent Pads, Not TDG Regulated

* Store in 20 L Pails Prior
Note: For Water Unit Treatment
Note: Acceptable for On-Site Incineration

Note:  UN closed / open top can be reconditionned

APPENDIX B

WEEKLY REPORTS

Rapports Quotidiens

Pour la période du 18 au 23 août 2015

Rapports internes produits durant la période: Stop, JSA, Incident, SPOT : **Nil**

Mardi 18 août: PM: Transit Montréal – Toronto – Kitchener

Mercredi 19 août : Transit: Kitchener - Waterloo – Iqaluit – Mary River - Milne River

Jeudi 20 août

AM : Worker Orientation + vaccination

PM : Project planning & site visit

Meetings : Workers Orientation le 20 août de 7h15 à 11h00 ; médical : vaccination obligatoire (11h00) ; meeting téléphonique organisé par Marlon (Hatch) avec Thomas (Ruskin), David et Dan sur le suivi et le décompte du matériel et de l'ouvrage à charger sur 3 comptes; on devait se rencontrer demain matin (8h00).

Commentaires JD : Je viens de faire une première reconnaissance visuelle du chantier; outre le démontage de la structure du toit, une importante partie du travail consistera dans un premier temps à séparer les débris selon leurs types (métaux, bois, plastiques, etc.) dans les différents secteurs. Une partie du travail sera de nature Hazmat. L'entrepreneur compte commencer rapidement le démantèlement de la structure du toit.

Sols : il faudra initialement identifier et circonscrire les périmètres de sol contaminés (spills) pour éviter d'accroître les volumes de sols à retirer; j'ai remarqué que des traces de roues témoignaient du passage de véhicules lourds à divers endroits. Les aires d'épanchements sont clairement visibles adjacents aux containers.

Amiante : l'isolant des lampes me semble effectivement contenir des fibres minérales; pour le moment la récupération se fera séparément par moi-même selon les protocoles requis; note : dans certains cas, des membranes isolantes en fibre-de-verre peuvent être confondues avec de l'amiante.

Contenants sous pression : il s'agit principalement d'extincteurs et de quelques bombonnes de plus grande dimension à identifier. Il faudra tout sécuriser dans un endroit désigné.

Contenants : Les contenants (tote tank, quadrex, barils, et autres fournitures) ne sont pas encore sur le site ; ils devraient arriver dans quelques jours.

vendredi 21 août

Meeting BIM (8h00 – 11h30)

Participants: David McCann, Lea Williams et Daryl Finlay de BIM, Marlon Coakley (Hatch), Thomas Hrdina+Matt Currie (Ruskin).

C'est un premier meeting avec les responsables de BIM; l'ensemble du meeting a principalement porté sur des questions de santé/sécurité/environnement. ainsi que sur des questions de "tracking" pour des questions de remboursements d'assurance. Il a été convenu d'établir divers comptes pour les différents ouvrages réalisés. QE semble avoir hérité de cette responsabilité; un fichier excel est en préparation à cet effet. QE sera aussi responsable de l'étiquetage (BIM n'en ayant aucune).

- Il y a une membrane sous le garage de Anmar (localisation imprécise)
- On s'interroge sur la contamination en chrome
- On s'interroge sur la présence présumée d'amiante

? cylindres – Il serait bon d'obtenir un protocole (ou conseils) pour la sécurisation des divers contenant sous pression (présumé) compte tenu que la qualité (ou l'intégrité) des valves peut représenter une problématique. J'ai déjà une expérience de base avec Cam-4 mais pas dans le contexte de matériel incendié; BIM propose de faire venir un spécialiste.

Samedi 22 août

Structure du toit: un premier segment de la structure toit a été retiré et les pièces métalliques déposés au sol; le retrait de la toile PVC se fait au fur et à mesure par une équipe de 2 employés sur un Genie- lift qui circule à l'extérieur du périmètre. Un opérateur de grue (Crane) est aussi disponible.

Amiante-1 : Puisque le rapport mentionne la possibilité (ou présence) d'amiante (ref photo-18), BIM souhaiterait avoir une confirmation "analytique" ou du fabricant à ce sujet; nous faisons présentement des démarches (localement) pour avancer la piste du "fabricant". Advenant qu'on ne puisse retracer les origines du matériau problématique il semble exister des "kits d'analyse" pour faire une simple vérification sur place.... qu'en pensez-vous?... à suivre.

Amiante-2: Selon mes observations, les "Asbestos Liner"(ref: tableau de l'appendice 6) sont des conduits flexibles d'aération construits en tissus de fibre-de-verre recouvert de néoprène (image) la fibre de verre peut être facilement confondue avec de l'amiante dans un contexte incendié.

Dimanche 23 août

Morning meetings: tous les matins à 6h30 nous faisons un meeting de planning/sécurité avec l'équipe de chantier de Ruskin.

Structure du toit: Le travail se poursuit par Ruskin, 6 segments de toit (sur 12) sont retirés.

Mercure – ampoules: une trentaine d'ampoules, la plupart intactes on été retirées et emballées et mises de côté temporairement.

IMTDG: j'ai demandé si une copie des 2 volumes était disponible sur place; il semble que ce soit le cas et que BIM me les fournira.

Amiante: j'ai réalisé diverses démarches et rencontres sur cette question et tous les intervenants sont affirmatifs sur la non-présence d'amiante sur le site. Certains matériaux exposés à la chaleur telle des boîtes électriques en plastique ont exactement la même friabilité et texture que les "luminaires" concaves montrant des fibres.

Suivi (Tracking): je suis toujours en train de préparer (ou améliorer) la façon de gérer l'information pour les besoins du projet en regard des assurances.

Planning pour lundi: Ruskin devrait terminer le démantèlement de la structure du toit ou mardi matin; je vais commencer à sécuriser les batteries brûlées et compléter la liste (excl) pour faciliter l'exécution des travaux de ramassage et de suivi "tracking".

Weekly Report (002)
From Monday August 24 to Sunday August 30

Internal Report produced during the week: JSA(2) and STOP (1)

Monday Aug 24:

6h30 Ruskin morning meeting: Similar task as yesterday, same safety recommendations.

Sanexen meeting: we discussed labelling for the containers. We have on site 10 class3 and 8 class 8 stickers. Managing fire damaged cylinders is an issue for the moment; sending them back as is, properly secured is an option; follow-up required. We will manage the few chloroethylene containers according to IMDTG requirements. We agreed to sample fibrous material and send sample for analysis.

Roof: work is progressing well the structure is finally remove... thanks to late working crew!

Tuesday Aug 25:

6h30 Ruskin morning meeting: The plan today is to remove the engines (genie lift and other large equipments) after they have been fully drained from any liquid and swept clean. Precaution will be given to secure soot and oil stained areas to avoid cross-contamination.

Burned samples sent: 2 fibrous samples (S-001, S-002) were prepared for shipping.

Containers: 20' max capacity About 30.5 tons with tare 2.2 tons (=28.3 tons cargo)

40' max capacity About 32.5 tons with tare 3.9 tons (=28.6 tons cargo).

Question about the use for maritime transportation of 40' opentop containers (as is) will has been raised as well as the management of transporting the Genielifts; the hughe 45' boom has been removed from the biggest one. No dismantling is planned until the transportation issue is resolved,

Tare limitation: BIM said that any filled container on site shall not exceed 20 tons according to the lifting equipment capacity. I repeatedly recommended to use 20' containers to optimize volumes for metals. I have been told that 20' containers are not easily available around. We may have to deal with 40' containers with some being open top. It will be useful to get the ruling about the requirements in order to make sure that they can be loaded on ship.

Soot sampling: 3 samples were taken in containers ...(SW-001) ... (SW-002) .. (SW-003) and sent rush for tomorrow's plane. Three 4"x4" sweeping pads were prepared out of a 4" sterile gaze roll, rolled into 8 layers and each placed into sterile sampling bag. At each location, an area of about 400 cm² was chosen before sampling. The sampling consisted in "cleaning" out the soot with the wetted sweeping pad, inside the defined perimeter. Sample number was written on the wall and a picture taken in each case. Samples were sent with the previous ones.

Hatch replacement: Stephan Gionet will be replacing Marlon for a week, starting tomorrow.

Foam insulation: Anmar provided us with SDS pages on the type of foam used (Touch N Foam Pro System 600 CCMC) and produced by Convenience Products.

ASCU : cleanup (SE area) has started late this afternoon in order to manage a first lay down area.

Wednesday August 26

6h30 Ruskin morning meeting: The workers will be starting to remove small debris; Tyvec and dust respiratory mask is mandatory.

Desgagné shipping: a meeting was done with Philippe Paquet regarding transportation topics; the Genie-manlifts can be transported as they are as long as they do not drip. It would be preferable to have a top on those 40' containers but they will be accepted without one if the top of the stack pile is covered. Water and safety are the main concerns for rooftop.

496061-3: this is the first 40' open top container to be filled, consisting mainly of all the roofing structure plus similar metal parts.

Warehouse: we were informed that there were no oversize drum available; we are making good use of the resources available on site to contain huge amount of small metal pieces. I we find any; priority will be given to dangerous goods packaging.

123392-4: this container (red) is to be filled with landfill material; the roofing tarp has been disposed there.

Thursday August 27

6h30 Ruskin morning meeting: mostly same job as yesterday same precautions regarding wearing PPE. Stephane Gionet and Shawn Burnett (MGB Claims insurance consultant) were attending the meeting.

Site visit AM: we went around the site area in order to get oriented on how tracking will be done regarding ether BIM or Anmar accounts. M.Burnett agreed on our tracking method as it was presented. We learned from him that the 6 x 40' containers were outside of the area at the moment of the fire and 4 of them (Anmar'ones) were transported inside after; everything inside those shall belongs to Anmar and charged accordingly.

Supplies: The stock ordered by Ruskin still not arrived; Stephan Gionet (Hatch) is working hard to get Salvage drums, granular sorbent and others items including 20' closed top containers.

Sanexen followup; in summary we shall consider fibrous unidentified items as asbestos and deals with it accordingly (including PPE); gaz cylinders, especially acetylene shall not be moved or disturbed. Any work around ashes PPE requirement is to wear a P100 half mask. For the workers closely exposed to such fines, it is recommended to use a full face. The comments will be transmitted to the workers at tomorrow's morning meeting.

JSA request (reminder): a JSA shall be produced by QE before cutting the contaminated containers; request made by BIM on last week meeting.

Friday August 27 August 28

6h30 Ruskin morning meeting: The meeting insisted on getting well organized to manage contamination; enforcing mandatory half-face mask for all workers exposed to fines.

Visitors: Orlan Robinson (CRU) consultant visited the site this morning; he arrived yesterday and shall be here until Sept.03. Paul Byron from BIM (Project control) asked to read our Waste Management Plan since he is involved with contract management. Shawn Burnett left today.

Site progress report: We started to pump oil left from the burned tote tank into the new one which already contained oil taken from other ASCU machines (prepared for transportation); other liquid products (solvent, resin and paint have been transferred to proper containers drums. Burned equipment and machines have been secured (fluid removed) and moved out from the contaminated area. Small parts of metal laying all around have been removed by an homemade electro-magnet.

Burned batteries: The debris from burned batteries have been removed from the BSC-3 and placed in a plastic drum before final packaging. Since the floor is burned opened, supplemental cleaning will be required once the containers will be removed.

Cylinders Gas: there are 5 big propane and 3 oxygen gas cylinders; the safe disposal of the only acetylene cylinder is under discussion.

South-West Corner: We started working on the liquid products; granular sorbents and sheets were laid on the heavily stained floor. Liquids stored into 5 to 20 litres containers consist mostly into paint, paint thinner, fibreglass resin and oil.

JSA: A JSA (Job Safety Analysis) was efficiently prepared and transmitted by Pascal in Brossard in anticipation for the numerous works involved into containers dismantling. Fusion of the 2 reports into 1 with minor modifications were done.

Saturday August 29

6h30 Ruskin morning meeting: questions were raised about the way containers will be lifted and the safety measures associated with today's operations. We congratulated the workers for their behavior in respecting the PPE requirements (Tyvec and half-mask).

Containers: the 2 Anmar "in good shape" containers lying inside the area were emptied and placed outside on the east-side laying area. Shelves in the container 594334 (inside area) were hardly pulled out along with inside walls (metal sheet) over a large protective tarp.

SW Corner cleanup: the various liquids were pumped in appropriate containers; the top of the burned plastic tote tank was cut in order to reuse this container in the cleaning process; there is still a lot of cleaning job remaining to be done in this area.

IMDG: we produced a list of UN regulated products we will be shipping; we may have to get onsite the proper labels for this task.

Sunday August 30

6h30 Ruskin morning meeting: We went through the JSA prepared for the purpose of cutting the containers and prepared a STOP report with the workers.

Containers: the 2 containers (with foam insulation) left inside have had their doors removed; the shelves were pulled out over a large protective liner and emptied; once the bulk of items removed and disposed appropriately, they were lifted by the back (using the crane) over the same tarp and emptied completely. The black wooden ashes mixed with debris were shoveled into Quatrex bags.

Working area: the area is becoming cleared out of debris; the respiratory risk is now much reduced outside but the mandatory PPE rule remains about wearing half-face mask. For safety reasons, the radio communication between the foreman and the crane operator (outside the working area) is done through a dust mask; being away from the direct contact with debris, he is less exposed to fines than the other workers.

Weekly Report (003)
From Monday August 31 to Sunday September 06

Internal Report produced during the week: none

Monday Aug 31:

6h30 Ruskin morning meeting: Reading of QE' JSA report for the proposed work activity or crushing containers.

SW Corner: cleaning is still ongoing to remove mostly grease buckets and some oil; the spent buckets were swept and granular sorbent placed in order to prevent dripping.

Container crushing: Two containers (Anmar 300515 & 594334) were efficiently crushed today.

IMDG: Labels were prepared from QE and sent today.,

Tuesday Sept 01:

6h30 Ruskin morning meeting: usual recommendations, today the workers are to work on cleanup outside mostly; comment were made about avoiding to get (or drive) outside the work area. Daily safety sheet was about the risks of heart disease.

Labelling: there was a special printer (a BBP-85) for labels (at the maintenance building); we printed those required for our UN regulated products. Most of our regulated products are inside salvage drums, properly labelled. Labels and seals for the container will be sent rush.

SW-Container: the job is finished removing the big mess of various products and cleaning the whole floor. Thanks to granular and diaper sorbents, flat shovel and hard work!

Containers moved: full and almost completed containers were transported down to port area; minor stowage remains to be done on those. (496061-3, 631492-1, 287409-6 and 2002087-7).

Crushing: container BSC-5 and BSC-6 on the east wall were removed and crushed inside the working area. The ashes and debris left beneath the floor were back bladed in a small berm toward the inside wall.

Wednesday Sept 02

6h30 Ruskin morning meeting: Daily safety sheet recommended not to smoke; the PPE remains mandatory especially for half-face masks even if the area is more exposed to open air than before; the crew still have to walk inside the containers where airborne fines are present.

Meteo: Sunny, cold and windy (+/- 0deg; 20 to 25 km/h)

Port Area: Inside the 4 containers, properly stowage was installed in order to be ready for transportation; a plastic tarp was fixed inside, over the bulk metal cargo (40'open top).

Tracking activities: part of the day was invested to update the information transmitted by Ruskin for tracking project' activities into appropriate accounts.

Crushing activity: the stack pile of 4 crushed containers (594334, 300515, BSC-6, BSC-5) were fixed by metal plated and soldered at their corners. They were entirely covered with a tarp. Ruskin thinks that they can crush about 2 to 3 containers a day, depending their status (preparation and work to be done inside out).

Cylinder gas: we received some answer about the way to deal with transportation issues regarding the damaged gas cylinders; we will try to find replacement caps for those and crate them. If adapted cages are onboard the ship, this will ease the management of oxygen cylinders. Two welders went to see our cylinders; their observations were very instructive about the way pressure plugs and valves are setup; nothing conclusive about any pressure left inside.

Thursday Sept 03

8h35 Ruskin morning meeting: the meeting was postpone due to a Code-1 (polar bear around the Matrix camp) which last about 2hrs. Since the east wall is mostly removed as well as debris , workers are less exposed to airborne fines. Paper dust mask is allowed outside only; half-face mask remains mandatory for getting inside containers and for any job which can expose workers to dust. Daily safety memo was about a silent killer (not the polar bear) blood pressure.

Work progression: container #679514 and 110709 on the E wall were crushed; metal is currently loaded into container #... (North end). Container # 101994 was removed from the West wall and crushed. At the end of the day, 4 non-contaminated containers were stacked. About 5 small lead-cell partially burned batteries were found (under #679514).

Soil contaminated area assessment: a more detailed inspection and delimitation (marking) of identified spill/contaminated areas was done today in order to evaluate the amount of soil to be removed and a provide an efficient methodology to achieve it. Small test pits were done accordingly. No trace of the blue paint was observed on the SE end; only few small flakes from the blue container wall (#110709) could be seen. Removal work shall start tomorrow.

Container info management as of today:

Crunched: 1-wrapped: (594334, 300515, BSC-6, BSC-5)

2-stacked: (679514, 110709, BSC-1, BSC-2) – not contaminated

Left: 10 (693779, 039667, 222174, 901030, 694267, 101994, BSC-3, BSC-4, 024092, 100619)

Friday Sept 04

7h30 Ruskin morning meeting: delayed by code-1 (polar bear again),

Fibrous sample: the 2 fibrous sample along with the 3 soot samples were not received in Sanexen; the small sample box left MI on august 27 (MI-01954) to Mary River; Kevin Rideout (warehouse ext.6042/6077) said they were sent to Kitchener the same day; he will followup.

Cat-320: the teeth's bucket was changed for flat lip in order to work with soils.

Work progression: AM surface detritus are shoveled into Quatrex bags.

Soil removal: We started to remove the thin layer of oil-contaminated soil along the road side on the west side wall. We used the Cat-320 excavator; minor final hand removal will be done. The thicker layer on the wall side will be removed from the inside while the containers will be crushed.

Desgagners: We talked with Daniel Desgagnés (450-635-0833) from Nunavut Sealink and Supply (NSSI) Inc. about the way to prepare various items ready for shipping, especially our stacked containers. We sent a picture to him, in order to make sure everything will be prepared correctly. He said that he can accept gaz cylinders on the ship deck if they are properly crated (closed box + Crate + bending).

Nunavut Sealink & Supply inc. (NSSI)

Bureau de gestion des opérations

6565, boul. Hébert, bureau 201

Sainte-Catherine (Québec) J5C 1B5

Directeur : Daniel Desgagnés

daniel.desgagnés@transarctik.desgagnés.com

Container info management as of today:

Crunched: 1-wrapped (4): (594334, 300515, BSC-6, BSC-5)
2-stacked (4): (679514, 110709, BSC-1, BSC-2) – not contaminated
3-stacked today (4): (694267, 901030, 101994, BSC-3)
Left: 6 (693779, 039667, 222174, BSC-4, 024092, 100619)

Saturday Sept 05

6h30 Ruskin morning meeting: Nothing special, usual safety recommendations; today Ruskin will continue crushing containers and probably utilise one of them (in good shape) to fill it with other (smaller) containers.

Preparing documentation: We make sure that all the information required for each and every containers are complete and completed ASAP. The info is placed in a spreadsheet file.

Container inspection: we inspected the containers laying at the port site; except for few minor items, they were all secured with wood, ready for transportation.

Ruskin: We were inform that Ruskin will reduce from 12 to 10 their daily work schedule; 2 workers (out of 5) will be leaving on sept.10

Anmar's Genie-lift: I received communication from BIM that we shall not plan anything about Anmar's equipments.

BIM - Environment: Dustin (which replaces Lea (in vacation)) came-by to visit the site; we explained to him the work strategy QE is following.

Container info management as of today:

Crunched: 1-wrapped (4): (594334, 300515, BSC-6, BSC-5)
2-stacked (4): (679514, 110709, BSC-1, BSC-2) – not contaminated
3-stacked & wrapped today (4): (694267, 901030, 101994, BSC-3)
4-Crunched today: (BSC-4, 024092, 222174, 039667)
Left: 2 (693779, 100619) Plus 2 Anmar (located outside)

Sunday Sept 06

6h30 Ruskin morning meeting: Daily safety sheet was about the danger of standing beneath garage doors; Dustin from BIM environment was attending the meeting; usual safety recommendations were provided according to the type of work planned for today which consist of crushing down the last 2 containers (Anmar), managing metal removal from surface and completing the Hazmat container.

Container info management as of today:

922303-9: this 20' C/T contains only the BIM Genie-lift, placed today AM

Crunched: 1-wrapped (4): (594334, 300515, BSC-6, BSC-5)
2-stacked (4): (679514, 110709, BSC-1, BSC-2) – not contaminated
3-wrapped (4): (694267, 901030, 101994, BSC-3)
4-stacked inside 693749: (BSC-4, 024092, 222174, 039667)
5- stacked inside Anmar (1) plus scrap metals (100619)

Left: 1 Anmar (40' C/T) which will be used for Quatrex soils to landfill

Hazmat: We completed the dangerous good container by adding more salvage drums with various products (dry-burned batteries & ashes, fibrous material, extinguishers in a wooden crate, aerosol cans....)

Supplement info.

Haz Waste :

Solva-Rec Environnement inc.

Rue Lucien Beaudin, Saint-Jean-sur-Richelieu, QC J2X 5M3

Téléphone : (450) 347-3008

Waste :

Waste Management inc.

Sainte-Sophie Landfill

2535 1re Rue, Sainte-Sophie, QC J5J 2R7

Téléphone : 1-800-267-7874

Scrap Metal :

Arcelor- Mittal Montreal inc.

3185 Route Marie Victorin, Contrecoeur, QC J0L 1C0

Téléphone : (450) 392-3200.

Contaminated Soils :

Solum Environnement 2010 inc.

530, rue Bourgeois Nord

Saint-Amable (Quebec) J0L 1N0

Téléphone : (450) 649-7484

Urgency Nb 24/24: Canutec 1-613-996-6666.

APPENDIX C

PHOTOGRAPHIC REPORT



Photo 1

View of Anmar Shop
prior to dismantling
work
August 21, 2015.



Photo 2

View of fibrous burned
electrical component
found on August 23,
2015.



Photo 3

View of waste sorting work while dismantling the roof structure on August 25, 2015.



Photo 4

View of scrap metal sorting with a customized magnet on August 26, 2015.



Photo 5

View of scrap metal packaging in open-top container on August 26, 2015.



Photo 6

View of waste sorting operations, with the use of specific PPE and soil protection measures related to the presence of potentially contaminated fines on August 30th, 2015.



Photo 7

View of sea container
crushing operations
prior to packaging
work for maritime
transport on
August 31st, 2015.



Photo 8

View of specific PPE
worn by workers while
handling hazardous
waste on
August 31st, 2015.



Photo 9

View of crushed and packaged sea containers that are covered of contaminated soot on September 2nd, 2015.



Photo 10

View of burned valves from oxygen cylinders in adequate wooden crate relative to IMDG requirements.



Photo 11

View of specific wooden crate built behind container doors, to protect workers when opening the container.



Photo 12

View of the equipment used to gather all small debris on the ground surface.



Photo 13

View of surface soil clean-up in the southwest area of the Anmar Shop on September 9, 2015.



Photo 14

View of the liner observed at an approximate depth of 1.5 foot below ground surface.



Photo 15

View inside the container of packaged regulated hazardous materials on September 7, 2015.



Photo 16

View towards south of the former Anmar Shop area on September 11, 2015.

APPENDIX D

HEALTH AND SAFETY DOCUMENTS

Job Safety Analysis (JSA)

1

Project/Address: Milne Inlet Port Complex

Contractor's/Subcontractor's name: Ruskin

Date:

Weather:

Task/activity: **BURNED SEA CONTAINERS COVERED WITH CHROMIUM CONTAMINATED SOOT - DISMANTLING AND PACKAGING - COMPACTION FOR PACKAGING**

2

MARK RISKS OBSERVED WITH A CHECK (✓)

Health and Safety		Environment							
Chemical <table border="1"> <tr><td>Exposure to toxic or corrosive substances</td></tr> <tr><td>Ingestion of toxic or corrosive substances</td></tr> <tr><td>Chemical burn</td></tr> </table>		Exposure to toxic or corrosive substances	Ingestion of toxic or corrosive substances	Chemical burn	Soil and surface water contamination <table border="1"> <tr><td>Spills and leaks</td></tr> </table>		Spills and leaks		
Exposure to toxic or corrosive substances									
Ingestion of toxic or corrosive substances									
Chemical burn									
Spills and leaks									
Fire/explosion <table border="1"> <tr><td>Handling or presence of compressed gas</td></tr> <tr><td>Handling or presence of explosive, reactive, oxidizing or flammable materials</td></tr> </table>		Handling or presence of compressed gas	Handling or presence of explosive, reactive, oxidizing or flammable materials	Generation of domestic waste <table border="1"> <tr><td>Generation of recyclable domestic waste</td></tr> <tr><td>Generation of non-recyclable domestic waste</td></tr> </table>		Generation of recyclable domestic waste	Generation of non-recyclable domestic waste		
Handling or presence of compressed gas									
Handling or presence of explosive, reactive, oxidizing or flammable materials									
Generation of recyclable domestic waste									
Generation of non-recyclable domestic waste									
Biological <table border="1"> <tr><td>Contact with hazardous elements of the fauna and flora</td></tr> <tr><td>Contact with bacteria, viruses, insects, blood borne pathogens</td></tr> <tr><td>Inhalation, contact with mold and fungi</td></tr> </table>		Contact with hazardous elements of the fauna and flora	Contact with bacteria, viruses, insects, blood borne pathogens	Inhalation, contact with mold and fungi	Generation of hazardous waste <table border="1"> <tr><td>Mislabeling of hazardous waste, including shipping documents and logs</td></tr> <tr><td>Mismanagement of hazardous waste</td></tr> </table>		Mislabeling of hazardous waste, including shipping documents and logs	Mismanagement of hazardous waste	
Contact with hazardous elements of the fauna and flora									
Contact with bacteria, viruses, insects, blood borne pathogens									
Inhalation, contact with mold and fungi									
Mislabeling of hazardous waste, including shipping documents and logs									
Mismanagement of hazardous waste									
Physical <table border="1"> <tr><td>Noise</td></tr> <tr><td>Thermal environment</td></tr> <tr><td>Lighting</td></tr> <tr><td>Radiation related risks</td></tr> <tr><td>Vibrations</td></tr> </table>		Noise	Thermal environment	Lighting	Radiation related risks	Vibrations	Transportation of hazardous material <table border="1"> <tr><td>Implementation of regulations regarding transportation of hazardous material</td></tr> </table>		Implementation of regulations regarding transportation of hazardous material
Noise									
Thermal environment									
Lighting									
Radiation related risks									
Vibrations									
Implementation of regulations regarding transportation of hazardous material									
Ergonomic <table border="1"> <tr><td>Bad posture, work in small spaces</td></tr> <tr><td>Repetitive movements</td></tr> <tr><td>Excessive use of force</td></tr> </table>		Bad posture, work in small spaces	Repetitive movements	Excessive use of force	Nuisance to the community <table border="1"> <tr><td>Complaint regarding noise, odours, traffic, misperceptions</td></tr> </table>		Complaint regarding noise, odours, traffic, misperceptions		
Bad posture, work in small spaces									
Repetitive movements									
Excessive use of force									
Complaint regarding noise, odours, traffic, misperceptions									
Electrical <table border="1"> <tr><td>Electrification</td></tr> <tr><td>Electrocution</td></tr> </table>		Electrification	Electrocution						
Electrification									
Electrocution									
Fall <table border="1"> <tr><td>Material falling</td></tr> <tr><td>Fall from a height of 1.5 m or more</td></tr> <tr><td>Fall from a height of less than 1.5 m</td></tr> </table>		Material falling	Fall from a height of 1.5 m or more	Fall from a height of less than 1.5 m					
Material falling									
Fall from a height of 1.5 m or more									
Fall from a height of less than 1.5 m									
Mechanical <table border="1"> <tr><td>Crushing – collapse - pinch</td></tr> <tr><td>Injury or cut from equipment</td></tr> <tr><td>Projection of parts, tools, dust</td></tr> <tr><td>Projection of fluids under pressure</td></tr> </table>		Crushing – collapse - pinch	Injury or cut from equipment	Projection of parts, tools, dust	Projection of fluids under pressure				
Crushing – collapse - pinch									
Injury or cut from equipment									
Projection of parts, tools, dust									
Projection of fluids under pressure									
Thermal <table border="1"> <tr><td>Contact with hot surface(s) or liquid(s)</td></tr> <tr><td>Hot work (welding)</td></tr> </table>		Contact with hot surface(s) or liquid(s)	Hot work (welding)						
Contact with hot surface(s) or liquid(s)									
Hot work (welding)									
Confined space or trench work <table border="1"> <tr><td>All risks related to working in a confined space</td></tr> <tr><td>All risks related to working in trenches</td></tr> </table>		All risks related to working in a confined space	All risks related to working in trenches						
All risks related to working in a confined space									
All risks related to working in trenches									

3

Preparation of the JSA

Basic steps of the task	Potential risks or hazards	Measures to minimize or eliminate the hazard (who, what, where, when and how)
LOCATION AND SECURING OF THE WORK AREA	<ul style="list-style-type: none"> Presence of other operations in the work area; Uneven ground or container floor; Presence of volatile soot in the work area and potential windy ambient conditions; Insufficient lighting in the containers; Other dangers: 	<ul style="list-style-type: none"> Complete STOP form (Stop all Tasks and Observe for Prevention) according to ESS-02-PR – Risk Management or BIM's equivalent form; All workers affected to hot work must be trained and informed of risks and prevention and safe working methods; Suitable PPE: <ul style="list-style-type: none"> Gloves, Tyvek® suit covering neck, wrists, and ankles; Half-mask with P100 cartridges is a minimum requirement to enter the work area, including the excavator operator. A full-face mask should be

Basic steps of the task	Potential risks or hazards	Measures to minimize or eliminate the hazard (who, what, where, when and how)
		<p>worn instead of the half-mask for the cutting tool operator;</p> <ul style="list-style-type: none"> • During work, do not smoke, eat, drink or chew any substances in the work area; • Delineate a large working perimeter to restrict access to authorized workers only and to prevent injury from the potential projection of containers parts or particles; • Verify the quality of the container and inspect the ladder or the lift to ensure the stability of the installation; • All vehicles near the work area should be positioned at a distance greater than 10 m; • Apply the 3 point contact rule when using a ladder and handle tools using a rope or a wire; • Ensure that the floor and ground surfaces are safe for work to be conducted; • Use of spot lights to increase visibility during work inside the container; • Other measures:
<p>CLEANING OF THE CONTAMINATED SURFACE ALONG THE CUTTING LINE (IF CUTTING IS REQUIRED PRIOR TO COMPACTING OPERATIONS)</p>	<ul style="list-style-type: none"> • Projection of soot, dust or particles; • Release of contaminated waste materials during cleaning operations; • Other dangers: 	<ul style="list-style-type: none"> • Use suitable PPE; • All soot particles that seem volatile or not well attached to the container surfaces should be cleaned using a vacuum equipped with a HEPA filter; • All fixed soot particles must be cleaned with a wet rag over a width of 30 cm along the cutting line; • Use of rags must be conducted without rinsing dirty rags or, if rinsing operations are performed, equipment must be used to avoid the release of contaminated water into the environment. All rags must be stored in an open top drum or a Quatrex-type bag and contaminated water in a close top drum; • Other measures:
<p>CUTTING THE WELDS BETWEEN THE CONTAINERS (IF CUTTING IS REQUIRED PRIOR TO COMPACTING OPERATIONS)</p>	<ul style="list-style-type: none"> • Emission of dust and smoke while cutting or cleaning the container surface; • Risk to being injured by the cutting tool; • Risk of pinching or crushing; • Work in a restricted area; <p><u>Use of manual tools:</u></p> <ul style="list-style-type: none"> • Task with repetitive movements associated with postural constraints and/or significant effort; • Risk of falling forward during operation of the tool; • Other dangers: 	<ul style="list-style-type: none"> • Use suitable PPE; • Cut along the previously cleaned cutting line; • Worker must be trained before using the cutting tool; • Worker must hold the cutting equipment tightly with both hands; • Worker must be positioned out of the cutting line while using the cutting tool; • Worker must not stand in front of, and never over, the cutting tool; • Do not force or overstrain the cutting tool; • Respect ergonomic standards related to the work area, lifting techniques (bend knees, hold objects close to your body, use legs rather than back). Place feet in front of the object to lift, do not twist. Do not hesitate to ask for help; • Other measures:

Basic steps of the task	Potential risks or hazards	Measures to minimize or eliminate the hazard (who, what, where, when and how)
COMPACTING OF SEA CONTAINERS	<ul style="list-style-type: none"> Emission of soot, dust or particles and potential projection of metal pieces; Risk of being injured by the machinery; Other dangers: 	<ul style="list-style-type: none"> Use suitable PPE : Half-mask with P100 cartridges is a minimum requirement to enter the work area, including the excavator operator; Maintain a safe distance away from the radius of the bucket (excavator); Machinery must be stopped and the excavator bucket on the ground when a worker enters the exclusion area; Keep the work area clean and ground free from equipment; Other measures:
IMDG PACKAGING OF COMPACTED CONTAINERS	<ul style="list-style-type: none"> Emission of contaminated dust or particles; Risk of injury by cut pieces of metal; Risk of injury during manual work on a wide polyethylene tarp; Other dangers: 	<ul style="list-style-type: none"> Use suitable PPE, particularly half-mask with P100 cartridges and thick gloves; Proper position of workers when carrying out tasks: (bend knees, keep back straight, ask for assistance as required to carry out task); Other measures:
FINAL CLEAN-UP AFTER CUTTING OR COMPACTING WORK AND DEMOBILIZATION OF EQUIPMENT	<ul style="list-style-type: none"> Emission of dust or particles from cutting or crushing residues; Potential contamination of ground surface; Risk of tools falling; Other dangers: 	<ul style="list-style-type: none"> Use suitable PPE; Handle tools using a rope or a wire when using a ladder or lifting equipment; Use wet rags or vacuum with a HEPA filter to clean surfaces with potentially contaminated cutting residues; Excavate ground surface where containers were compacted to ensure that all contaminated soot, dust and/or particles do not remain on the ground; Other measures:

4 Specific considerations

Is there any special material to be used that has not yet been mentioned (including personal protection equipment (PPE))? Consult any Material Safety Data Sheet (MSDS) if applicable.
How will we proceed if a change is made to the scope of work? (that is, how will we define and communicate such change)
Indicate and outline at which times the STOP process will have to be performed during this activity.

5 Identification and signature

Prepared by:	Function:	Date:
Person(s) performing the work : Name(s)	Signature:	Date:

JSA approved by the supervisor of the job site :

Signature:

Date:

6 Review of the JSA

Did an incident related to this task occur while work was being carried out?

Is a modification required for the JSA?

Job Safety Analysis (JSA)

1

Project/Address: Milne Inlet Port Complex

Contractor's/Subcontractor's name: Ruskin

Date:

Weather:

Task/activity: **SEPARATING BURNED SEA CONTAINERS COVERED WITH CHROMIUM CONTAMINATED SOOT - DISMANTLING AND PACKAGING**

2

MARK RISKS OBSERVED WITH A CHECK (✓)

Health and Safety		Environment	
Chemical <input type="checkbox"/> Exposure to toxic or corrosive substances <input type="checkbox"/> Ingestion of toxic or corrosive substances <input type="checkbox"/> Chemical burn		Soil and surface water contamination <input type="checkbox"/> Spills and leaks	
Fire/explosion <input type="checkbox"/> Handling or presence of compressed gas <input type="checkbox"/> Handling or presence of explosive, reactive, oxidizing or flammable materials		Generation of domestic waste <input type="checkbox"/> Generation of recyclable domestic waste <input type="checkbox"/> Generation of non-recyclable domestic waste	
Biological <input type="checkbox"/> Contact with hazardous elements of the fauna and flora <input type="checkbox"/> Contact with bacteria, viruses, insects, blood borne pathogens <input type="checkbox"/> Inhalation, contact with mold and fungi		Generation of hazardous waste <input type="checkbox"/> Mislabeling of hazardous waste, including shipping documents and logs <input type="checkbox"/> Mismanagement of hazardous waste	
Physical <input type="checkbox"/> Noise <input type="checkbox"/> Thermal environment <input type="checkbox"/> Lighting <input type="checkbox"/> Radiation related risks <input type="checkbox"/> Vibrations		Transportation of hazardous material <input type="checkbox"/> Implementation of regulations regarding transportation of hazardous material	
Ergonomic <input type="checkbox"/> Bad posture, work in small spaces <input type="checkbox"/> Repetitive movements <input type="checkbox"/> Excessive use of force		Nuisance to the community <input type="checkbox"/> Complaint regarding noise, odours, traffic, misperceptions	
Electrical <input type="checkbox"/> Electrification <input type="checkbox"/> Electrocuting			
Fall <input type="checkbox"/> Material falling <input type="checkbox"/> Fall from a height of 1.5 m or more <input type="checkbox"/> Fall from a height of less than 1.5 m			
Mechanical <input type="checkbox"/> Crushing – collapse - pinch <input type="checkbox"/> Injury or cut from equipment <input type="checkbox"/> Projection of parts, tools, dust <input type="checkbox"/> Projection of fluids under pressure			
Thermal <input type="checkbox"/> Contact with hot surface(s) or liquid(s) <input type="checkbox"/> Hot work (welding)			
Confined space or trench work <input type="checkbox"/> All risks related to working in a confined space <input type="checkbox"/> All risks related to working in trenches			

3

Preparation of the JSA

Basic steps of the task	Potential risks or hazards	Measures to minimize or eliminate the hazard (who, what, where, when and how)
LOCATION AND SECURING OF THE WORK AREA	<ul style="list-style-type: none"> Presence of other operations in the work area; Slippery/icy ground or container floor; Partially to completely damaged floor in some containers; Weakened condition of sea containers; Presence of volatile soot in the work area; Insufficient lighting in the containers; 	<ul style="list-style-type: none"> Complete STOP form (Stop all Tasks and Observe for Prevention) according to ESS-02-PR – Risk Management or BIM's equivalent form; All workers affected to hot work must be trained and informed of risks and prevention and safe working methods; Suitable PPE: <ul style="list-style-type: none"> Gloves, Tyvek® suit covering neck, wrists, and ankles; Half-mask with P100 cartridge is a minimum requirement to enter the work area. A full-face mask should be worn instead of the half-mask for the cutting tool operator;

Basic steps of the task	Potential risks or hazards	Measures to minimize or eliminate the hazard (who, what, where, when and how)
	<ul style="list-style-type: none"> Other dangers: 	<ul style="list-style-type: none"> During work, do not smoke, eat, drink or chew any substances in the work area; Delineate the work perimeter to restrict access to authorized workers only; Verify the quality of the container and inspect the ladder or the lift to ensure the stability of the installation; All vehicles near the work area should be positioned at a distance greater than 3 m; Apply the 3 point contact rule when using a ladder and handle tools using a rope or a wire; Ensure that the floor and ground surfaces are safe for work to be conducted; Use of spot lights to increase visibility during work inside the container; Other measures:
<p>CLEANING OF THE CONTAMINATED SURFACE ALONG THE CUTTING LINE</p>	<ul style="list-style-type: none"> Projection of soot, dust or particles; Release of contaminated waste materials during cleaning operations; Other dangers: 	<ul style="list-style-type: none"> Use suitable PPE; All soot particles that seem volatile or not well attached to the container surfaces should be cleaned using a vacuum equipped with a HEPA filter; All fixed soot particles must be cleaned with a wet rag over a width of 30 cm along the cutting line; Use of rags must be conducted without rinsing dirty rags or, if rinsing operations are performed, equipment must be used to avoid the release of contaminated water into the environment. All rags must be stored in an open top drum or a Quatrex-type bag and contaminated water in a close top drum; Other measures:
<p>CUTTING THE WELDED JUNCTIONS BETWEEN THE CONTAINERS</p>	<ul style="list-style-type: none"> Emission of dust and smoke while cutting or cleaning the container surface; Risk of being injured by the cutting tool; Risk of pinching or crushing; Work in a restricted area; <p><u>Use of manual tools:</u></p> <ul style="list-style-type: none"> Task with repetitive movements associated with postural constraints and/or significant effort; Risk of falling forward during operation of the tool; Other dangers: 	<ul style="list-style-type: none"> Use suitable PPE; Cut along the previously cleaned cutting line; Worker must be trained before using the cutting tool; Worker must hold the cutting equipment tightly with both hands; Worker must be positioned out of the cutting line while using the cutting tool; Worker must not stand in front of, and never over, the cutting tool; Do not force or overstrain the cutting tool; Respect ergonomic standards related to the work area, lifting techniques (bend knees, hold objects close to your body, use legs rather than back). Place feet in front of the object to lift, do not twist. Do not hesitate to ask for help; Other measures:

Basic steps of the task	Potential risks or hazards	Measures to minimize or eliminate the hazard (who, what, where, when and how)
FINAL CLEAN-UP AFTER CUTTING WORK AND DEMOBILIZATION OF THE CUTTING EQUIPMENT	<ul style="list-style-type: none"> Emission of dust or cutting residues; Risk of tools falling; Other dangers: 	<ul style="list-style-type: none"> Use suitable PPE; Handle tools using a rope or a wire while using a ladder or lifting equipment; Use wet rags or a vacuum with a HEPA filter to clean surfaces with potentially contaminated cutting residues; Other measures:

4 Specific considerations

Is there any special material to be used that has not yet been mentioned (including personal protection equipment (PPE))? Consult any Material Safety Data Sheet (MSDS) if applicable.
How will we proceed if a change is made to the scope of work? (that is, how will we define and communicate such change)
Indicate and outline at which times the STOP process will have to be performed during this activity.

5 Identification and signature

Prepared by:	Function:	Date:
Person(s) performing the work : Name(s)	Signature:	Date:
JSA approved by the supervisor of the job site :	Signature:	Date:

6 Review of the JSA

Did an incident related to this task occur while work was being carried out?
Is a modification required for the JSA?

APPENDIX E

BACKHAUL REQUEST

Ship To :
Address:

C/O Valport Maritime Services
Port of Valleyfeild
950 Boul Gerard Cadieux
Valleyfield QC J6T6L4

Phone:
Fax:
Email:

BIM
Contact in Montreal: QE/Sanexen, M. Benoit Dion
email: bdion@qenv.ca
Phone: 514-718-1230

Item #	Description	Qty	Backhaul	Weight (MT)		Dimensions (LxWxH)		Vessel Name	Vessel #
291051-8	20' C/T Orange // Expired food, Not TDG Regulated >>Final Destin.: 2	1		6.20	20	8.00	8.60		
TTNU-142745-9	20' C/T Orange // Domestic garbage, Not TDG Regulated >>Final Destin.: 2	1		4.70	20	8.00	8.60		
POCU 005274-7	20' C/T Blue // Domestic garbage, Not TDG Regulated >>Final Destin.: 2	1		4.70	20	8.00	8.60		
GATU-0330486	20' C/T Grey // Domestic garbage, Not TDG Regulated >>Final Destin.: 2	1		4.70	20	8.00	8.60		
CBHU-188189	40' C/T Grey // Waste Oil and Contaminated Oily Solids, Not TDG RegulatedIncl: UN 1950 AEROSOLS, 2.1 >>Final Destin.: 3	1		15.30	40	8.00	8.60		
DLMU 120604-8	40' C/T Blue // Hydrocarbon contaminated soil and Oily solids, Not TDG Regulated >>Final Destin.: 3/4 (call)	1		15.80	40	8.00	8.60		
TRLU 633863-0	40' C/T Green // Oily Water, Not TDG Regulated >>Final Destin.: 3	1		21.80	40	8.00	8.60		
TDRU 123840-1	40' C/T Red // Oily Water, Not TDG Regulated >>Final Destin.: 3	1		21.80	40	8.00	8.60		
TDRU 110554	40' C/T Orange // Oily Water, Not TDG Regulated >>Final Destin.: 3	1		22.80	40	8.00	8.60		
TRLU 628738-5	40' C/T Red // Oily Water, Not TDG Regulated >>Final Destin.: 3	1		23.80	40	8.00	8.60		
CBHU 805431-9	40' C/T Green // Waste Oil, Not TDG Regulated >>Final Destin.: 3	1		22.80	40	8.00	8.60		
CBHU 992607-8	40' C/T Grey // Wasted Oil, Oily solids, Not TDG Regulated >>Final Destin.: 3	1		16.25	40	8.00	8.60		
TRLU 619014-2	40' C/T Red // Oily solids & Ashes, Not TDG Regulated >>Final Destin.: 3	1		8.80	40	8.00	8.60		
WFHU 501762-2	40' C/T Red // Waste Oil and Contaminated Oily Solids, Not TDG Regulated >>Final Destin.: 3	1		8.81	40	8.00	8.60		
DLMU 8621307	40' C/T Grey // Oily Water, Sewage and Waste oil, Not TDG Regulated >>Final Destin.: 3	1		21.60	40	8.00	8.60		
SPSU 400009-6	40' O/T Blue // Bladders bags, Not TDG Regulated >>Final Destin.: 3	1		13.23	40	8.00	8.60		
Final destination for containers									
2. Waste to Landfill:									
Waste Management inc.									
Sainte-Sophie Landfill									
2535 1re Rue, Sainte-Sophie, QC J5J 2R7									
Téléphone : 1-800-267-7874									
3. Haz Waste :									
Solva-Rec Environnement inc.									
Rue Lucien Beaudin,									
Saint-Jean-sur-Richelieu, QC J2X 5M3									
Téléphone : (450) 347-3008									
4. Contaminated Soils :									
Solum Environnement 2010 inc.									
530, rue Bourgeois Nord									
Saint-Amable (Quebec) J0L 1N0									
Téléphone : (450) 649-7484									

APPENDIX F

SHIPPING MANIFESTS

MOVEMENT DOCUMENT / MANIFEST DOCUMENT DE MOUVEMENT / MANIFESTE

This Movement document/manifest conforms to all federal and provincial transport and environmental legislation.
Ce document de mouvement/manifeste est conforme aux législations fédérale et provinciale sur l'environnement et le transport.

HL61225-9

Movement Document / Manifest Reference No.
N° de référence du document de mouvement/manifeste

A Generator / consigneur Producteur / expéditeur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial		B Carrier Transporteur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial		C Réceiver / consignee Réceptionnaire / destinataire Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial	
Company name / Nom de l'entreprise Qikigtauluk Env. (for BIM)		Company name / Nom de l'entreprise Nunavut Sedlink & Supply (NSSI)		Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous	
Mailing address / Adresse postale 9935 Catania Brossard Qc J4Z 3V4		Mailing address / Adresse postale 8565 Boul. 44er, Ste-Catharine, Qc J5C 1B5		Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous	
E-mail / Courriel électronique bdion@genv.ca		E-mail / Courriel électronique daniel.desgagnés@transarctik.com		Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous	
Shipping site address / Adresse du lieu de l'expédition Milne Inlet (Nunavut) Nu J4Z 3V4		Shipping site address / Adresse du lieu de l'expédition Milne Inlet Nu J4Z 3V4		Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous	
Intended Receiver / consignee Réceptionnaire / destinataire prévu Solva-Rec Env.		Port of entry Point d'entrée International use only		Port of exit Point de sortie International use only	
Mailing address / Adresse postale 795 Lucien-Béaudin, St-Jean, Qc, J2X 5M3		Carrier Certification: I certify that I have received waste or recyclable material from the generator / consigneur for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Attestation du transporteur: J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets.		Name of authorized person (print): Nom de l'agent autorisé (caractères d'imprimerie):	
E-mail / Courriel électronique Hugues.Lampr@solva-rec.com		Signature:		Date received / Date de réception Year / Année Month / Mois Day / Jour	
Receiving site address / Adresse du lieu de réception 795 Lucien-Béaudin St-Jean Qc J2X 5M3		Year / Année Month / Mois Day / Jour		Time / Heure <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
If waste or recyclable material to be transferred, specify intended company name / Si les déchets ou matières recyclables doivent être transférés, préciser le nom du destinataire		Registration No. / Provincial ID No. N° d'immatriculation / d'id provincial		Quantity received / Quantité reçue Units / Unités L or / ou kg	
Comments / Commentaires		Handling Code / Code de manutention		Shipment / Envoi Accepted / Refused / Pack. / Veh.	
Decort. / Veh.		National code in country of / Code du pays		Customs code(s) Code(s) de douanes	
Notice No. N° de notification		Notice Line No. N° de ligne de la notification		Shipment Envoi	
Ship / De		D or R code Code E ou R		C code Code C	
Basel Annex VIII or OECD Code Annexe VIII de Bâle ou Code OCDE		H code Code H		Y code Code Y	
Export Exportation		Import Importation		Customs code(s) Code(s) de douanes	
International use only		International use only		International use only	
Generator / consigneur certification: I certify that the information contained in Part A is correct and complete. Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets.		Name of authorized person (print) Nom de l'agent autorisé (caractères d'imprimerie) BENOIT DION		Tel. No. / N° de tél. 450 466 2123	
Special handling / Manutention spéciale <input type="checkbox"/> Attached / Ci-joint: <input type="checkbox"/> As follows / Ci-contre:		Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour		Time / Heure <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.	
Scheduled arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour		Receiver / consignee certification: I certify that the information contained in Part C is correct and complete. Attestation du réceptionnaire / destinataire: J'atteste que tous les renseignements à la partie C sont exacts et complets.		Name of authorized person (print) Nom de l'agent autorisé (caractères d'imprimerie)	
Signature		Tel. No. / N° de tél.		Signature	

Marine container	UN	Shipping Name	Type	Class	PG	Total Weight	Unit (KG ou L)	No	Packing Type	Provincial Code	Physical State	Total
Marine container (20') 399892-6	UN 2794	Batteries, wet, filled with acid	Oversize drum	8	III	117.6	KG	1	1	E15	S	1
	UN 1263	Paint related material	Oversize drum	3	III	803.2	KG	4	1	B09	S	4
	UN 2024	Mercury compound, liquid, n.o.s., (mercury)	Oversize drum	6.1	III	34.8	KG	1	1	E23	L	1
	UN 1710	Trichloroethylene	Oversize drum	6.1	III	60	KG	1	1	N12	L	1
	UN 1202	Diesel	Oversize drum	3	III	332.6	KG	3	1	D03	L	3
	n/a	Waste grease	Oversize drum	n/a	n/a	313.6	KG	1	1	A04	S/L	1
	n/a	Waste oil	Quatrex	n/a	n/a	599	KG	1	7	A01	L	1
	Placards : 3, 8, 6.1 & Marine Pollutant											
Estimated total weight						2260.8						

Palett / Crate / marine container	UN	Shipping Name	Type	Class	PG	Total Weight	Unit (KG ou L)	No	Packing Type	Provincial Code	Physical State	Total
Pallet C-01	UN 1978	Propane	Cylinder	2.1	n/a	172.37	KG	5	7	O02	G	5
Wooden crate C-02	UN 1044	Fire extinguisher	Cylinder	2.2	n/a	35	KG	10	7	O02	G	10
Wooden crate C-03	UN 1950	Aerosols, flammable	Cans	2.1	n/a	25	KG	1	7	O02	G	n/a
Wooden crate C-04	UN 1001	Acetylene	Cylinder	2.1	n/a	30	KG	1	7	O02	G	1
Wooden crate C-05	UN 1072	Oxygen, compressed	Cylinder	2.2 (5.1)	n/a	60	KG	3	7	O02	G	3
Marine container (20') 679283-0	n/a	HC contaminated soil (in bags)	Bags	n/a	n/a	14500	KG	1	7	O01	S	1
Marine container (20') 683413-3	n/a	HC contaminated soil (in bags)	Bags	n/a	n/a	14500	KG	1	7	O01	S	1
Marine container (40') 184684-9	n/a	HC contaminated soil (in bags)	Bags	n/a	n/a	22 000	KG	1	7	O01	S	1
Marine container (40') 139098-9	n/a	HC contaminated soil (in bags)	Bags	n/a	n/a	20 500	KG	1	7	O01	S	1
Marine container (40') 601132-8	n/a	HC contaminated soil (in bags)	Bags	n/a	n/a	23 500	KG	1	7	O01	S	1
Sticker : each crate/pallet has his own sticker (see above)												

Project: Anmar

Prepared by : Benoit Dion, Project Director, Qikiqtaaluk Environmental

PACKING LIST

Item: Container # 399892-6 (page -1/2)

Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental

(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Solva-Rec Environnement inc.

Rue Lucien Beaudin,

Saint-Jean-sur-Richelieu, Qc, J2X 5M3

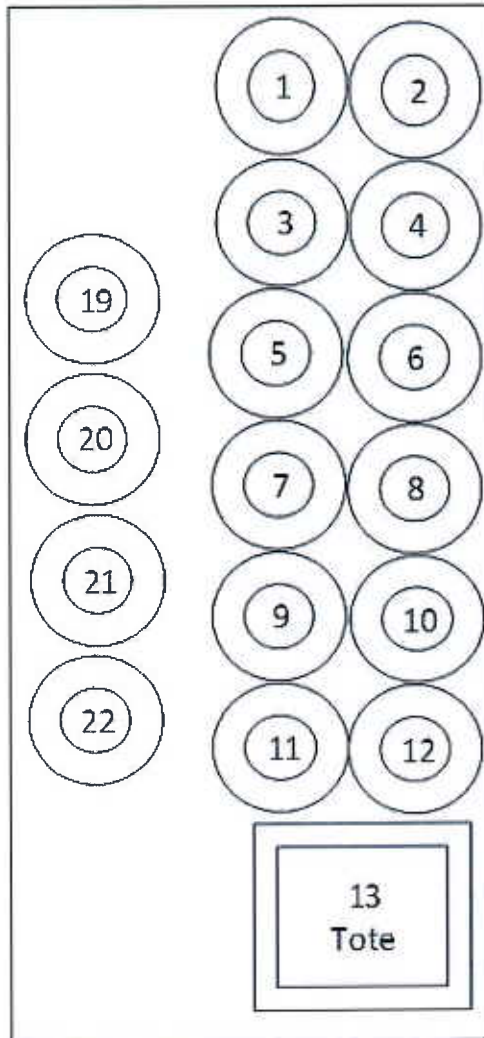
Tel: 450-347-3008

Item	UN	Name	Class	Sub	PG	Qty	Detail	Outer Packg	Inner Pckg	Kg
1	na	Not TDG regulated				Estim. Vol=160L	Metal (lead) with ashes	Salvg Drum	Liner+HDPE Poly drum	444,5
2	na	Not TDG regulated	-	-	-	Estim. Vol=175L	Metal (lead) with ashes	Salvg Drum	Liner+HDPE Poly drum	475,1
3	na	Not TDG regulated	-	-	-	Estim. Vol=150L	Waste grease	Salvg Drum	Liner bag	313,6
4	2794	BATTERIES, WET, FILLED WITH ACID	8	-	III	4x12V Batt.	Sealed regular lead batteries, short-cut protected	Salvg Drum	HDPE Poly drum	117,6
5	na	Not TDG regulated	-	-	-	Estim. vol=175L	Wasted oily sorbents, granular & diapers (sheet)	Salvg Drum	Liner	177,3
6	na	Not TDG regulated	-	-	-	Estim. vol=175L	Wasted oily sorbents, granular & diapers (sheet)	Salvg Drum	Liner	177,3
7	1263	PAINT RELATED MATERIAL	3	MP	I	60L	Solvent (Resin, Shellac?)	Salvg Drum	C/T Metal Drum 16 gage	95,5
8	2024	Mercury compound, liquid, n.o.s.	6,1	MP	I	30 Bulbs	Hg lightning bulbs (sodium/mercury)	Salvg Drum	Individually protected inside a liner	34,8
8	1710	TRICHLOROETHYLENE	6,1	-	III	7 x 1 gal	7 x metal gals	Salvg Drum	7 x gals in HDPE Poly drum	60,0
9	1202	DIESEL FUEL	3	-	III	160L	Diesel Fuel	Salvg Drum	C/T Metal Drum 16 gage	178,9
10	1202	DIESEL FUEL	3	-	III	130L	Diesel Fuel	Salvg Drum	C/T Metal Drum 16 gage	153,7
11	1263	PAINT RELATED MATERIAL	3	MP	III	150L	Solid paint (Latex?)	Salvg Drum	Liner bag	253,6
12	1263	PAINT RELATED MATERIAL	3	MP	III	75L	Solvent (thinner?)	Salvg Drum	C/T Metal Drum 16 gage	110,5
13	na	Not TDG regulated	-	-	-	0,6 cu M	Waste oil	Tote-Tank	-	599,0
19	1263	PAINT	3	MP	I	180L	Liquid Paint (Latex?)	Salvg Drum	Liner+HDPE Poly drum	343,6
20	na	Not TDG regulated	-	-	-	nd	Metal (lead) with ashes	Salvg Drum	Liner	153,6
21	na	Not TDG regulated	-	-	-	nd	Fibrous fibre debris, (burned fiberglass ?)	Salvg Drum	Liner	151,1
22	na	Not TDG regulated	-	-	-	80L	Yellow powder from dry extinguishers	Salvg Drum	Liner bag	58,6
									Total inside:	3 898
									Container:	2 200
									Total Net:	6 098

PACKING LIST

Item: Container # 399892-6 (page-2/2)

Packaging details: 16 salvage drums all numbered and properly labelled plus 1 tote-tank on a single level, the voids are filled with pallets.



Item: **Package # C01 (Crate)**

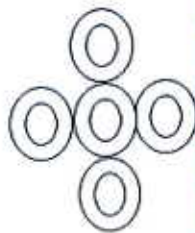
Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental
(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Solva-Rec Environnement inc.
Rue Lucien Beaudin,
Saint-Jean-sur-Richelieu, Qc, J2X 5M3
Tel: 450-347-3008

Item	UN	Name	Class	Sub	PG	Qty	Detail	Outer Packg	Inner Pckg	Kg
C01	1978	PROPANE	2,1	-	-	1	72" Propane tank	Pallet	Cylinder	45,359
	1978	PROPANE	2,1	-	-	1	48" Propane tank	Pallet	Cylinder	31,752
	1978	PROPANE	2,1	-	-	1	48" Propane tank	Pallet	Cylinder	31,752
	1978	PROPANE	2,1	-	-	1	48" Propane tank	Pallet	Cylinder	31,752
	1978	PROPANE	2,1	-	-	1	48" Propane tank	Pallet	Cylinder	31,752
						5				172,37

Packaging details: 5 propane cylinders, metal banded together and with the pallet; all labelled and wrapped.



Item: Package # C02 (Crate)

Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental
(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Solva-Rec Environnement inc.
Rue Lucien Beaudin,
Saint-Jean-sur-Richelieu, Qc, J2X 5M3
Tel: 450-347-3008

Item	UN	Name	Class	Sub	PG	Qty	Detail	Outer Packg	Inner Pckg	Kg
C02	1044	FIRE EXTINGUISHER	2,2	-	-	10	Waste fire extinguishers, burned, all vertical & tight.	Wood Crate	Cylinders	35 kg

Packaging details: 10 burned Fire Extinguishers vertical, tight inside a wood crate, metal strapped; labelled and wrapped.

C-02



Item: Package # C03 (Crate)

Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental

(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Solva-Rec Environnement inc.

Rue Lucien Beaudin,

Saint-Jean-sur-Richelieu, Qc, J2X 5M3

Tel: 450-347-3008

Item	UN	Name	Class	Sub	PG	Qty	Detail	Outer Packg	Inner Pckg	Kg
C03	1950	AEROSOLS	2,1	-	-	Estim. vol=75L	Waste Aerosol	Wood Crate	Liner & sorber	25

Packaging details: small amount of spent aerosols within a liner bag with bulk sorber; wooden crated, strapped, labelled and wrapped.

C-03



Item: Package # C04 (Crate)

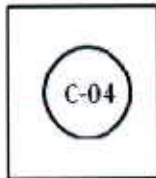
Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental
(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Solva-Rec Environnement inc.
Rue Lucien Beaudin,
Saint-Jean-sur-Richelieu, Qc, J2X 5M3
Tel: 450-347-3008

Item	UN	Name	Class	Sub	PG	Qty	Detail	Outer Packg	Inner Pckg	Kg
C04	1001	ACETYLENE, DISSOLVED	2,1	-	-	1	Burned, cap missing not replaceable, secured tight in a closed wooden crate.	wood Crate	Cylinders	30 kg

Packaging details: 1 acetylene cylinder with no original protective cap, specially prepared in a wood crate to protect the valve. Strapped, labelled and wrapped.



Item: Package # C05 (Crate)

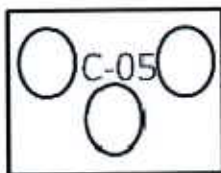
Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental
(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Solva-Rec Environnement inc.
Rue Lucien Beaudin,
Saint-Jean-sur-Richelieu, Qc, J2X 5M3
Tel: 450-347-3008

Item	UN	Name	Class	Sub	PG	Qty	Detail	Outer Packg	Inner Pckg	Kg
C05	1072	OXYGEN, COMPRESSED	2,2	5.1	-	3	Burned, cap heavily damaged, not replaceable, secured tigh in a closed wodden crate.	wood Crate	Cylinders	60 kg

Packaging details: 3 oxygen cylinders with burned protective cap, specially prepared and separated in a wood crate to protect the valves. Strapped, labelled and wrapped.



Item: **Special Packs # 1, #2, #3**

Destination: Valport Maritime Services / Port of Valleyfield

Pickup info : Qikiqtaaluk Environmental
(Tel: 1-866-634-6367, Cel: 514-718-1230)

Final Dest.: Arcelor- Mittal Montreal inc.
3185 Route Marie Victorin,
Contrecoeur, QC J0L 1C0
Téléphone : (450) 392-3200.

Packaging details: 3 packs consist of each 4x stacked crushed containers, welded at the 4 corners. 2 of them are wrapped as a precaution against soot staining.



SHIPPER'S DECLARATION FOR DANGEROUS GOODS - DÉCLARATION DE MARCHANDISES DANGEREUSES - IMDG 2014

Shipper
Expéditeur Baffinland Iron Mines (consultant Qikiqtaaluk Env.)
From Milne Inlet, Nunavut

ref. No.
No. de réf: Page 1 of 3 pages

Emergency 24-hour No.: Canutec 1 (613) 996-6666
Urgence, No. 24-heures

Consignee
Destinataire Qikiqtaaluk Environmental (Hold for Pick-up at the port)
9935 Avenue Catania, Entrée 1, Bureau 200
Brossard, J4Z 3V4

Other shipping information/ autres informations:

Maritime transport:
Nunavut Sealink and Supply Inc. (NSSI)
Sedna Desgagnés (Official no. 833433 / OMI no. 9402093)

Shipping Marks Marques	No. & kind of pkgs No. et type de colis	UN, Shipping Name, Class (sub), PG, F.P. (deg. C), marine pollutant Add technical name (s.p. 274 for primary and sub. classes and M.P. UN, désignation, classe (sub), GE, P. E. (deg. C), polluant marin Ajoutez le nom tech. (d.p. 274 pour la classe prim., sub. et p.m.)	Net Qty. (L / kg) Qté Nette	Gross wght (kg) Poids brut	Volume cu. M
UN 2794	1 x DRUM	UN 2794, BATTERIES, WET, FILLED WITH ACID, CLASS 8	97.6 KG	117.6 KG	0.36
UN 1263	4 x DRUM	UN 1263, PAINT RELATED MATERIAL, CLASS 3, PG III, F.P. 40 degre celsius, c.c.	723.2 KG	803.2 KG	1.44
UN 1202	2 x DRUM	UN 1202, DIESEL, CLASS 3, PG III, F.P. 39 degre celsius, c.c.	292.6 KG	332.6 KG	0.72
UN 2024	1 X DRUM	UN 2024, MERCURY COMPOUND, LIQUID, N.O.S., (MERCURY), CLASS 6.1, PG I, M.P.	14.8 KG	34.8 KG	0.36
UN 1710	1 X DRUM	UN 1710, TRICHLOROETHYLENE, CLASS 6.1, PG III	40 KG	60 KG	0.36

Additional information / Autres informations

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to the IMDG Code and applicable international and national governmental regulations. Je déclare que les renseignements relatifs au contenu, à la description du produit expédié sont complets et exacts; et que le contenu est correctement classé, emballé, identifié, étiqueté/placardé et qu'il est conforme à tous égards aux règlements nationaux et internationaux en matière de transport. Je déclare que toutes les prescriptions requises pour le transport maritime, selon le Code IMDG, ont été respectées

Name, title & firm of signatory, / Nom, titre, firme et signature

Benoit Dion, Project Director, QE

Place & Date

Brossard, Qc

2015-09-15

Signature

Container no. / No. du conteneur	Seal serial no. / No. de scellement	Size and Type / grandeur et type	Tare Mass / Tare	Gross Mass / masse brute
399 892-6		20 feet	3898 + 2200	6098

It is declared that the packing of the goods into the unit has been carried out in accordance the provisions of 5.4.2.1. Je déclare que les marchandises décrites ont été empotées/chargées dans le conteneur/véhicule conformément aux dispositions applicables en 5.4.2.1.

Name, title & firm of signatory, / Nom, titre, firme et signature

Benoit Dion, Project Director, QE

Place & Date

Brossard, Qc

2015-09-15

Signature

SHIPPER'S DECLARATION FOR DANGEROUS GOODS - DÉCLARATION DE MARCHANDISES DANGEREUSES - IMDG 2014

Shipper
Expéditeur Baffinland Iron Mines (consultant Qikiqtaaluk Env.)
From Milne Inlet, Nunavut

ref. No.
No. de réf:

Page 2 of 3 pages

Emergency 24-hour No.: Canutec 1 (613) 996-6666
Urgence, No. 24-heures

Consignee
Destinataire Qikiqtaaluk Environmental (Hold for Pick-up at the port)
9935 Avenue Catania, Entrée 1, Bureau 200
Brossard, J4Z 3V4

Other shipping information/ autres informations:

Maritime transport:
Nunavut Sealink and Supply Inc. (NSSI)
Sedna Desgagnés (Official no. 833433 / OMI no. 9402093)

Shipping Marks Marques	No. & kind of pkgs No. et type de colis	UN, Shipping Name, Class (sub), PG, F.P. (deg. C), marine pollutant Add technical name (s.p. 274 for primary and sub. classes and M.P. UN, désignation, classe (sub), GE, P. E. (deg. C), polluant marin Ajoutez le nom tech. (d.p. 274 pour la classe prim., sub. et p.m.)	Net Qty. (L / kg) Qté Nette	Gross wght (kg) Poids brut	Volume cu. M
UN 1978	5 cylinders overpacked in 1 wooden crate +	UN 1978, PROPANE, CLASSE 2.1	162.37 KG	172.37 KG	0.5
UN 1044	10 cylinders overpacked in 1 wooden crate	UN 1044, FIRE EXTINGUISHER, CLASS 2.2	30 KG	35 KG	0.3

Additional information / Autres informations

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to the IMDG Code and applicable international and national governmental regulations. Je déclare que les renseignements relatifs au contenu, à la description du produit expédié sont complets et exacts; et que le contenu est correctement classé, emballé, identifié, étiqueté/placardé et qu'il est conforme à tous égards aux règlements nationaux et internationaux en matière de transport. Je déclare que toutes les prescriptions requises pour le transport maritime, selon le Code IMDG, ont été respectées

Name, title & firm of signatory, / Nom, titre, firme et signature

Benoit Dion, Project Director, QE

Place & Date

Brossard, Qc

2015-09-15

Signature

Container no. / No. du conteneur	Seal serial no. / No. de scellement	Size and Type / grandeur et type	Tare Mass / Tare	Gross Mass / masse brute
n/a	n/a	2 x wooden crate (0.8 m3)	192.37 KG	207.37 KG

It is declared that the packing of the goods into the unit has been carried out in accordance the provisions of 5.4.2.1. Je déclare que les marchandises décrites ont été empotées/chargées dans le conteneur/véhicule conformément aux dispositions applicables en 5.4.2.1.

Name, title & firm of signatory, / Nom, titre, firme et signature

Benoit Dion, Project Director, QE

Place & Date

Ship's name / Navire Sedna Desgagnés (NSSI)

Port of loading
Port de chargement Milne Inlet

Port of discharge
Port de déchargement Ste-Catherine

Signature



SHIPPER'S DECLARATION FOR DANGEROUS GOODS - DÉCLARATION DE MARCHANDISES DANGEREUSES - IMDG 2014

Shipper
Expéditeur Baffinland Iron Mines (consultant Qikiqtaaluk Env.)
From Milne Inlet, Nunavut

ref. No.
No. de réf: Page 3 of 3 pages

Emergency 24-hour No.: Canutec 1 (613) 996-6666
Urgence, No. 24-heures

Consignee
Destinataire Qikiqtaaluk Environmental (Hold for Pick-up at the port)
9935 Avenue Catania, Entrée 1, Bureau 200
Brossard, J4Z 3V4

Other shipping information/ autres informations:

Maritime transport:
Nunavut Sealink and Supply Inc. (NSSI)
Sedna Desgagnés (Official no. 833433 / OMI no. 9402093)

Shipping Marks Marques	No. & kind of pkgs No. et type de colis	UN, Shipping Name, Class (sub), PG, F.P. (deg. C), marine pollutant Add technical name (s.p. 274 for primary and sub. classes and M.P. UN, désignation, classe (sub), GE, P. E. (deg. C), polluant marin Ajoutez le nom tech. (d.p. 274 pour la classe prim., sub. et p.m.)	Net Qty. (L / kg) Qté Nette	Gross wght (kg) Poids brut	Volume cu. M
UN 1950 +	1 X cylinder overpacked in 1 wooden crate	UN 1950, AEROSOLS, FLAMMABLE, CLASS 2.1 (All dried)	10 KG	15 KG	0.2
UN 1072	3 X cylinder overpacked in 1 wooden crate	UN 1072, OXYGEN, COMPRESSED, CLASS 2.2 (5.1)	50 KG	60 KG	0.3
UN1001	1 X cylinder overpacked in 1 wooden crate	UN 1001, ACETYLENE, DISSOLVED, CLASS 2.1	25 KG	30 KG	0.2

Additional information / Autres informations

I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to the IMDG Code and applicable international and national governmental regulations. Je déclare que les renseignements relatifs au contenu, à la description du produit expédié sont complets et exacts; et que le contenu est correctement classé, emballé, identifié, étiqueté/placardé et qu'il est conforme à tous égards aux règlements nationaux et internationaux en matière de transport. Je déclare que toutes les prescriptions requises pour le transport maritime, selon le Code IMDG, ont été respectées

Name, title & firm of signatory, / Nom, titre, firme et signature

Benoit Dion, Project Director, QE

Place & Date

Brossard, Qc

2015-09-15

Signature

Container no. / No. du conteneur	Seal serial no. / No. de scellement	Size and Type / grandeur et type	Tare Mass / Tare	Gross Mass\masse brute
n/a	n/a	3 wooden crate (0.7 m3)	85	105

It is declared that the packing of the goods into the unit has been carried out in accordance the provisions of 5.4.2.1 Je déclare que les marchandises décrites ont été emportées/chargées dans le conteneur/véhicule conformément aux disposition applicables en 5.4.2.1.

Name, title & firm of signatory, / Nom, titre, firme et signature

Benoit Dion, Project Director, QE

Place & Date

Ship's name /Navire

Sedna Desgagnés (NSSI)

Port of loading

Milne Inlet

Port de chargement

Port of discharge

Ste-Catherine

Port de déchargement

Signature



APPENDIX G

OPERATING PERMITS



GOVERNEMENT
DU QUÉBEC

SERVICES
DE PROTECTION
L'ENVIRONNEMENT

CABINET
DU DIRECTEUR

CITÉ PARLEMENTAIRE
QUÉBEC
G1A 1B7

NOV 11 1975

- 1 AOUT 1990

CODE:	6Q1.44
CIRCULATION	
COPIES	
DOSSIER	

Québec, le 8 octobre 1975

Sidbec Feruni
507, Place d'Armes
Montréal, P.Qué.

A l'attention de: Monsieur J. Edmond Pontbriand.

OBJET: certificat d'autorisation

Monsieur,

Suite à la demande d'autorisation que vous nous avez soumise le 15 avril 1974, je vous annonce que, en vertu des pouvoirs qui me sont conférés par la Loi de la qualité de l'environnement (1972, chapitre 49), j'autorise l'exécution des travaux décrits aux plans et devis mentionnés ci-dessous.

Les travaux autorisés par les présentes consistent à l'exploitation d'un établissement de recyclage de la ferraille sur une partie des lots P-235 à P-244 du cadastre officiel de la Paroisse de Contrecoeur et peuvent être décrits sommairement comme suit:

- l'installation d'un système anti-pollution composé de:
 - 5 cyclones Cluster (modèle 2 x 2C-62-CG-370 de Buell)
 - 2 multivanes scrubber Ducon (modèle II, grosseur 126, type L)

Le système décrit ci-haut n'émettra que 7.2 lbs/hr à l'atmosphère (garantie de la compagnie Ducon).

- Les déchets industriels devront être acheminés vers un site approuvé par nos Services.
- Le procédé de récupération d'automobile sera installé à l'extérieur. La ferraille sera coupée dans un abri de 200 pieds de longueur par 95 pieds de largeur, muni de 3 ventilateurs de 75,000 CFM. Une autre bâtisse sera disponible pour abriter les bureaux et les ateliers de mécanique. L'opérateur de la guillotine opérera celle-ci à partir d'une cabine insonorisée. De plus, la compagnie accommodera leurs bâtisses des facilités sanitaires décrites dans les plans et devis.
- La compagnie s'engage à ne pas excéder 45 dB(A) à la limite de la propriété la plus rapprochée après 23 heure. De plus la cisaille Logeman, la grue Bucyrus-Erie et la mini locomotive sont les seuls équipements autorisés à fonctionner entre 23 hr et 01 hr, et dans le cas de la grue, un écran anti-bruit atténuant le bruit d'au moins 7 dB à 63 Hz pour pouvoir l'opérer entre 23 hr et 01 hr.

La compagnie s'engage à respecter tous les futurs règlements relatifs aux bruits communautaires.

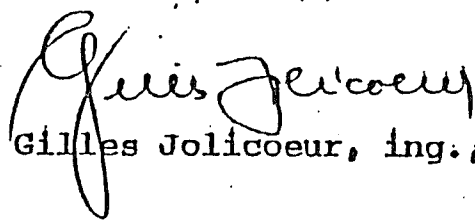
le tout tel que représenté aux plans et devis préparés par Monsieur Edmond Pontbriand, en date du 15 avril 1974.

Ces travaux peuvent être entrepris à compter de la date des présentes et après avoir obtenu toute autre approbation ou autorisation requise par toute loi ou tout règlement, le cas échéant. Ils devront être exécutés conformément aux plans et devis décrits ci-dessus et toute modification éventuelle aux plans et devis doit être autorisée par le soussigné avant que les travaux ne soient exécutés.

La présente autorisation ne vous soustrait pas à l'application de toute loi et de tout règlement.

Je vous prie d'agréer, cher Monsieur, l'expression de mes sentiments distingués.

Le Directeur des Services de protection de l'environnement


Gilles Jolicoeur, Ing., M.Sc.



Sainte-Thérèse, le 31 août 2012

**CERTIFICAT D'AUTORISATION
(LRQ, c.Q-2, article 22)**

Régie intermunicipale Argenteuil Deux-Montagnes
380, rue Principale
Lachute (Québec) J8H 1Y2

N/Réf : 7522-15-01-00009-11
400583032

**Objet : Aménagement et exploitation de la 2^e phase de l'agrandissement
du lieu d'enfouissement technique, nommée Phase 3**

Mesdames,
Messieurs,

À la suite de votre demande de certificat d'autorisation datée du 21 avril 2009, reçue le 27 avril 2009 et dûment complétée le 29 août 2012, j'autorise, conformément à l'article 22 de la *Loi sur la qualité de l'environnement* (L.R.Q., chapitre Q-2), la titulaire ci-dessus mentionnée à réaliser le projet décrit ci-dessous :

- Aménagement et exploitation de la 2^e phase de l'agrandissement du lieu d'enfouissement technique, dite Phase 3, pour un volume d'enfouissement total de 4,0 millions de mètres cubes et pour un tonnage maximal de 500 000 tonnes métriques par année ou pour un volume maximal de 667 000 mètres cubes par année, l'atteinte de la première de ces deux normes rendant caduque l'application de la seconde. L'atteinte de l'un ou l'autre de ces normes au cours d'une année d'exploitation exige l'arrêt de l'enfouissement des matières résiduelles jusqu'au début de la nouvelle année d'exploitation, fixée du 1^{er} novembre au 30 octobre de chaque année ;
- Le territoire de desserte est strictement limité aux MRC et municipalités identifiées au tableau 2.9 de l'étude d'impact d'octobre 1999 désigné à la condition 1 du décret 918-2003 de sorte que, conformément au jugement rendu le 22 février 2012 par la Cour d'appel du Québec dans le dossier 500-09-020961-108, les matières résiduelles pouvant être reçues et éliminées ne peuvent

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(LRQ c.Q-2, article 22)

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N/Réf. : 7522-15-01-00009-11
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Le 31 août 2012

- provenir que de ce territoire de desserte et ce, que ces matières transitent ou non par des centre de transfert de matières résiduelles;
- Le tout sur les lots 2 625 398 et 2 625 524, cadastre du Québec, chemin des Sources, ville de Lachute, MRC d'Argenteuil.

Les documents suivants font partie intégrante de la présente autorisation :

- Lettre au ministère du Développement durable, de l'environnement et des Parcs, datée du 21 avril 2009, signée par Pierre Gionet, Régie intermunicipale Argenteuil Deux-Montagnes, transmettant la demande de certificat d'autorisation ;
- Lettre au ministère du Développement durable, de l'environnement et des Parcs, datée du 24 novembre 2008, signée par Pierre Gionet, Régie intermunicipale Argenteuil Deux-Montagnes transmettant la résolution du conseil d'administration de la Régie intermunicipale Argenteuil Deux-Montagnes portant le numéro 10-11-08 concernant l'installation d'une torchère à flamme invisible conforme à la réglementation ;
- Rapport intitulé « Régie intermunicipale Argenteuil Deux-Montagnes, Agrandissement du lieu d'enfouissement technique Argenteuil Deux-Montagnes, Demande de certificat d'autorisation Phase III » daté d'avril 2009, signé par Jean-François Bélanger, ing., Julien Rosset, B.Sc., Scott McNicoll, ing., Alain Gravel, ing. et Alain Chevalier, ing., M.Env., Dessau ;
- Lettre au ministère du développement durable, de l'Environnement et des Parcs « Réponse à la demande d'information du MDDEP portant sur la requête de certificat d'autorisation pour la phase 3 du lieu d'enfouissement technique de la Régie intermunicipale Argenteuil Deux-Montagnes », datée du 22 septembre 2009, signée par Pierre Gionet, Régie intermunicipale Argenteuil Deux-Montagnes, transmettant une lettre de Gestion environnementale Nord-Sud, datée du 21 septembre 2009, signée par Jean Beaudoin et un rapport intitulé « Section F, Cahier des clauses techniques particulières », préparé par Dessau, daté de juin 2009 ;
- Lettre au ministère du développement durable, de l'Environnement et des Parcs « Demande de CA – LET RIADM, séquence de mise en place de l'écran d'étanchéité », datée du 20 novembre 2009, signée par Julien Rosset, Dessau, transmettant un plan ;
- Lettre au ministère du développement durable, de l'Environnement et des Parcs « Réponse à la demande d'information du MDDEP portant sur la requête de certificat d'autorisation pour la phase 3 du lieu d'enfouissement technique de la Régie intermunicipale Argenteuil Deux-Montagnes », datée du 30 novembre 2009, signée par Pierre Gionet, Régie intermunicipale Argenteuil Deux-

CERTIFICAT D'AUTORISATION
(LRQ c.Q-2, article 22)

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Montagnes, transmettant une lettre de Gestion environnementale Nord-Sud, datée du 19 novembre 2009, signée par Jean Beaudoin ;

- Lettre du ministère du Développement durable, de l'Environnement et des Parcs à M. Alain Chevalier, ing., Dessau, datée du 26 juin 2012, signée par Robert Marcotte, analyste ;
- Lettre au ministère du Développement durable de l'environnement et des Parcs « Votre lettre du 26 juin 2012 V/Réf. : 7522-15-01-00009-11 », datée du 6 juillet 2012, signée par Jean Beaudoin, RCI Environnement inc., accompagné d'un rapport « Certification de conformité des ouvrages de construction de la cellule d'enfouissement III-1 », daté du 28 juin 2012, signé et scellé par Joseph Nadim, ing.;
- Lettre au ministère du Développement durable, de l'Environnement et des Parcs, « Votre correspondance du 26 juin 2012, Demande de certificat d'autorisation de la Régie intermunicipale Argenteuil Deux-Montagnes pour l'aménagement et l'exploitation de la phase III du lieu d'enfouissement technique à Lachute, votre dossier : 7522-15-01-00009-11 », datée du 19 juillet 2012, signée par Pierre Gionet, Régie intermunicipale Argenteuil Deux-Montagnes ;
- Résolution datée du 11 juillet 2012 de l'administrateur unique de Gestion Environnementale Nord-Sud inc., signée par Lucien Rémillard transmise le 12 juillet 2012 au ministère du Développement durable, de l'Environnement et des Parcs par laquelle la corporation s'engage à souscrire les engagements requis par le Ministère dans sa lettre datée du 26 juin 2012 à M. Alain Chevalier, ing. ;
- Résolution datée du 11 juillet 2012 de l'administrateur unique de RCI Environnement inc., signée par Lucien Rémillard transmise le 12 juillet 2012 au ministère du Développement durable, de l'Environnement et des Parcs par laquelle la corporation s'engage à souscrire les engagements requis par le Ministère dans sa lettre datée du 26 juin 2012 à M. Alain Chevalier, ing. ;
- Résolution portant le numéro 21-07-12 du conseil d'administration de la Régie intermunicipale Argenteuil Deux-Montagnes, signée par Pierre Gionet ;
- Lettre au ministère du Développement durable, de l'Environnement et des Parcs, « Votre correspondance du 26 juin 2012, Demande de certificat d'autorisation de la Régie intermunicipale Argenteuil Deux-Montagnes pour l'aménagement et l'exploitation de la phase III du lieu d'enfouissement technique à Lachute, votre dossier : 7522-15-01-00009-11 », datée du 25 juillet 2012, signée par Pierre

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Gionet, Régie intermunicipale Argenteuil Deux-Montagnes,
3 annexes ;

- Lettre au ministère du Développement durable, de l'Environnement et des Parcs, « Demande d'information datée du 1^{er} août 2012 transmises par courriel, Demande de certificat d'autorisation de la Régie intermunicipale Argenteuil Deux-Montagnes pour l'aménagement et l'exploitation de la phase III du lieu d'enfouissement technique à Lachute, votre dossier : 7522-15-01-00009-11 », datée du 7 août 2012, signée par Pierre Gionet, Régie intermunicipale Argenteuil Deux-Montagnes. Accompagnée d'une lettre de RCI Environnement inc. datée du 6 août 2012 signée par Jean Beaudoin et des plans ;
- Courriel au ministère du Développement durable, de l'Environnement et des Parcs, objet « Faire suivre : émission du C.A. Phase III Lachute », transmis le 22 août 2012 par Audette Brassard, assistante pour Cardinal Avocat inc.;
- Plan # LESEC-2012-BG-07, révision 1, intitulé « Agencement général date d'installation des collecteurs (coupe) », daté du 12 mai 2012, signé et scellée par Claude Carrière, ing., Kruger Énergie, Lidya Énergie.
- Plan # 15555-C-D000, révision 0, intitulé « Page titre », daté de juillet 2012, préparé par BPR ;
- Plan # 15555-C-D006, révision 0, intitulé « Coupes et détails », daté de juillet 2012, signé et scellé le 17 juillet 2012 par Adrian-Valentin Gojan, ing., BPR ;
- Plan # 15555-C-D001, révision 1, intitulé « Plan d'ensemble conditions existantes et localisation des travaux », daté de juillet 2012, signé et scellé le 2 août 2012 par Adrian-Valentin Gojan, ing., BPR ;
- Plan # 15555-C-D002, révision 1, intitulé « Vue en plan travaux proposés », daté de juillet 2012, signé et scellé le 2 août 2012 par Adrian-Valentin Gojan, ing., BPR ;
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- Plan # 15555-C-D004, révision 2, intitulé « Vue en plan recouvrement final », daté de juillet 2012, signé et scellé le 2 août 2012 par Adrian-Valentin Gojan, ing., BPR ;

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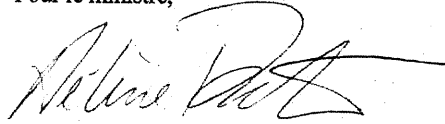
- Plan # 15555-C-D005, révision 2, intitulé « Vue en profil », daté de juillet 2012, signé et scellé le 28 août 2012 par Adrian-Valentin Gojan, ing., BPR ;

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Le projet devra être réalisé et exploité conformément à ces documents.

En outre, ce certificat d'autorisation ne dispense pas le titulaire d'obtenir toute autre autorisation requise par toute loi ou tout règlement le cas échéant.

Pour le ministre,



HP/RM

Hélène Proteau
Directrice régionale de l'analyse
et de l'expertise de Montréal, de Laval,
de Lanaudière et des Laurentides



Sainte-Thérèse, le 31 août 2012

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- Plan # 15555-C-D006, révision 0, intitulé « Coupes et détails », daté de juillet 2012, signé et scellé le 17 juillet 2012 par Adrian-Valentin Gojan, ing., BPR ;
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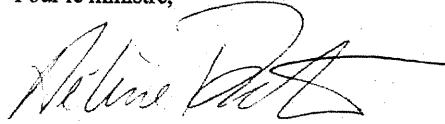
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Le projet devra être réalisé et exploité conformément à ces documents.

En outre, ce certificat d'autorisation ne dispense pas le titulaire d'obtenir toute autre autorisation requise par toute loi ou tout règlement le cas échéant.

Pour le ministre,



HP/RM

Hélène Proteau
Directrice régionale de l'analyse
et de l'expertise de Montréal, de Laval,
de Lanaudière et des Laurentides

Trois-Rivières, le 25 juin 2008

CERTIFICAT D'AUTORISATION

Horizon Environnement inc.
155, boulevard Labelle, bureau 101
Rosemère (Québec) J7A 2H2

N/Réf. : 7610-04-01-01788-23
400 499 974

Objet : Biotraitement de sols contaminés

Mesdames,
Messieurs,

À la suite de votre demande de certificat d'autorisation datée du 17 octobre 2007, reçue le 18 octobre 2007 et complétée le 13 juin 2008, j'autorise, conformément à l'article 22 de la Loi sur la qualité de l'environnement (LRQ, chapitre Q-2), le titulaire mentionné ci-dessus à réaliser le projet décrit ci-dessous :

Modification à l'exploitation d'un système de biotraitement aérobique de sols contaminés par des hydrocarbures pétroliers. Le projet sera réalisé au 120, route 155 à Grandes-Piles, sur une partie du lot 25-7 du rang 2 Est de la rivière Saint-Maurice, dans le canton Radnor, faisant partie de la municipalité régionale de comté de Mékinac.

Les documents suivants font partie intégrante du présent certificat d'autorisation :

- « Demande de certificat d'autorisation concernant l'exploitation d'un système de biotraitement de sols contaminés », signée par M. Guy Fortin, géologue, octobre 2007, 11 pages et 2 annexes, accompagnant une lettre adressée au ministère du Développement durable, de l'Environnement et des Parcs, datée du 17 octobre 2007 et signée par M. Guy Fortin, géologue, relative à la présentation de la demande de certificat d'autorisation;
- Lettre adressée au ministère du Développement durable, de l'Environnement et des Parcs, datée du 7 mai 2008 et signée par M. Guy Fortin, géologue, ayant pour objet un ajout à la demande de certificat d'autorisation;
- Lettre adressée au ministère du Développement durable, de l'Environnement et des Parcs, datée du 9 juin 2008 et signée par M. Guy Fortin, géologue, ayant pour objet un complément d'information à la demande de certificat d'autorisation, 2 plans joints.

CERTIFICAT D'AUTORISATION

-2-

N/Réf. : 7610-04-01-01788-23
400 499 974

Le 25 juin 2008

En cas de divergence entre l'information fournie, la plus récente prévaudra.

Le projet devra être réalisé et exploité conformément à ces documents.

En outre, ce certificat d'autorisation ne dispense pas le titulaire d'obtenir toute autre autorisation requise par toute loi ou tout règlement le cas échéant.

Pour la ministre,



LSTM/GG/cd

Luc St-Martin, ing.
Directeur régional de l'analyse et de l'expertise
de la Mauricie et du Centre-du-Québec



Gouvernement du Québec
Ministère de l'Environnement
et de la Faune
Direction régionale
de la Mauricie – Bois-Francs

POSTE CERTIFIÉE

Trois-Rivières, le 22 août 1995

CERTIFICAT D'AUTORISATION
(article 22)

Horizon Environnement
Division de 9014-7323 Québec inc.
123, boulevard Labelle, suite 202
Rosemère (Québec) J7A 2G9

N/Réf. : 7610-04-01-01788.01
1116248

Objet : Établissement d'un lieu d'enfouissement à sécurité
accrue et d'un centre de traitement de sols contaminés

Mesdames,
Messieurs,

À la suite de votre demande de certificat d'autorisation datée du 18 mai 1995, reçue le 23 mai 1995 et complétée le 10 août 1995, j'autorise, conformément à l'article 22 de la Loi sur la qualité de l'environnement (L.R.Q., chapitre Q-2), le titulaire ci-dessus mentionné à réaliser le projet décrit ci-dessous :

Établissement et exploitation d'un lieu d'enfouissement à sécurité accrue et d'un système de traitement de sols contaminés sur une partie du lot 25-7, rang II de la rivière Saint-Maurice, canton de Radnor, municipalité du Village de Grandes-Piles, faisant partie de la municipalité régionale de comté de Mékinac.

...



CERTIFICAT D'AUTORISATION
(article 22)

-2-

N/Réf. : 7610-04-01-01788.01
1116248

Le 22 août 1995

La demande de certificat d'autorisation et les documents suivants font partie intégrante du présent certificat d'autorisation :

- Lettre de M. Roméo Ciubotariu, ing., 8 août 1995, à M. Guy Fortin, concernant la gestion des huiles usées et des poussières du dépoussiéreur;
- Lettre de M. Roméo Ciubotariu, ing., 1^{er} août 1995 à M. Guy Fortin, concernant le suivi environnemental, le suivi de la performance du système de traitement par biofiltre et la tenue du registre;
- Lettre de M. Roméo Ciubotariu, ing., 28 juillet à M. Guy Fortin, demandant l'obtention d'une autorisation en vertu de l'article 48 de la loi;
- Lettre de M. Roméo Ciubotariu, ing., 25 juillet 1995, à M. Guy Fortin, concernant des spécifications techniques et les normes de rejet des eaux emmagasinées;
- Plan N° 53611000, rév. 1, Localisation générale du site, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Plan N° 53612000, rév. 1, État actuel du site, vue en plan, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Plan N° 53613000, rév. 1, Aménagement du site, vue en plan, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Plan N° 53614000, rév. 1, Lieu de disposition de sols contaminés # 1, excavation, vue en plan et coupes, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Plan N° 53615000, rév. 1, Lieu de disposition de sols contaminés # 1, fermeture, vue en plan et coupes, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Plan N° 53616000, rév. 1, Lieu de disposition de sols contaminés # 1, détails de construction, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Plan N° 53617000, rév. 1, Lieu de disposition de sols contaminés # 1, détails de fermeture, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;

...



CERTIFICAT D'AUTORISATION
(article 22)

-3-

N/Réf. : 7610-04-01-01788.01
1116248

Le 22 août 1995

- ✓ - Plan N° 53618000, rév. 1, Lieu de disposition des sols contaminés # 5, détails de construction et de fermeture, vue en plan et coupes, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- ✓ - Plan N° 53619000, rév. 1, Poste de traitement de sols contaminés, aire d'entreposage des sols contaminés et bassins, vue en plan et coupes, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- ✓ - Plan N° 53619500, rév. 1, Fermeture du site, suivi environnemental, vue en plan, Tecsalt inc., Horizon Environnement, signé et scellé par MM. Mario Sirois, ing. et Roméo Ciubotariu, ing., 16 mai 1995;
- Rapport 5361 - Lieu de traitement et de disposition des sols contaminés à Grandes-Piles, Québec - Demande de certificat d'autorisation, Tecsalt inc., Horizon Environnement, signé par M. Roméo Ciubotariu, ing., directeur de projet, 18 mai 1995;
- Rapport 5361 - Lieu de traitement et de disposition des sols contaminés à Grandes-Piles, Québec - Étude hydrogéologique, Tecsalt inc., Horizon Environnement, signé par M. Roméo Ciubotariu, ing., directeur de projet, 28 mars 1995.

En cas de divergence entre ces documents, l'information contenue au document le plus récent prévaudra.

Le projet devra être réalisé et exploité conformément à cette demande de certificat d'autorisation et à ces documents.

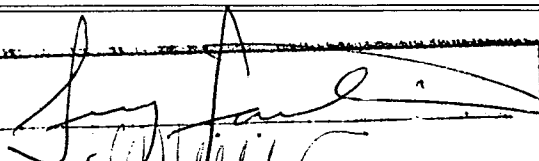
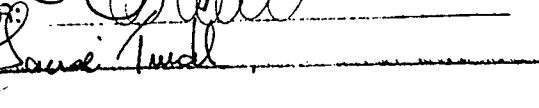
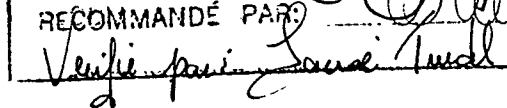
En outre, ce certificat d'autorisation ne dispense pas le titulaire d'obtenir toute autre autorisation requise par toute loi ou tout règlement le cas échéant.

Pour le ministre de l'Environnement
et de la Faune,



PHILIPPE BUSSIÈRES
Directeur régional - Environnement

PB/GF/jm

ANALYSÉ PAR:	
RECOMMANDÉ PAR:	
	



**Ministère du
Développement durable,
de l'Environnement
et de la Lutte contre les
changements climatiques
Québec**

Longueuil, September 8, 2014

**PERMIT
Environment Quality Act
(CQLR, chapter Q-2, section 70.11)**

Solva-Rec Environnement inc.
795 Lucien-Beaudin St.
Saint-Jean-sur-Richelieu, QC J2X 5M3

Our ref.: 7610-16-01-1060901
401172445

Subject: Operation of a dangerous residual material management centre

Dear Madams,
Dear Sirs,

Your permit renewal application dated May 24, 2014 was received on June 3, 2014 and fully processed by September 5, 2014. In response to this application, I hereby issue to the above-mentioned holder, in accordance with section 70.11 of the Environment Quality Act (CQLR, chapter Q-2), the permit covering the activities described below:

- Storage of a maximum of 2,713,425 kg of dangerous residual materials belonging to the categories stipulated in Schedule 4 of the Hazardous Materials Regulation, with the exception of explosive or radioactive material;
- Neutralization of isocyanates;
- Neutralization of acids and bases;
- Crushing of fluorescent tubes and dangerous residual material containers;
- Blow-down of aerosol containers;
- Decontamination of containers and parts;
- Consolidation of semi-liquid dangerous residual material.

These activities are carried out on the following site:

Lot 4,043,276 of the cadastre of Quebec (formerly lots 239 and 241 of the cadastre of the parish of Saint-Athanase), in the regional county municipality of Haut-Richelieu, at street address 795 Lucien-Beaudin in the municipality of Saint-Jean-sur-Richelieu.

[I certify the above to be an accurate translation of the French version received via email. Translated by Sébastien St-François, C.Tr., member (no. 4560) of the Ordre des traducteurs, terminologues et interprètes agréés du Québec (OTTIAQ), 2014-09-09.]



The following documents form an integral part of the present operating permit:

- Letter and documents to the Ministère du Développement Durable, de l'Environnement et de la Lutte Contre les Changements Climatiques, dated May 24, 2014 and signed by Hugues Lamer, concerning the permit renewal application;
- Email sent on September 3, 2014 to the Ministère du Développement Durable, de l'Environnement et de la Lutte Contre les Changements Climatiques by Éric Benoît, concerning additional information on outdoor storage activities and technical information;
- Letter and documents sent on September 5, 2014 to the Ministère du Développement Durable, de l'Environnement et de la Lutte Contre les Changements Climatiques by Hugues Lamer, concerning technical information and commitments regarding the VOC monitor, registries and outdoor storage of DRM on the site.

In case of discrepancies between these documents, the information contained in the most recent document will prevail.

The project must be carried out in accordance with these documents.

This permit is valid for a period of five years from September 8, 2014 in accordance with section 70.14 of the Act.

Furthermore, this permit does not exempt you from your obligation to obtain any other statutory or regulatory authorization, as required.

On behalf of the Minister,

PP/AM/am

Pierre Paquin
Regional director
Analysis and expertise
Estrie and Montérégie



[I certify the above to be an accurate translation of the French version received via email. Translated by Sébastien St-François, C.Tr., member (no. 4560) of the Ordre des traducteurs, terminologues et interprètes agréés du Québec (OTTIAQ), 2014-09-09.]

APPENDIX H

PHASE II ENVIRONMENTAL SITE ASSESSMENT



ENVIRONMENTAL CHARACTERIZATION OF SOILS

ANMAR MAINTENANCE SHOP – MILNE INLET

Privileged and confidential document

Mr. Guy Laliberté
Construction Manager
Baffinland Iron Mines Corporation

and

Mr. Jim Millard
Environmental Manager
Baffinland Iron Mines Corporation

2275 Upper Middle Road East, Suite 300
Oakville, ON, Canada
L6H 0C3

FINAL REPORT

July 7, 2015

O/Ref.: QE15-113-1



ENVIRONMENTAL CHARACTERIZATION OF SOILS

ANMAR MAINTENANCE SHOP – MILNE INLET

Privileged and confidential document presented to

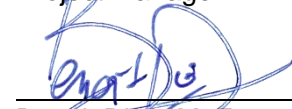
BAFFINLAND IRON MINES CORPORATION

Prepared and verified by:



Pascal Prud'homme, B.Sc., M.Env.
Project Manager – Environment

Verified and approved by:



Benoit Dion, M. Env.
Project Director – Northern Projects



FINAL REPORT

July 7, 2015

O/Ref.: QE15-113-1

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APPENDIX D	Tables
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LIST OF ABBREVIATIONS

BTEX:	Benzene, Toluene, Ethylbenzene and Xylenes
CCME:	Canadian Council of Ministers of the Environment
<i>Characterization Guide:</i>	<i>Site characterization guide</i> , ministère de l'Environnement du Québec, 2003
ESA:	Environmental Site Assessment
<i>Guide d'échantillonnage:</i>	<i>Guide d'échantillonnage à des fins d'analyses environnementales</i> , ministère du Développement durable, de l'Environnement et des Parcs du Québec, 2008
	<i>Cahier 1 : Généralités</i> , 2008
	<i>Cahier 3 : Échantillonnage des eaux souterraines</i> , 2008
	<i>Cahier 5 : Échantillonnage des eaux souterraines</i> , June 2011, revised February 23rd 2012
	<i>Cahier 8 : Échantillonnage des matières dangereuses</i> , 2008
GNUDE	<i>Government of Nunavut Department of Environment</i>
<i>Guideline:</i>	Environmental Guideline for Contaminated Site Remediation (1999, revised in 2009), Government of Nunavut Department of Environment
LNAPL:	Light non-aqueous phase liquids
MDDELCC:	<i>Ministère du Développement durable, de l'Environnement et Lutte contre les changements climatiques</i>
NAPL:	Non-aqueous phase liquids
PAH:	Polycyclic aromatic hydrocarbons
PH:	Petroleum hydrocarbons
PH F1:	Petroleum hydrocarbon Fraction 1 (C ₆ to C ₁₀)
PH F2:	Petroleum hydrocarbon Fraction 2 (> C ₁₀ to C ₁₆)
PH F3:	Petroleum hydrocarbon Fraction 3 (> C ₁₆ to C ₃₄)
PH F4:	Petroleum hydrocarbon Fraction 4 (> C ₃₄ and +)
QA/QC:	Quality assurance and quality control
RDP:	Relative percentage difference
VOC:	Volatile organic compounds

1. INTRODUCTION

1.1 Contract

Following our proposal dated May 26, 2015, Qikiqtaaluk Environmental Inc. (QE) was retained on the same day, by a representative of Baffinland Iron Mines Corporation (BIM), Mr. Arvi Narayanan, to proceed with a soil environmental characterization in the areas of environmental concern found on the Anmar Maintenance Shop (Anmar Shop) area in Milne Inlet. The areas of environmental concern were identified by QE prior to soil sampling. Environmental concerns were mainly composed of petroleum-made fluid spills, such as hydraulic oil, brake fluid or used oil and of burned material spots (sometimes with small piles of ash).

The site being studied, hereafter referred to as the “Site”, is not used since a fire, which occurred this winter (2015), partially or totally burned almost everything that was stored or used for the maintenance activities.

The present document provides a brief description of the Site and its surroundings, the methodology used to conduct the current soil environmental characterization, as well as the findings, conclusions and recommendations of the environmental characterization.

As mentioned above, unless otherwise indicated, the term “Site” refers to the site under study.

1.2 Objectives

The objectives of the Environmental characterization of soils were to:

- Delineate the presumed contaminated soils by the digging of 15 test pits and the collection of 1 to 2 soil or waste material (ash) samples per test pit. Some samples were taken at the ground surface at a depth of 0 to 5 cm or until the permafrost, at a depth of approximately 20 cm;
- Shipping and analysis of the samples for 1 or more of the following parameters: metals, TPH-F1 to F4, BTEX and PAHs on an accelerated basis (3 business days following deposit at the laboratory) for soil samples and parameters for leachable materials of Section 3 of the Quebec Hazardous Materials Regulation for the sampled ash;
- Reporting and Interpretation of results.

1.3 General Conditions and Limitations of the Study

The fieldwork was planned and executed based on the information available. The information included in this report is subject to the general conditions and limitations of the study, as described in Appendix A.

2. SITE LOCATION

The Site, described as a Maintenance Shop at BIM's Milne Inlet installation, has a total surface area of approximately 1,314 m².

The approximate geographical coordinates (central point of the property) in degrees, minutes and seconds are:

- 71°53'10" North;
- 80°54'03" West.

The area of the Site is currently used as an industrial port complex for the shipping of iron ore.

3. WORK PERFORMED AND METHODOLOGY

3.1 Summary of Work Performed

There are currently no guidelines for environmental sampling in Nunavut. Thus, all fieldwork was conducted in accordance with the applicable guidelines established by the *MDDELCC* and the client's requirements.

In order to achieve the objectives of the current study, the work performed included the completion of the following:

- Staking of sampling locations (test pits) on the Site;
- Excavation of 15 test pits on the property for soil sampling;
- Description of the stratigraphy encountered at all sampling locations;
- Continuous soil sampling in all test pits;
- Chemical analysis of the soil samples in accordance with the established analytical program;
- Measurements of sample locations by QE;
- Preparation of a technical report detailing the findings of the soil environmental characterization.

Photographs illustrating some of the fieldwork performed on the Site are presented in report format in Appendix C of the present report.

3.2 Sampling Strategy

Sampling locations were selected based on observations made onsite during the preliminary visit conducted by Mr. Mario Mercier of QE. The sampling strategy focussed on areas where there was evidence of spills or ash piles. However, the sampling covered the entire maintenance shop surface, even if the ground was still frozen near Seacans inside the former shop.

A total of 15 locations were chosen to conduct test pits on the Site. Sampling locations were chosen by targeting areas where environmental concerns were identified and then to complete an approximate grid consisting of squares measuring approximately 10 m by 10 m in areas where there was no water or frozen soils. The location of the test pit was set at the centre of each square. All of the test pits were drilled, sampled and held at the lab to be potentially analyzed for metals, TPH-F1 to F4, BTEX and PAHs.

3.2.1 Timeline of Work Performed

The timeline of the different environmental characterization steps carried out is summarized below:

- May 12, 2015: preliminary site visit by Mr. Mario Mercier;
- May 29, 2015: environmental assessment of the maintenance shop to highlight areas of environmental concern by Mr. Pascal Prud'homme;
- May 30, 2015: drilling of the test pits in each targeted area where an environmental concern was identified, or to delineate the extension of the contamination by Mr. Pascal Prud'homme.

3.2.2 Work Preparation

Before beginning fieldwork, preparation included:

- Logistical coordination between the QE Project Manager and the client representatives onsite;
- Preparation of field equipment and materials.

3.3 Soil Characterization

3.3.1 Test Pits

The environmental characterization of soils fieldwork included the excavation of 15 test pits, as shown in Figure 1 of Appendix B.

All test pits were excavated using a Komatsu PC09 Excavator operated by a BIM employee. Test pits were excavated to a depth of approximately 20 cm. Surface soil samples were taken using a shovel, because of the low depth of impacted surface soils (5 cm).

The test pits were backfilled with the excavated materials, with care taken to respect the stratigraphy encountered. The backfilled materials were loosely compacted using the bucket of the excavator.

3.3.2 Soil Sampling

Soil sampling was conducted in accordance with the procedures described in the *Guide d'échantillonnage, Cahier 5*. Soils were described according to unified classification ASTM D22487 and their organoleptic characteristics (visual and olfactory) were recorded.

Where there were visible signs of spill on the ground at the sampling location, a soil sample was collected between 0 and 5 cm and a second sample was collected between 5 and 20 cm to confirm the depth of the contamination.

Throughout the fieldwork, a total of 20 soil samples were collected.

3.3.3 Water Sampling

No surface water was sampled because contaminated snow was not completely melted. Thus, a sample would not have been representative of the quality of the surface water contained in sandy berms surrounding the Anmar Shop.

Moreover, there were 2 small ponds containing mainly free phase liquids and 2 other very large ponds. In both cases, surface water would not have been representative of its environmental quality.

3.4 Cleaning of Sampling and Measuring Instruments

Since new disposable equipment was used for each sample, no cleaning of equipment was required.

3.5 Sample Containers and Sample Conservation

All samples collected were placed in containers (jars and bottles) provided by an analytical laboratory. All samples were labelled and stored in a cooler with ice bags provided by BIM in order to maintain them at a temperature of approximately 4°C until delivery at the laboratory. Samples were brought to QE's Montreal facility for shipping to Exova Laboratory in Ottawa.

Samples not selected for chemical analysis are stored by the laboratory for the period of this contract. After this period, the samples will be destroyed by the laboratory, unless otherwise instructed by an authorized representative of the client.

Finally, container types and conservation and transport methods for samples were selected in accordance with the guidelines presented in the *Guide d'échantillonnage, Cahiers 1, 3, 5 and 8*.

3.6 Surveying

No survey was conducted as part of this contract. However, all test pits were measured using a 30 m measuring tape. Thus, all sampling stations were located relatively close (?) to the Anmar Shop. All measurements were conducted by a QE technician.

3.8 Surface Water

Surface water issued from snowmelt was observed in the area of the maintenance shop where the work was to be carried out. As described in Section 3.3.3 of this report, no surface water was sampled. However, berms were built with sandy to gravelly soils to contain surface water and free phase liquids issued from snowmelt around the maintenance shop.

3.9 Laboratory Analyses

3.9.1 Analytical Program

The analytical program of the Phase III ESA is based on the environmental issues highlighted during the environmental assessment visit performed on May 29, 2015 before soil sampling.

The choice of analytical parameters for the samples sent for laboratory analysis was established based on the nature of organic and inorganic contaminants suspected following the environmental assessment visit and the observations made during the characterization work.

Soil samples collected during the characterization work were delivered to the analytical laboratory as promptly as possible. The analytical laboratory chosen was accredited by *The Canadian Association for Laboratory Accreditation Inc.* for all the analyses performed. Certificates of accreditation are available upon request. Furthermore, the analytical reports received are verified and signed by a member of the Association of the Chemical Profession of Ontario.

The samples selected were analyzed using the methods presented in Table 1. The detection limits associated with each parameter analyzed is also presented in Table 1.

TABLE 1: Analytical Program and Detection Methods

Matrix	Analysis	Method	Detection Limit	
Soil	TPH	CCME	µg/g	Variable
	PAH	P 8270	µg/g	Variable
	BTEX	V 8260B	µg/g	Variable
	Metals (Arsenic, Barium, Cadmium, Chromium, Cobalt, Copper, Manganese, Mercury, Molybdenum, Nickel, Lead, Selenium, Silver, Tin, Zinc)	EPA 200.8	µg/g	Variable
Leachate	Nitrates and nitrites	MA300-IONS 1.3	mg/L	0.20
	Nitrites	MA300-IONS 1.3	mg/L	0.20
	Total fluoride	SM4500-F	mg/L	0.1
	Metals (Arsenic, Barium, Boron, Cadmium, Chromium, Lead, Mercury, Selenium and Uranium)	MA200-Met1.2	µg/g	Variable

From a total of 19 soil and 1 residual materials (ash) samples collected, 8 soil and 1 residual materials samples were selected for laboratory analysis. Table 2 presents the number of analyses performed for each parameter on soil samples.

TABLE 2: Parameters Analyzed per Matrix (Number of Analyses)

Parameters	TPH	PAH	Metals	BTEX
Soil	7	5	5	7

3.9.2 QA/QC Program

All projects completed by QE include a QA/QC program in order to verify the reliability, precision and accuracy of the fieldwork analytical results.

3.9.2.1 Onsite

Several precautions were taken during the course of the fieldwork in order to eliminate the risk of contamination from equipment and sampling instruments and to ensure effective and representative sampling. The precautions taken, particularly during collection, transport, identification and conservation of samples included:

- Application of standardized work procedures through ongoing training of field technicians on the various standardized methods of sample collection and management;
- Constant supervision of employees by management;

- Use of disposable nitrile gloves for each sample collected;
- Adequate cleaning of equipment, containers and sampling instruments before collecting each sample;
- Careful use and protection of the appropriate sampling containers and measuring instruments during sample collection, transport and conservation;
- Precise identification and labelling of all samples shipped to the laboratory accompanied by a completed and signed chain of custody form;
- Shipping of samples to the laboratory as promptly as possible, where possible;
- Conservation and storage of samples according to the standardized methods recommended by the *MDDELCC*.

No field duplicates and blanks were used during soil and groundwater sampling because no significant external sources of contamination (dust, atmospheric emissions, VOCs, etc.) were identified on the Site in the vicinity of the sampling locations. Finally, no trip blanks were used as all samples were conserved in hermetically sealed containers during their transport between the Site and the laboratory.

3.9.2.2 *At the Laboratory*

Exova applies its own QA/QC program, in accordance with the requirements of The Canadian Association for Laboratory Accreditation Inc., in order to provide analytical results of the highest possible quality and reliability. This program includes, among others, the following elements:

- Laboratory blank;
- Laboratory duplicate;
- Control/reference samples;
- Certified reference materials;
- Sample spiking;
- Surrogates (organics).

A summary of the laboratory's internal QA/QC program is available upon request.

4. RESULTS

4.1 Underground Utility Clearance

As the maintenance shop was decommissioned during the fieldwork, and because of the presence of permafrost, no buried utilities were present onsite.

4.2 Chemical Analysis

The results of the laboratory chemical analysis of soil and water samples are presented in Tables I and II of Appendix D as well as in the analytical certificates attached in Appendix E.

4.2.1 Soils

4.2.1.1 *Applicable Soil Quality Criteria*

The analytical results were compared to the GNUDE's Environmental Guideline for Contaminated Site Remediation quality criteria, for industrial land use.

4.2.1.2 *Analytical Results*

The results of almost all of the soil samples were below Government of Nunavut Criteria with the exception of TP-7-S, which exceeded the guideline value for PH F 3 ($>C_{16}$ to C_{34}) and PH F 4 ($>C_{34}$).

The analytical results are presented in Table I of Appendix D and the overall results of each sampling location are presented in Figure 3 of Appendix B.

4.3 QA/QC Program

4.3.1 Onsite

No field duplicate soil samples were collected.

4.3.2 Laboratory

The results of Exova's internal control measures are also considered to be acceptable and fall within The Canadian Association for Laboratory Accreditation Inc. suggested RDP for all analyses performed (laboratory blanks, laboratory duplicates, control/reference samples, certified reference materials, sample spiking and surrogates (organics)).

The results are presented in the laboratory's analytical certificates presented in Appendix E.

5. DATA INTERPRETATION

The analytical results, along with the information gathered on-site from the 15 test pits, indicate that the soils below the surface (depth 0 to 5 cm) in the areas sampled are not impacted by contaminants over the guideline levels. Only surface soils (depth 0 to 5 cm) with evidence of contamination surrounding the maintenance shop are contaminated over the guideline levels for PH F3 and PH F4.

6. CONCLUSION

QE was retained to perform an ESA in order to identify areas of environmental concern and to sample the soils to define their quality following a fire that occurred at the Anmar Maintenance Shop in BIM's Milne Inlet Port Complex.

The soil characterization work was carried out on May 30, 2015. The work conducted included the excavation of 15 test pits to test soil quality.

A total of 19 soil samples and 1 residual materials sample (ash) were collected during the course of the fieldwork. Of the total soil and residual material samples collected, 9 were submitted for chemical analysis by the laboratory.

The results of the characterization study revealed the following with regards to the environmental quality of the Site's soils and residual material (ash).

6.1 Environmental Quality of Soils

The analytical results of the samples submitted to the laboratory showed that surface soils (depth 0 to 5 cm) in spill area TP-7 are impacted by PH F3 and PH F4 at concentrations above the Government of Nunavut's industrial criteria. This contamination is associated with the oil that leaked out of the tote tanks or from the heavy machinery (Genie lifts) that were burned during the shop fire. The volume of impacted soils above the industrial criteria inside and outside the maintenance shop is estimated at 3 to 5 m³. As shown in Figure 2, areas TP-5, TP-6, TP-7, TP-8, TP-9, TP-10, TP-13 and TP-15 showed evidence of contamination on the soil surface.

All other soil samples selected from the test pits, collected under oil spots, at a depth between 5 and 20 cm, showed concentrations below the industrial criteria for metals, PAHs, BTEX and TPH.

6.2 Environmental Quality of Residual Materials

The analytical results of the residual materials sample (ash) collected from test pit TP11 showed that the sample does not exceed criteria for leachate, thus respecting the *Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities* (GNUDE, 2011). As such, ash piles formed by burning wood are not considered as hazardous waste. However, other ash piles formed by burning hazardous materials are presumed to be hazardous waste, as ashes were found where there batteries were stored.

6.3 Presence of Liquids

LNAPLs were observed on surface water or directly on the ground in the areas of test pits TP-7, TP-9 and near roll-off containers located north of the Anmar Shop. Surface water without LNAPLs' visible sheen was observed in 3 areas: near TP9 and TP-10 to the northwest of the shop, near TP-1 and TP-2 to the northeast of the shop and near TP-5 and TP-6 beside the southeast corner of the building. All surface water accumulated in those areas was contained with 3-foot high berms. The environmental quality of surface water was not verified, as snow and ice were not completely melted and potentially contained LNAPLs.

6.4 Recommendations

Considering the level of surface contamination of impacted soils, the type of PH contamination (Fraction 3 and Fraction 4) and the extent of impacted areas with oil and paint stains (see Figure 2), QE recommends that surface soils be excavated and packaged in Quatrex-type bags for off-site disposal. These soils could be stored and potentially treated in BIM's landfarm, but the efficiency of a landfarm is relatively low with Fraction 3 and Fraction 4 PH contamination with concentrations exceeding 10,000 ppm.

Soil samples should be collected following the surface clean-up because ice, snow and surface soils have melted since QE's Site visit, and NAPLs could have infiltrated surface soils.

At the time of its visit, QE could not sample some areas of the site:

- Soils under surface water;
- Soils under Seacans.

Impacted soils in those areas, representing an approximately volume of 5 m³, should be excavated, packaged in Quatrex-type bags and disposed of offsite. Soil samples should be collected following the clean-up of these areas.

Even if a typical sample of ash has been collected from test pit TP11, and is not considered as hazardous waste following the leachate analytical results, because of their light weight and their potential production of dust, the ash should be put in 45 gallon open-top drums and disposed of off-site.

Should any oily water found onsite during the remediation work, this water must be pumped, then treated onsite or disposed of offsite.

APPENDIX A

GENERAL CONDITIONS AND LIMITATIONS OF THE STUDY

GENERAL CONDITIONS AND LIMITATIONS OF THE STUDY (PHASES II AND III AND REHABILITATION)

This report has been prepared for the exclusive use of the person to whom it is addressed. Possession of this report does not confer the right to publish, use or rely on the information, conclusions or recommendations contained in the report to anyone other than the person to whom it is addressed. The contents of the report constitute an assessment of the conditions of certain areas of the subject property and cannot be applied to any other property or location. This report must be as a whole, as sections taken individually and out of context may be erroneously interpreted. In addition, the addressee of the report may only rely on the text of the final version; any other text, opinion, draft or preliminary version provided by QE cannot be used.

The results, comments, interpretations, conclusions and recommendations contained in this report are valid only at the time when the information on which they are based was collected. They have been formulated, in accordance with the scope of the review and the specific limitations of the study, as well as in the light of our knowledge of the current and/or planned use(s) of the site, its general location and the applicable environmental laws, regulations standards and criteria.

This report is based on the verbal and/or written information obtained during the assessment, the accuracy of which has not been verified. QE has relied upon the written information provided and information provided by persons interviewed during the execution of this mandate as has assumed this information to be valid, accurate and provided in good faith. This information is considered to have been obtained in accordance with known and accepted rules of conduct and professional practices.

QE cannot be held responsible for any costs, claims, damages or harm which is a direct or indirect consequence of a false, incorrect or deceitful declaration or information provided, or the non-disclosure, dissimulation or concealment of pertinent information by the persons.

QE cannot be held responsible for damages resulting from unforeseeable events or changes in the conditions on the site after the date that information has been collected. In addition, QE cannot be held responsible for damages resulting from any modifications to applicable environmental laws, regulations, standards or criteria after delivery of this report, from the use of this report by a third party and/or for purposes other than those for which it has been written, or for any real or perceived loss of property value, or failure of a transaction because of the factual information, interpretations, conclusions and recommendations contained in this.

The report does not guarantee that the site is free of contaminants or hazardous or potentially hazardous material or conditions or that latent or undiscovered conditions will not become evident in the future.

Unless otherwise indicated in the report, drilling, taking measurements, sampling or detailed listing of the wastes, products, soil, water or other material on the study site or its immediate surroundings were not part of the present assessment.

All opinions expressed and references made to environmental laws, regulations, standards or criteria are provided for the client's information only and should not, under any circumstances, be considered as legal advice or a legal opinion.

➤ ***Soil and Bedrock Conditions***

The descriptions of soils and, in some cases, bedrock, are presented herein with the intention to provide a general overview of subsurface conditions. This information must not, under any circumstances, be used as geotechnical data on which to base construction design or development, unless that intention has been specifically indicated in the text of the report.

The descriptions and characteristics of the soils and bedrock have been developed from data obtained during drilling and/or excavation at a given time period. The points of contact between the different geological units identified must be considered approximate, given the limits of the equipment and the method(s) used, the frequency of sampling, and the intrinsic variability of the units encountered.

The data from drilling and/or excavation has been extrapolated between sampling points and may therefore actually differ in the unverified areas.

➤ ***Groundwater and Surface Water Conditions***

The precision and presentation of groundwater and surface water conditions must be interpreted as a function of the type of instrumentation used, the survey period and the number of observations recorded. Conditions may vary as a result of seasonal effects, precipitation levels, surface water levels and tidal patterns, as well as following work or other activities on the site or in surrounding areas.

➤ ***Level of Contamination***

The selection of the analytical parameters, the number and location of sampling stations, the sampling frequency and selection the samples to be analysed in the laboratory depends on the requirements of regulatory authorities at the time of the study, the scope and extent of the mandate, the available budget and the environmental conditions in and around the subject site. Note, however, that virtually no scope of work no matter how exhaustive can identify all contaminants or conditions above and below ground. Also, the fact that a substance has not been analysed for does not exclude the possibility that it is present on the site.

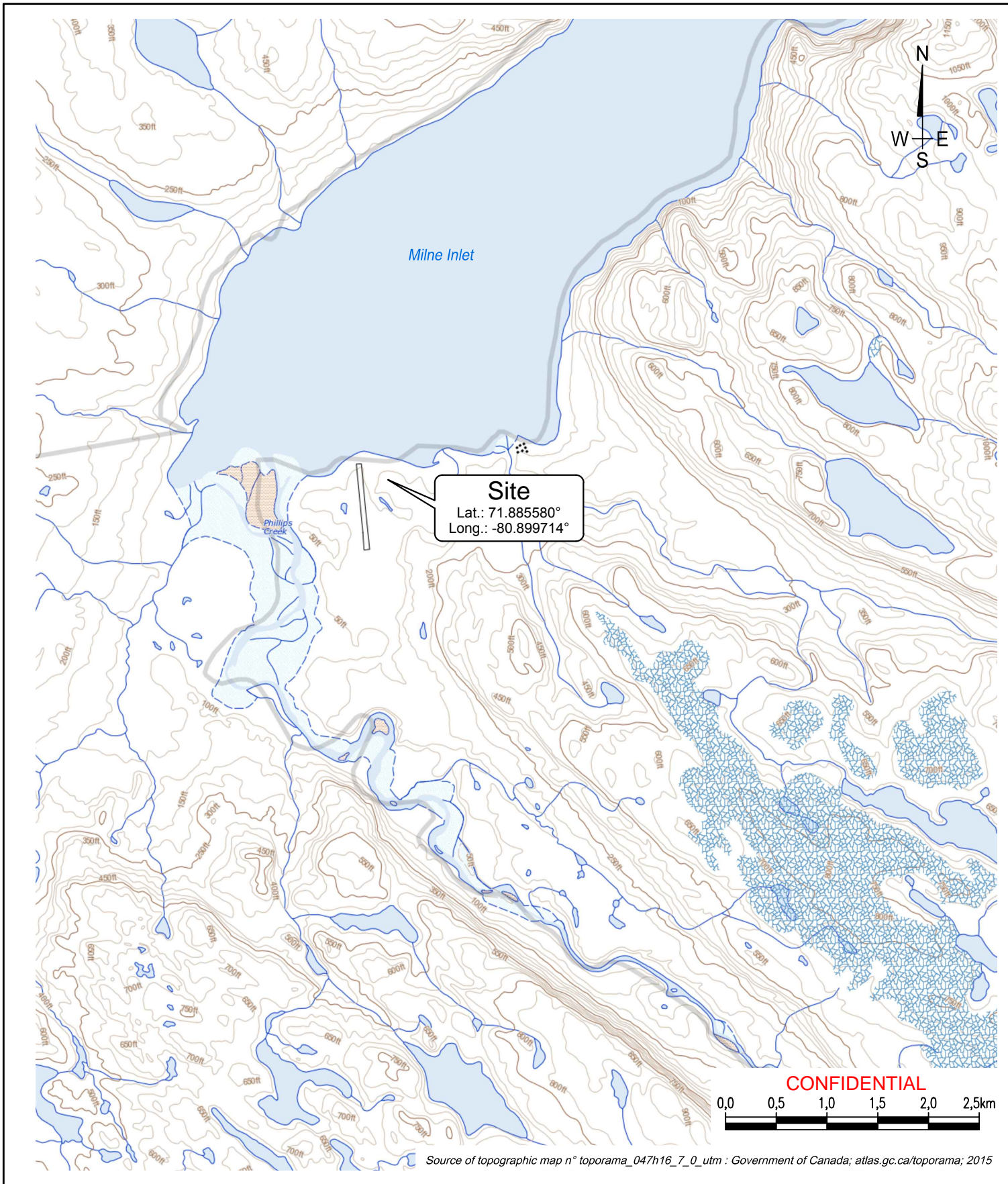
The concentrations of chemical compounds presented herein are determined based on the results of chemical analyses performed by accredited laboratories and correspond to the concentrations detected at the location of the sampling. QE does not warrant the accuracy of the results provided by the accredited laboratory. Contamination levels are established by comparing the concentrations obtained to the standards and/or criteria in force at the time the sampling was done. The nature and degree of the contamination identified may, however, vary between sampling stations as well as being a function of time and following work conducted on the site or in surrounding areas.


The assessment of the degree and extent of contamination and the estimates of volumes of contaminated soils, residual wastes, contaminated groundwater, surface water or other media provided herein are estimated and are not valid for areas other than the locations of the sampling stations, at the depths attained at those stations.

Hence, the quantities of contaminated media to be managed are provided for the information purposes only and may vary, either up or down, if other pertinent information becomes available.

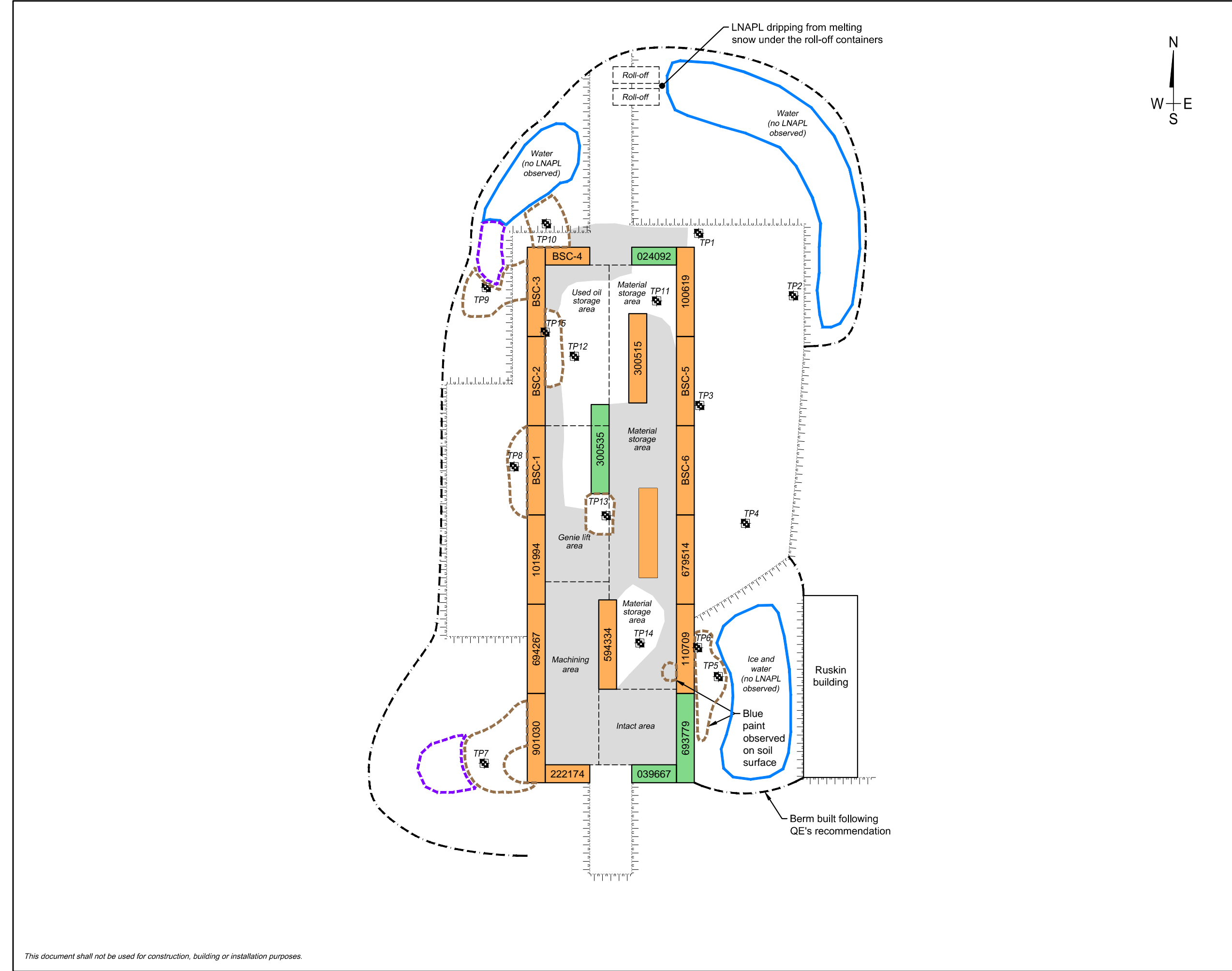
APPENDIX B

FIGURES



<div>Presented to:</div> <div>BAFFINLAND IRON MINES CORPORATION</div> <div>Property located at: Anmar Maintenance Shop Milne Inlet</div>	<div>Figure 1</div> <div>Regional Site Location</div> <div>PHASE II ENVIRONMENTAL SITE CHARACTERIZATION (2015-05-30)</div>	Scale: As shown		Design date: 2015-06-10		Revision date: 2015-07-08	
		Drawn by: H. Longval		Verified by: P. Prud'homme		Approved by: B. Dion	
		Project no.: QE15-113-1		Drawing no.: QE15-113-1-03		Layout: A	Geodetic reference: UTM/NAD83 Zone 17
		<div> Qikiqtaaluk environmental ᑭᑭᑭᑭᑭᑭ ᑎᑭᑭᑭᑭᑭᑭ</div>					





Legend

- TP1* Test pit (Sanexen, May 2015)
- Berm (approximate location)
- Embankment slope (approximate location)
- Approximate impacted area with paint stains or oil stains on soil surface
- Light Non-Aqueous Phase Liquid (LNAPL)
- Intact Seacan
- Burned or partially burned Seacan
- Frozen soil surface on May 30, 2015

Source:

- Sanexen; borehole locations are based on field measurements; May 2015.

0 5 10 15 20 25m

CONFIDENTIAL

Figure 2

Site Plan and Sampling Point Locations

PHASE II ENVIRONMENTAL
SITE CHARACTERIZATION (2015-05-30)

Presented to:

**BAFFINLAND IRON MINES
CORPORATION**

Property located at:

*Anmar Maintenance Shop
Milne Inlet*

Scale:	Design date:	Revision date:
As shown	2015-06-10	2015-07-08
Drawn by:	Verified by:	Approved by:
H. Longval	P. Prud'homme	B. Dion
Project no.:	Drawing no.:	Layout:
QE15-113-1	QE15-113-1-03	B
Geodetic reference:		
None		None

**Qikiqtaaluk
environmental**
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Environmental Soil Classification

The concentration code presented corresponds with the highest of the parameters measured of the sampling intervals, with respect to individual criteria and limit values. See the table of analytical results for other parameter values.

Concentration Codes

Concentrations below the Environmental Guideline for Contaminated Site Remediation, GNUDE, April 1999, revised in 2009

Concentrations exceeding the Environmental Guideline for Contaminated Site Remediation, GNUDE, April 1999, revised in 2009

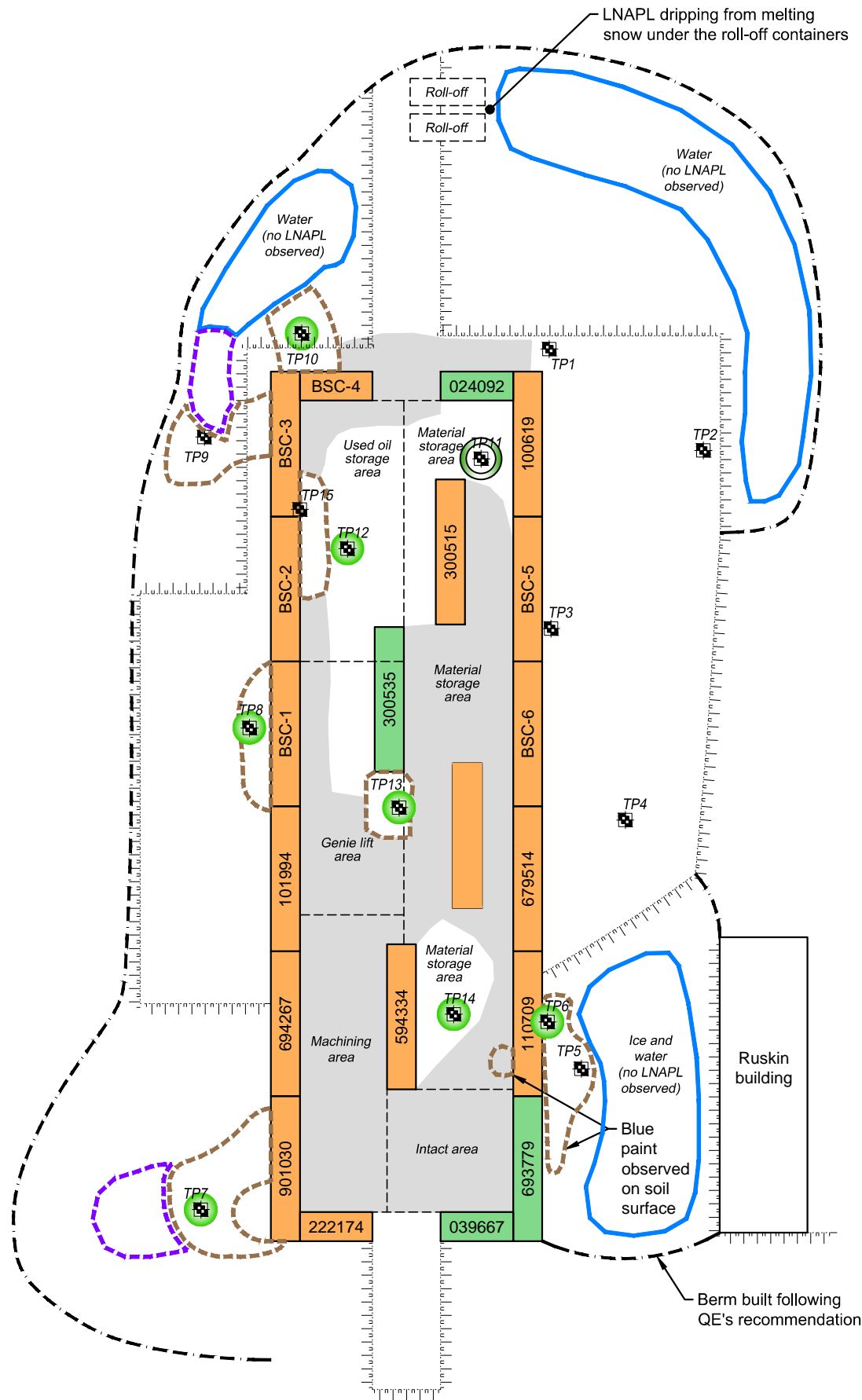
GNUDE: Government of Nunavut Department of Environment

Classification Code (residual materials)

Concentration below the GIWD criteria

Concentration above the GIWD criteria

GIWD : Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, Government of Nunavut, Department of Environment, January 2002, revised in April 2011.



Legend

TP1

Test pit (Sanexen, May 2015)

Berm (approximate location)

Embankment slope (approximate location)

Approximate impacted area with paint stains or oil stains on soil surface

Light Non-Aqueous Phase Liquid (LNAPL)

Intact Seacan

Burned or partially burned Seacan

Frozen soil surface on May 30, 2015

Source:

- Sanexen; borehole locations are based on field measurements; May 2015.

0

5

10

15

20

25m

CONFIDENTIAL

Figure 3
Analytical Results of Surface Soils (depth 5 to 20cm) and Residual Materials

PHASE II ENVIRONMENTAL
SITE CHARACTERIZATION (2015-05-30)

Presented to:

BAFFINLAND IRON MINES CORPORATION

Property located at:
Anmar Maintenance Shop
Milne Inlet

Scale:	Design date:	Revision date:
As shown	2015-06-10	2015-07-08
Drawn by:	Verified by:	Approved by:
D. Grant	P. Prud'homme	B. Dion
Project no.:	Drawing no.:	Layout:
QE15-113-1	QE15-113-1-03	C
Geodetic reference:		
None		None

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environmental
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APPENDIX C

PHOTOGRAPHIC REPORT



Photo 1

View of test pit TP5 where blue paint stains were visible on soil surface east of Seacan #110709.



Photo 2

View of test pit TP7 where oil stains and LNAPL were visible on soil surface west of Seacan #901030.



Photo 3

View of test pit TP8 where oil stains were visible on soil surface west of Seacan #BSC-1.



Photo 4

View of test pit TP9 where oil stains and LNAPL were visible on soil surface west of Seacan #BSC-3.



Photo 5

View of test pit TP10 where oil stains and LNAPL were visible on soil surface north of Seacan #BSC-4.



Photo 6

View of test pit TP11 where residual materials (ash) were visible on soil in the materials storage area.



Photo 7

View of test pit TP12 where ash and ABC powder from fire extinguisher were visible on soil surface in the used oil storage area.



Photo 8

View of test pit TP13 where ash and LNAPLs were visible on soil surface in the Genie lift area.



Photo 9

View of test pit TP14 where blue paint stains and ash were visible on soil surface in the materials storage area.



Photo 10

View of test pit TP15 where oil stains were visible on soil surface near oil storage tote tanks.

APPENDIX D

TABLES

TABLE I: Soil Analytical Results
Baffinland Iron Mines
Anmar Shop, Milne Inlet (Nunavut)

Sample Identification		TP6	TP7-S	TP7	TP8	TP10	TP12	TP13	TP14
Sampling Date (yyyy-mm-dd)		2015-05-30	2015-05-30	2015-05-30	2015-05-30	2015-05-30	2015-05-30	2015-05-30	2015-05-30
Concentration Range	> GNUDE								
Criteria and limit value ¹	GNUDE								
	Industrial								
Metals (µg/g)									
Silver	40	< 0,5	-	-	< 0,5	< 0,5	< 0,5	-	< 0,5
Arsenic	12	1.3	-	-	1.5	1.6	1.0	-	< 1,0
Barium	2,000	7.1	-	-	5.3	6.0	16.7	-	33.2
Cadmium	22	< 0,5	-	-	< 0,5	< 0,5	< 0,5	-	< 0,5
Cobalt	300	3.7	-	-	8.1	5.8	2.1	-	2.6
Total Chromium	87	7.8	-	-	13.1	11.4	7.6	-	8.7
Copper	91	6.7	-	-	16.8	9.5	3.9	-	5.7
Tin	300	< 5,0	-	-	< 5,0	< 5,0	< 5,0	-	< 5,0
Manganese	*	< 5	-	-	810	< 5	< 5	-	< 5
Mercury	50	< 0,1	-	-	< 0,1	< 0,1	< 0,1	-	< 0,1
Molybdenum	40	< 1,0	-	-	1.8	1.1	< 1,0	-	< 1,0
Nickel	50	7.0	-	-	15.5	10.4	9.1	-	7.3
Lead	600	7.9	-	-	16.3	11.9	7.6	-	8.1
Selenium	2.9	< 1,0	-	-	< 1,0	< 1,0	< 1,0	-	< 1,0
Zinc	360	117	-	-	21.5	12.3	54.1	-	127
Polycyclic Aromatic Hydrocarbons (µg/g)									
Acenaphthene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Acenaphthylene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Anthracene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Benzo(a)pyrene	0.7	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Benzo(b)fluoranthene	10	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Benzo(k)fluoranthene	10	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Benzo(g,h,i)perylene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Chrysene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Dibenzo(a,h)anthracene	10	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Fluoranthene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Fluorene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Indeno(1,2,3-cd)pyrene	10	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Methyl-1 naphthalene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Methyl-2 naphthalene	*	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Naphthalene	22	< 0,05	-	-	< 0,05	< 0,05	< 0,05	-	< 0,05
Phenanthrene	50	< 0,05	-	-	< 0,05	< 0,05	0.06	-	0.08
Pyrene	100	< 0,05	-	-	< 0,05	< 0,05	0.05	-	< 0,05
Monocyclic Aromatic Hydrocarbons (µg/g)									
Benzene	0.03	< 0,02	< 0,02	< 0,02	< 0,02	< 0,02	< 0,02	< 0,02	-
Ethylbenzene	0.082	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	-
Toluene	0.37	< 0,20	< 0,20	< 0,20	< 0,20	< 0,20	< 0,05	< 0,20	-
Xylenes (o,m,p)	11	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	< 0,05	-
Petroleum Hydrocarbons (µg/g)									
Fraction 1 (C ₆ to C ₁₀)	320	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-
Fraction 2 (> C ₁₀ to C ₁₆)	260	< 4	< 80	< 4	< 4	< 4	71	< 4	-
Fraction 3 (> C ₁₆ to C ₃₄)	1,700	< 8	28,000	< 8	< 8	< 8	< 8	< 8	-
Fraction 4 (> C ₃₄)	3,300	< 6	15,100	< 6	< 6	< 6	< 6	< 6	-

1. Each result is presented in table format corresponding to the level for coarse-grained surface soil criterion of the *Environmental Guideline for Contaminated Site Remediation*, GNUDE, April 1999, Revised in March 2009.

-: Not analyzed

*: No criteria for this parameter was determined by the GNUDE, but analysis was necessary for disposal off-site.

GNUDE : Government of Nunavut, Department of Environment

Validation of criteria: May 2015

TABLE II : Analytical Results of Residual Materials (Leachate)
Baffinland Iron Mines
Anmar Shop, Milne Inlet (Nunavut)

Sample Identification		TP-11
Sampling Date (yyyy-mm-dd)		2015-05-30
Parameter	Environmental Guideline Industrial Waste Discharges (GNUDE, 2011)	
Leachate (mg/L)¹		
Nitrates and Nitrites	-	<0.20
Total Fluoride (F)	-	0.4
Nitrites (N)	-	<0.20
Mercury (Hg)	0.1	0.0002
Arsenic (As)	2.5	0.014
Barium (Ba)	100	0.19
Boron (B)	-	0.25
Cadmium (Cd)	0.5	<0.0005
Chromium (Cr)	5	0.001
Lead (Pb)	5	<0.001
Selenium (Se)	1	0.003
Uranium (U)	10	0.003

mg/L: Milligram per litre

Indicates an exceedance of the standards.

- The standard listed represents the concentration of a contaminant contained in the leachate (TCLP) of a solid material as well as the degree to which a material is considered leachable, therefore hazardous according to Table 1 of the Environmental Guideline for Industrial Waste Discharges into Municipal Solid Waste and Sewage Treatment Facilities, Government of Nunavut Department of Environment, January 2002, revised in April 2011.

Validation of Standards: June 2015

APPENDIX E

CERTIFICATES OF ANALYSIS

Request number: **15-666046**



Date Received: 2015-06-06

Date Certificate Issued: 2015-06-10

Certificate Version: 1

☒ Official Certificate of Analysis

☐ Preliminary Certificate of Analysis

Client

EXOVA (ACCUTEST-OTTAWA) - DPT 151

146 Colonnade Road, Unit 8

Ottawa, Ontario, Canada

K2E 7Y1

Telephone : (613) 727-5692

Fax : (613) 727-5222

P.O. Number	Your project ID.	Project Manager
522878	1509898	Mr Scott Clark

Comments

This version replaces and cancels all earlier version.

NA : Information Not Available

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Client: **EXOVA (ACCUTEST-OTTAWA) - DPT 151**Request Number: **15-666046**

P.O. Number	Your Project ID.	Project Manager
522878	1509898	Mr Scott Clark

Sample(s)

Lab. No.	2853644
Your Reference	1179200 - TP11
Matrix	Leachate
Sampled by	Client
Site sampled	NA
Date sampled	NA
Date received	2015-06-06

Parameter(s)Method
Reference**Fluoride (electrode)**Fluoride (ion-selective electrode) (Accredited)
E-A-EN-EN-CHI-PC-MD012 (S.M.4500-F B,C,D)

Fluoride

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505778
mg/L	0.4

TCLP leachate (2 liters)Leachate method TCLP (1311) (Accredited)
E-A-EN-EN-CHI-PC-MD026 (REF: MA.100-Lix.com.1.1)

pH of the solid - initial (1/20)

pH after acid addition

pH after leaching

Solution used

Preparation	2015-06-08
Analysis	-
Sequential No.	505628
	10.0
	4.7
	7.6
	1



Client: **EXOVA (ACCUTEST-OTTAWA) - DPT 151**Request Number: **15-666046**

P.O. Number	Your Project ID.	Project Manager
522878	1509898	Mr Scott Clark

Sample(s)**Lab. No.** **2853644**Your
Reference 1179200 - TP11Matrix
Sampled by Leachate
Client

Site sampled NA

Date sampled NA
Date received 2015-06-06**Parameter(s)**Method
Reference**Nitrite & nitrate (as N)**Anions by ion chromatography. (Accredited)
E-A-EN-EN-CHI-PC-MD028 (REF MA300-IONS 1.3 CEAEQ)Preparation 2015-06-09
Analysis 2015-06-09
Sequential No. 505775

Nitrite & nitrate (as N)

mg/L < 0.20

Nitrite (as N)Anions by ion chromatography. (Accredited)
E-A-EN-EN-CHI-PC-MD028 (REF MA300-IONS 1.3 CEAEQ)Preparation 2015-06-09
Analysis 2015-06-09
Sequential No. 505775

Nitrite (as N)

mg/L < 0.20



Client: **EXOVA (ACCUTEST-OTTAWA) - DPT 151**Request Number: **15-666046**

P.O. Number	Your Project ID.	Project Manager
522878	1509898	Mr Scott Clark

Sample(s)

Lab. No.	2853644
Your Reference	1179200 - TP11
Matrix	Leachate
Sampled by	Client
Site sampled	NA
Date sampled	NA
Date received	2015-06-06

Parameter(s)Method
Reference**Arsenic (As)**Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Arsenic

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	0.014

Baryum (Ba)Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Barium

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	0.19

Boron (B)Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Boron

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	0.25

Cadmium (Cd)Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Cadmium

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	< 0.0005

Chromium (Cr)Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Chromium

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	0.001

Lead (Pb)Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Lead

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	< 0.001

Mercury (Hg)Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Mercury

Preparation	2015-06-09
Analysis	2015-06-09
Sequential No.	505777
mg/L	0.0002

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Certificate of Analysis No. 663186 - Revision 1 - Page 4 of 5



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Client: **EXOVA (ACCUTEST-OTTAWA) - DPT 151**

Request Number: 15-666046

P.O. Number	Your Project ID.	Project Manager
522878	1509898	Mr Scott Clark

Sample(s)

Lab. No. **2853644**
Your Reference 1179200 - TP11

Matrix Leachate
Sampled by Client

Site sampled NA

Date sampled NA
Date received 2015-06-06

Parameter(s)

Method
Reference

Selenium (Se)

Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Selenium

Preparation 2015-06-09
Analysis 2015-06-09
Sequential No. 505777
mg/L 0.003

Uranium (U)

Metals by ICP (Accredited)
E-A-EN-EN-CHI-PC-MD017 (REF:MA.200-Mét1.2,CEAEQ)

Uranium

Preparation 2015-06-09
Analysis 2015-06-09
Sequential No. 505777
mg/L 0.003

Note 1: Results and comments, if any, relate only to samples submitted for analysis at the Pointe-Claire laboratory.





Certificat d'analyses

Client: **EXOVA (ACCUTEST-OTTAWA) - DPT 151**

Request Number: **15-666046**

P.O. Number	Your Project ID.	Project Manager
522878	1509898	Mr Scott Clark

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Fluoride (electrode)					
Sequential ID No.: 505778					
Fluoride	mg/L	< 0.1	< 0.1	6.1	5.4 - 6.6
Nitrite (as N)					
Sequential ID No.: 505775					
Nitrite (as N)	mg/L	< 0.02	< 0.02	1.66	1.28 - 1.92
Nitrite & nitrate (as N)					
Sequential ID No.: 505775					
Nitrite & nitrate (as N)	mg/L	< 0.02	< 0.02	2.89	2.23 - 3.35
Arsenic (As)					
Sequential ID No.: 505777					
Arsenic	mg/L	< 0.001	< 0.001	0.953	0.8 - 1.2
Baryum (Ba)					
Sequential ID No.: 505777					
Barium	mg/L	< 0.01	< 0.01	1.01	0.8 - 1.2
Boron (B)					
Sequential ID No.: 505777					
Boron	mg/L	< 0.02	0.02	1.01	0.8 - 1.2
Cadmium (Cd)					
Sequential ID No.: 505777					
Cadmium	mg/L	< 0.0005	< 0.0005	0.953	0.8 - 1.2
Chromium (Cr)					
Sequential ID No.: 505777					
Chromium	mg/L	< 0.001	0.002	1.01	0.8 - 1.2
Mercury (Hg)					
Sequential ID No.: 505777					
Mercury	mg/L	< 0.0001	< 0.0001	0.0501	0.04 - 0.06
Lead (Pb)					
Sequential ID No.: 505777					
Lead	mg/L	< 0.001	0.002	335 1.03	226 - 340 0.8 - 1.2
Selenium (Se)					
Sequential ID No.: 505777					
Selenium	mg/L	< 0.001	0.001	0.929	0.8 - 1.2

RDL : Reported Detection Limit

Appendix 1 of Certificate no.663186 - Page 1 of 2

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Certificat d'analyses

Client: **EXOVA (ACCUTEST-OTTAWA) - DPT 151**

Request Number: **15-666046**

P.O. Number	Your Project ID.	Project Manager
522878	1509898	Mr Scott Clark

Quality Control Results (CQ)

Parameters (Sequential ID No.)	Units	RDL	Blank	Certified Control	
				Result	Expected Range
Uranium (U)					
Sequential ID No.: 505777					
Uranium	mg/L	< 0.001	< 0.001	1.02	0.8 - 1.2

Comments

Sequential ID no. 505777 : Bore/Chrome//Plomb/Sélénium : Blanc positif non soustrait des échantillons / Positive blank not subtracted from the samples.

Nickel : Blanc positif soustrait des échantillons / Positive blank subtracted from the samples.

Client: Sanexen Services Environnementaux Inc.
9935 Catania Avenue, Entrance 1 - Suite 200
Brossard, QC
J4Z 3V4
Attention: Mr. Pascal Prud'homme
PO#:
Invoice to: Sanexen Services Environnementaux Inc.

Report Number: 1509956
Date Submitted: 2015-06-04
Date Reported: 2015-06-11
Project:
COC #: 797526

Page 1 of 10

Dear Pascal Prud'homme:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____

Nadine Pinsonneault
Team Leader, Inorganics

APPROVAL: _____

Charlie (Long) Qu
Laboratory Supervisor, Organics

All analysis is completed in Ottawa, Ontario (unless otherwise indicated).

Exova Ottawa is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on our CALA scope of accreditation. It can be found at <http://www.cala.ca/scopes/2602.pdf>.

Exova (Ottawa) is certified and accredited for specific parameters by OMAFRA, Ontario Ministry of Agriculture, Food and Rural Affairs (for farm soils). Licensed by Ontario MOE for specific tests in drinking water.

Exova (Mississauga) is accredited for specific parameters by SCC, Standards Council of Canada (to ISO 17025)

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Exova recommends consulting the official provincial or federal guideline as required.

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 COC #: 797526

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1179473	1179474	1179475	1179476
						Soil 2015-05-30 TP6	Soil 2015-05-30 TP7	Soil 2015-05-30 TP8	Soil 2015-05-30 TP10
General Chemistry	Moisture	0.1	%			4.8		0.4	2.8
Metals	Ag	0.5	ug/g dry			<0.5		<0.5	<0.5
	As	1.0	ug/g dry			1.3		1.5	1.6
	Ba	1.0	ug/g dry			7.1		5.3	6.0
	Cd	0.5	ug/g dry			<0.5		<0.5	<0.5
	Co	1.0	ug/g dry			3.7		8.1	5.8
	Cr	1.0	ug/g dry			7.8		13.1	11.4
	Cu	1.0	ug/g dry			6.7		16.8	9.5
	Mn	5	ug/g dry			<5		810	<5
	Mo	1.0	ug/g dry			<1.0		1.8	1.1
	Ni	1.0	ug/g dry			7.0		15.5	10.4
	Pb	1.0	ug/g dry			7.9		16.3	11.9
	Se	1.0	ug/g dry			<1.0		<1.0	<1.0
	Sn	5.0	ug/g dry			<5.0		<5.0	<5.0
	Zn	1.0	ug/g dry			117		21.5	12.3
PHC (Hydrocarbons)	F1 (C6-C10)	10	ug/g				<10	<10	<10
	F1-BTEX (C6-C10)	10	ug/g			<10	<10	<10	<10
Semi-Volatiles	1-methylnaphthalene	0.05	ug/g			<0.05		<0.05	<0.05
	2-methylnaphthalene	0.05	ug/g			<0.05		<0.05	<0.05
	Acenaphthene	0.05	ug/g			<0.05		<0.05	<0.05
	Acenaphthylene	0.05	ug/g			<0.05		<0.05	<0.05
	Anthracene	0.05	ug/g			<0.05		<0.05	<0.05
	Benzo(a)anthracene	0.05	ug/g			<0.05		<0.05	<0.05
	Benzo(a)pyrene	0.05	ug/g			<0.05		<0.05	<0.05
	Benzo(b)fluoranthene	0.05	ug/g			<0.05		<0.05	<0.05
	Benzo(g,h,i)perylene	0.05	ug/g			<0.05		<0.05	<0.05

Guideline = * = Guideline Exceedence

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

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 Project:
 COC #: 797526

					Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1179473 Soil 2015-05-30 TP6	1179474 Soil 2015-05-30 TP7	1179475 Soil 2015-05-30 TP8	1179476 Soil 2015-05-30 TP10
Group	Analyte	MRL	Units	Guideline					
Semi-Volatiles	Benzo(k)fluoranthene	0.05	ug/g			<0.05		<0.05	<0.05
	Chrysene	0.05	ug/g			<0.05		<0.05	<0.05
	Dibenzo(a,h)anthracene	0.05	ug/g			<0.05		<0.05	<0.05
	Fluoranthene	0.05	ug/g			<0.05		<0.05	<0.05
	Fluorene	0.05	ug/g			<0.05		<0.05	<0.05
	Indeno(1,2,3-c,d)pyrene	0.05	ug/g			<0.05		<0.05	<0.05
	Naphthalene	0.05	ug/g			<0.05		<0.05	<0.05
	Phenanthrene	0.05	ug/g			<0.05		<0.05	<0.05
	Pyrene	0.05	ug/g			<0.05		<0.05	<0.05
Subcontract	F1 (C6-C10)	7	ug/g dry			<10			
	F2 (C10-C16)	4	ug/g dry			<4	<4	<4	<4
	F3 (C16-C34)	8	ug/g dry			<8	<8	<8	<8
	F4 (C34-C50)	6	ug/g dry			<6	<6	<6	<6
	Hg	0.1	ug/g dry			<0.1		<0.1	<0.1
	Moisture	0.1	% by Wt.				92.3		
VOCs	Benzene	0.02	ug/g			<0.02	<0.02	<0.02	<0.02
	Ethylbenzene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	m/p-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	o-xylene	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
	Toluene	0.20	ug/g			<0.20	<0.20	<0.20	<0.20
	Xylene; total	0.05	ug/g			<0.05	<0.05	<0.05	<0.05
VOCs Surrogates (%)	Toluene-d8	0	%			98	96	100	99

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Report Number: 1509956
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 Date Reported: 2015-06-11
 Project:
 COC #: 797526

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.			
					1179477 Soil 2015-05-30 TP12	1179478 Soil 2015-05-30 TP14	1179479 Soil 2015-05-30 TP7-S	1179480 Soil 2015-05-30 TP13
General Chemistry	Moisture	0.1	%		2.4			
Metals	Ag	0.5	ug/g dry		<0.5	<0.5		
	As	1.0	ug/g dry		1.0	<1.0		
	Ba	1.0	ug/g dry		16.7	33.2		
	Cd	0.5	ug/g dry		<0.5	<0.5		
	Co	1.0	ug/g dry		2.1	2.6		
	Cr	1.0	ug/g dry		7.6	8.7		
	Cu	1.0	ug/g dry		3.9	5.7		
	Mn	5	ug/g dry		<5	<5		
	Mo	1.0	ug/g dry		<1.0	<1.0		
	Ni	1.0	ug/g dry		9.1	7.3		
	Pb	1.0	ug/g dry		7.6	8.1		
	Se	1.0	ug/g dry		<1.0	<1.0		
	Sn	5.0	ug/g dry		<5.0	<5.0		
	Zn	1.0	ug/g dry		54.1	127		
PHC (Hydrocarbons)	F1 (C6-C10)	10	ug/g		<10		<10	<10
	F1-BTEX (C6-C10)	10	ug/g		<10		<10	<10
Semi-Volatiles	1-methylnaphthalene	0.05	ug/g		<0.05	<0.05		
	2-methylnaphthalene	0.05	ug/g		<0.05	<0.05		
	Acenaphthene	0.05	ug/g		<0.05	<0.05		
	Acenaphthylene	0.05	ug/g		<0.05	<0.05		
	Anthracene	0.05	ug/g		<0.05	<0.05		
	Benzo(a)anthracene	0.05	ug/g		<0.05	<0.05		
	Benzo(a)pyrene	0.05	ug/g		<0.05	<0.05		
	Benzo(b)fluoranthene	0.05	ug/g		<0.05	<0.05		
	Benzo(g,h,i)perylene	0.05	ug/g		<0.05	<0.05		

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Report Number: 1509956
 Date Submitted: 2015-06-04
 Date Reported: 2015-06-11
 Project:
 COC #: 797526

					1179477 Soil 2015-05-30 TP12	1179478 Soil 2015-05-30 TP14	1179479 Soil 2015-05-30 TP7-S	1179480 Soil 2015-05-30 TP13
Group	Analyte	MRL	Units	Guideline				
Semi-Volatiles	Benzo(k)fluoranthene	0.05	ug/g		<0.05	<0.05		
	Chrysene	0.05	ug/g		<0.05	<0.05		
	Dibenzo(a,h)anthracene	0.05	ug/g		<0.05	<0.05		
	Fluoranthene	0.05	ug/g		<0.05	<0.05		
	Fluorene	0.05	ug/g		<0.05	<0.05		
	Indeno(1,2,3-c,d)pyrene	0.05	ug/g		<0.05	<0.05		
	Naphthalene	0.05	ug/g		<0.05	<0.05		
	Phenanthrene	0.05	ug/g		0.06	0.08		
	Pyrene	0.05	ug/g		0.05	<0.05		
Subcontract	F2 (C10-C16)	4	ug/g dry		71			<4
		80	ug/g dry				<80	
	F3 (C16-C34)	160	ug/g dry				28000	
		8	ug/g dry		<8			<8
	F4 (C34-C50)	120	ug/g dry				15100	
		6	ug/g dry		<6			<6
	Hg	0.1	ug/g dry		<0.1	<0.1		
	Moisture	0.1	% by Wt.				96.2	94.4
VOCs	Benzene	0.02	ug/g		<0.02		<0.02	<0.02
	Ethylbenzene	0.05	ug/g		<0.05		<0.05	<0.05
	m/p-xylene	0.05	ug/g		<0.05		<0.05	<0.05
	o-xylene	0.05	ug/g		<0.05		<0.05	<0.05
	Toluene	0.20	ug/g		<0.20		<0.20	<0.20
	Xylene; total	0.05	ug/g		<0.05		<0.05	<0.05
VOCs Surrogates (%)	Toluene-d8	0	%		99		98	101

Guideline = * = Guideline Exceedence

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Client: Sanexen Services Environnementaux Inc.
 9935 Catania Avenue, Entrance 1 - Suite 200
 Brossard, QC
 J4Z 3V4
 Attention: Mr. Pascal Prud'homme
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 Invoice to: Sanexen Services Environnementaux Inc.

Report Number: 1509956
 Date Submitted: 2015-06-04
 Date Reported: 2015-06-11
 Project:
 COC #: 797526

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No: 288499 Analysis Date: 2015-06-08 Method: P 8270			
1-methylnaphthalene	<0.05 ug/g	83	50-140
2-methylnaphthalene	<0.05 ug/g	83	50-140
Acenaphthene	<0.05 ug/g	85	50-140
Acenaphthylene	<0.05 ug/g	84	50-140
Anthracene	<0.05 ug/g	94	50-140
Benzo(a)anthracene	<0.05 ug/g	98	50-140
Benzo(a)pyrene	<0.05 ug/g	101	50-140
Benzo(b)fluoranthene	<0.05 ug/g	97	50-140
Benzo(g,h,i)perylene	<0.05 ug/g	109	50-140
Benzo(k)fluoranthene	<0.05 ug/g	100	50-140
Chrysene	<0.05 ug/g	100	50-140
Dibenzo(a,h)anthracene	<0.05 ug/g	110	50-140
Fluoranthene	<0.05 ug/g	89	50-140
Fluorene	<0.05 ug/g	88	50-140

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 Date Reported: 2015-06-11
 Project:
 COC #: 797526

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Indeno(1,2,3-c,d)pyrene	<0.05 ug/g	108	50-140
Moisture	<0.1 %	100	80-120
Naphthalene	<0.05 ug/g	81	50-140
Phenanthrene	<0.05 ug/g	94	50-140
Pyrene	<0.05 ug/g	89	50-140
Run No: 288506 Analysis Date: 2015-06-09 Method: CCME			
F1 (C6-C10)	<10 ug/g	97	80-120
F1-BTEX (C6-C10)			
Xylene; total			
Run No: 288510 Analysis Date: 2015-06-08 Method: V 8260B			
Benzene	<0.02 ug/g	113	60-130
Ethylbenzene	<0.05 ug/g	119	60-130
m/p-xylene	<0.05 ug/g	114	60-130
o-xylene	<0.05 ug/g	102	60-130
Toluene	<0.20 ug/g	112	60-130
Run No: 288579 Analysis Date: 2015-06-10 Method: SUBCONTRACT P			
Ag	<0.5 ug/g dry	104	

Guideline = * = Guideline Exceedence

All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Sanexen Services Environnementaux Inc.
 9935 Catania Avenue, Entrance 1 - Suite 200
 Brossard, QC
 J4Z 3V4
 Attention: Mr. Pascal Prud'homme
 PO#:
 Invoice to: Sanexen Services Environnementaux Inc.

Report Number: 1509956
 Date Submitted: 2015-06-04
 Date Reported: 2015-06-11
 Project:
 COC #: 797526

QC Summary

Analyte	Blank	QC % Rec	QC Limits
As	<1.0 ug/g dry	92	
Ba	<1.0 ug/g dry	100	
Cd	<0.5 ug/g dry	90	
Co	<1.0 ug/g dry	88	
Cr	<1.0 ug/g dry	90	
Cu	<1.0 ug/g dry	89	
F1 (C6-C10)	<7.0 ug/g dry	98	
F2 (C10-C16)	<4.0 ug/g dry	104	
F3 (C16-C34)	<8.0 ug/g dry	124	
F4 (C34-C50)	<6.0 ug/g dry	115	
Hg	<0.1 ug/g dry	108	
Mn	<5.0 ug/g dry	90	
Mo	<1.0 ug/g dry	95	
Moisture	<0.1 % by Wt.		
Ni	<1.0 ug/g dry	92	
Pb	<1.0 ug/g dry	98	
Se	<1.0 ug/g dry	90	

Guideline = * = **Guideline Exceedence**

All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Sanexen Services Environnementaux Inc.
9935 Catania Avenue, Entrance 1 - Suite 200
Brossard, QC
J4Z 3V4
Attention: Mr. Pascal Prud'homme
PO#:
Invoice to: Sanexen Services Environnementaux Inc.

Report Number: 1509956
Date Submitted: 2015-06-04
Date Reported: 2015-06-11
Project:
COC #: 797526

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Sn	<5.0 ug/g dry	94	
Zn	<1.0 ug/g dry	90	

Guideline =*** = Guideline Exceedence**

All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).

Results relate only to the parameters tested on the samples submitted.

Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Client: Sanexen Services Environnementaux Inc.
 9935 Catania Avenue, Entrance 1 - Suite 200
 Brossard, QC
 J4Z 3V4
 Attention: Mr. Pascal Prud'homme
 PO#:
 Invoice to: Sanexen Services Environnementaux Inc.

Report Number: 1509956
 Date Submitted: 2015-06-04
 Date Reported: 2015-06-11
 Project:
 COC #: 797526

Petroleum Hydrocarbons - CCME Checklist

Samples were analysed by Exova Ottawa Method AMCCME2, "Petroleum Hydrocarbons in Water and Soil, CCME/TPH" or Exova Mississauga Method 11-09-SP-2322, "Petroleum Hydrocarbons in Water and Soil, CCME/TPH". These methods comply with the reference method for the CCME CWS PHC and are validated for use in the laboratory. Exova Ottawa is accredited by CALA (ISO 17025) for all CCME F1-F4 fractions as listed in this report. Exova Mississauga is accredited by SCC (ISO 17025) for all CCME F1-F4 fractions as listed in this report. Data for QC samples (blank, duplicate, spike) are available on request.

Holding/Analysis Times

	Yes/No	If NO, then reasons
All fractions analyzed within recommended hold times/analysis times?	Yes	
F1		
nC6 and nC10 response factors within 30% of toluene	Yes	
BTEX was subtracted from F1 fraction		
If YES, was F1-BTEX (C6-C10) reported	No	
F2		
nC10, nC16 and nC34 response factors within 10% of their average (F2-F4)	Yes	
Linearity within 15% (F2-F4)	Yes	
Napthalene was subtracted from F2 fraction		
If YES was F2-Napthalene reported		
F3		
PAH (selected compounds) subtracted from F3 fraction		
If YES was F3-PAH reported		
F4		
C50 response factor within 70% of nC10+nC16+nC34 average	Yes	
Chromatogram descended to baseline by retention time of C50	Yes	
if NO was F4 (C34-C50) gravimetric reported		

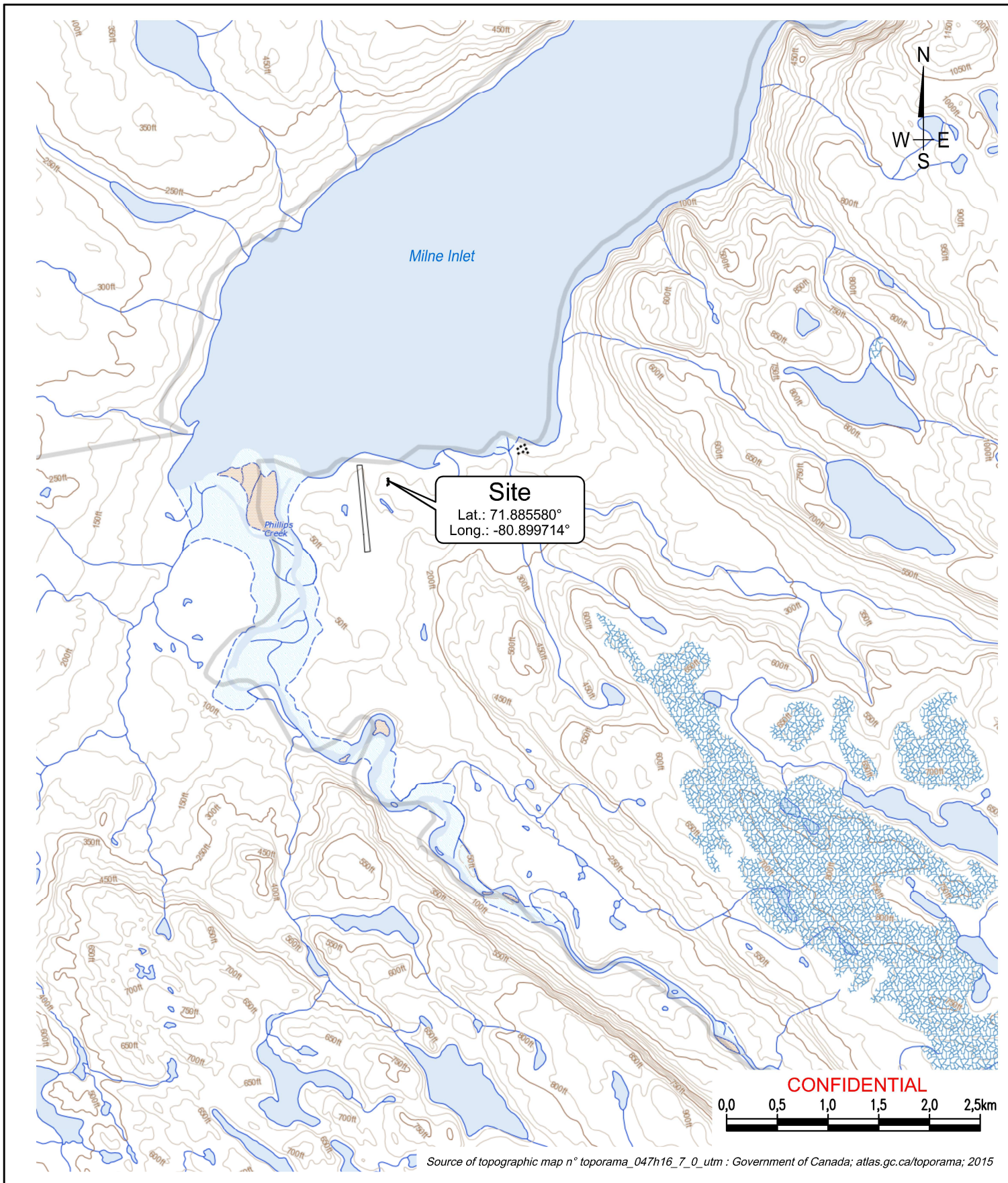
Guideline = * = Guideline Exceedence

All analysis completed in Ottawa, Ontario (unless otherwise indicated by ** which indicates analysis was completed in Mississauga, Ontario).
 Results relate only to the parameters tested on the samples submitted.
 Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

APPENDIX I

SAMPLE LOCATIONS AND CERTIFICATES OF ANALYSIS



Presented to:

Baffinland
Iron Mines Corporation


Property located at:
Anmar Maintenance Shop
Milne Inlet (Nunavut)

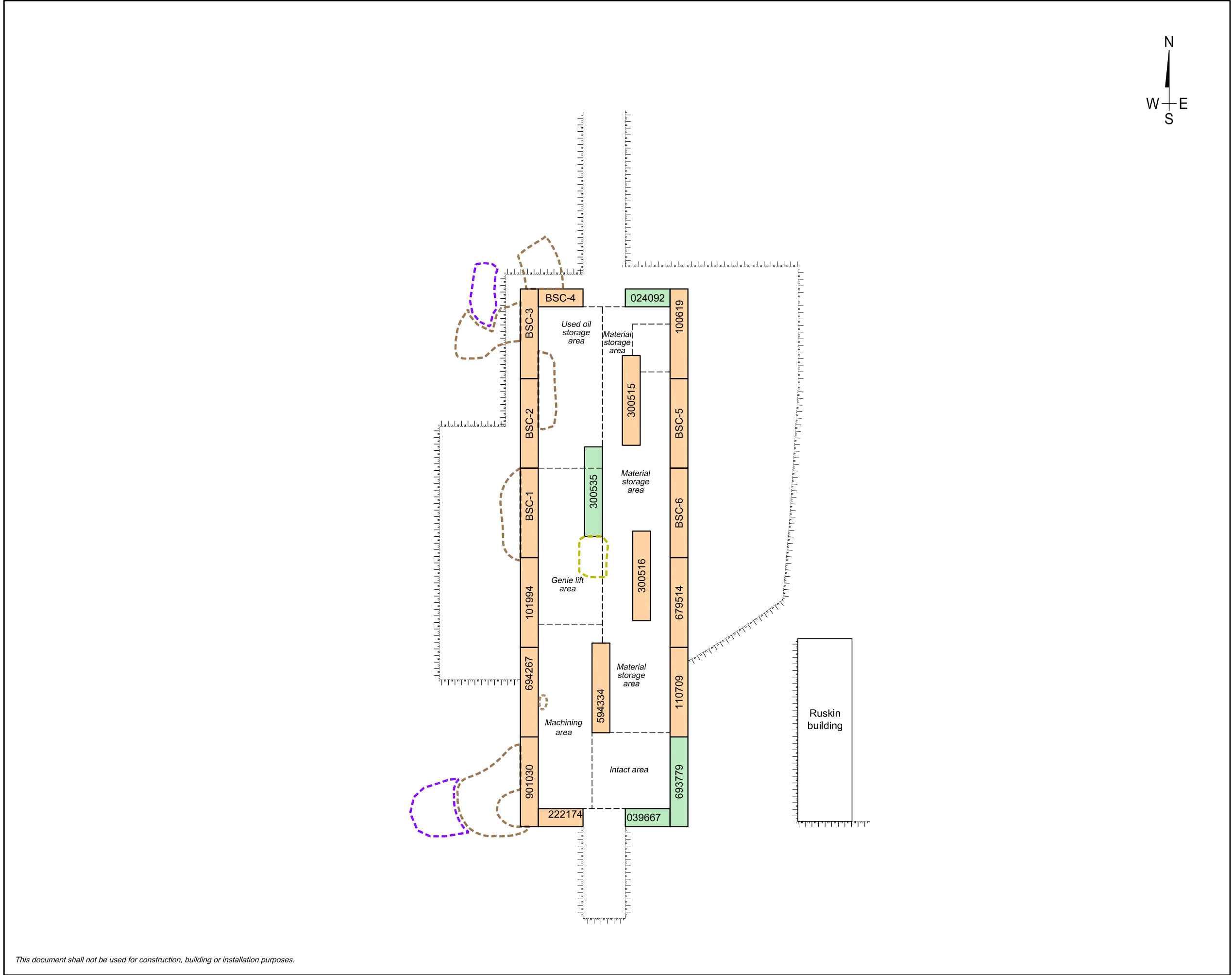
Figure 1

Regional Site Location

WORK SUMMARY
REMEDATION

Scale: As shown	Design date: 2015-06-10	Revision date: 2015-10-02
Drawn by: H. Longval	Verified by: P. Prud'homme	Approved by: B. Dion
Project no.: QE15-113-2	Drawing no.: QE15-113-2-01	Layout Geodetic reference: A UTM/NAD83 Zone 17

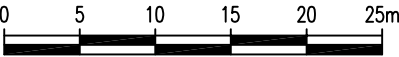

**Qikiqtaaluk
environmental**
ᑲᑲᑲᑲᑲᑲ ᑲᑲᑲᑲᑲᑲ



- Legend
- Embankment slope (approximate location)
 - Intact Seacan
 - Burned or partially burned Seacan
- Observations (August 2015) (1)
- Approximate impacted area with oil stains on soil surface
 - Light Non-Aqueous Phase Liquid (LNAPL)
 - Green liquid

Note:
Observations shown on this drawing do not include the aspect of ground surface under the containers
(1): Other indoor area were covered with ash.

Source:
• QE; field observations; August 2015.



CONFIDENTIAL

Figure 2

Site Plan

WORK SUMMARY
REMEDATION

Presented to:

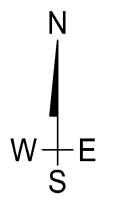
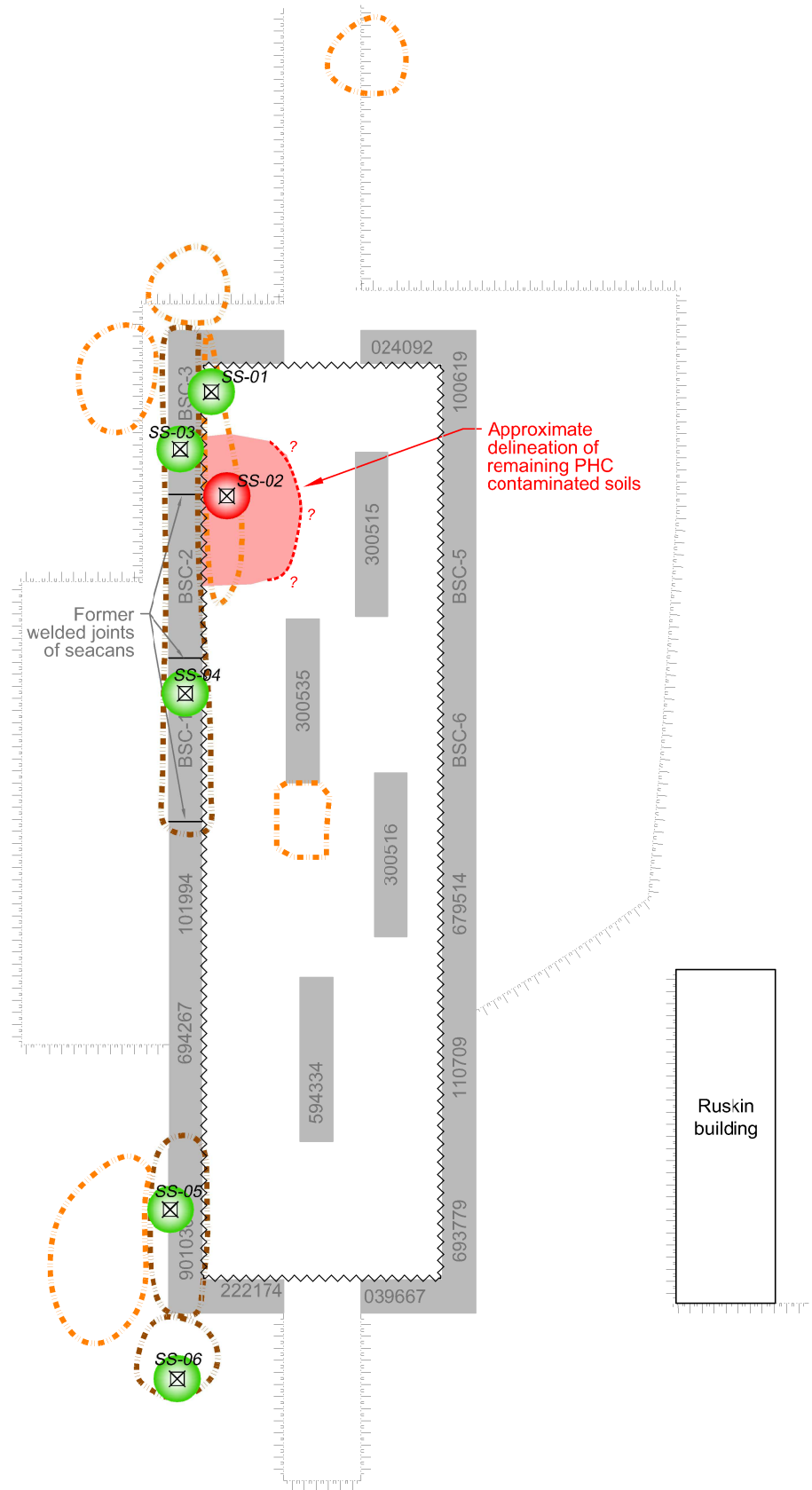


Property located at:

Anmar Maintenance Shop
Milne Inlet (Nunavut)

Scale: As shown	Design date: 2015-06-10	Revision date: 2015-10-01
Drawn by: H. Longval	Verified by: P. Prud'homme	Approved by: B. Dion
Project no.: QE15-113-2	Drawing no.: QE15-113-2-01	Layout: B
		Geodetic reference: None
		None





- Legend
- SS-02 Soil sample of the bottom of the excavation (QE, September 2015)
 - Surface cleanup excavation (< 25cm/10 ") (QE, September 2015)
 - Surface cleanup excavation (> 25cm/10 ") (QE, September 2015)
 - Liner (approximate location)
 - Berm (approximate location)
 - Embankment slope (approximate location)
 - Removed Seacans

Environmental Soil Classification

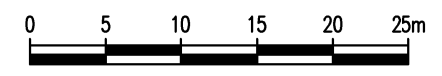
The concentration code presented corresponds with the highest of the parameters measured of the sampling intervals, with respect to individual criteria and limit values. See the table of analytical results for other parameter values.

Concentration Codes

- Concentrations below the Environmental Guideline for Contaminated Site Remediation, GNUDE, April 1999, revised in 2009
- Concentrations exceeding the Environmental Guideline for Contaminated Site Remediation, GNUDE, April 1999, revised in 2009

GNUDE: Government of Nunavut Department of Environment

Source:
• QE; field observations; August 2015.



CONFIDENTIAL

Figure 3
Analytical Results of Surface Soils

WORK SUMMARY
REMEDIATION

Presented to:

Baffinland
Iron Mines Corporation

Property located at:
**Anmar Maintenance Shop
Milne Inlet (Nunavut)**

Scale: As shown	Design date: 2015-06-10	Revision date: 2015-10-02
Drawn by: H. Longval	Verified by: P. Prud'homme	Approved by: B. Dion
Project no.: QE15-113-2	Drawing no.: QE15-113-2-01	Layout: C
	Geodetic reference:	
	None	None



APPENDIX J

TRANSPORT CANADA DIRECTIVES

Kellie Anne Fillman

De: Paiement, Louis <louis.paiement@tc.gc.ca>
Envoyé: 2 septembre 2015 12:03
À: Pascal Prud'homme
Objet: RE: Emballage pour transport maritime de cylindres de gaz comprimé qui ont brûlés

Bonjour M. Prud'homme,

Le transport des cylindres endommagés peut se faire dans un « crate », comme vous le précisiez dans votre courriel initial. Vous ne devez, cependant, placer les cylindres d'acétylène ou de propane dans un baril de récupération. Ce « crate » doit être en mesure de protéger la valve tel que prescrit, au paragraphe 4.2.2 de la norme CSA B340 et les indications de danger exigées par la Partie 4 du règlement doivent être apposées sur les cylindres. De plus, ces cylindres devront être accompagnés d'un document d'expédition conforme aux exigences réglementaires.

Si vous avez d'autres questions, n'hésitez pas à me contacter.

Louis Paiement
Inspecteur, transport des marchandises dangereuses
Inspector, Transport Dangerous Goods
800, boul. René-Lévesque ouest
Pièce 638, 6e étage
Montréal, QC H3B 1X9
tel: (514) 496-4293
fax: (514) 283-8234
louis.paiement@tc.gc.ca
www.tc.gc.ca

De : Pascal Prud'homme [mailto:pprudhomme@sanexen.com]
Envoyé : mardi, septembre 01, 2015 10:30
À : Paiement, Louis
Objet : TR: Emballage pour transport maritime de cylindres de gaz comprimé qui ont brûlés

Et voici les numéros UN :

1001
1072
1978

Merci.

Pascal

De : Pascal Prud'homme
Envoyé : 09/01/2015 07:27
À : 'Paiement, Louis'
Cc : Benoit Dion
Objet : RE: Emballage pour transport maritime de cylindres de gaz comprimé qui ont brûlés

Bonjour M. Paiement, nous avons une bouteille d'acétylène, 3 d'oxygène et 3 de propane et elles ont toutes passé au feu. Les bouteilles ont la hauteur d'un « Salvage drum », à l'exception que la valve dépasse du baril. Nous avons des valves qui ont une protection métallique fixée sur le cylindre, d'autres pas. Et toutes les composantes en plastique ont fondu, rendant certaines fonctionnalités de la valve inopérantes. Toutefois, aucune fuite de produit n'a été constatée.

Donc, pour me répéter autrement, nous pensions mettre chaque cylindre dans un baril UN, construire un « crate » pour stabiliser le cylindre à l'intérieur du baril et protéger les valves avec des 2x4.

Merci d'avance!

Pascal Prud'homme B. Sc., M. Env.

Chargé de projets, Restauration de sites



9935, avenue de Catania, Entrée 1 - Bureau 200

Brossard (Québec) J4Z 3V4

T. 450.466.2123

poste 135

F. 450.466.2240

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L'information contenue dans ce message électronique ainsi que dans les fichiers qui peuvent y être joints est de nature confidentielle et destinée à l'usage exclusif du destinataire. Si ce message vous est parvenu par erreur ou que vous n'êtes pas le destinataire visé, vous êtes par la présente avisé que tout usage, copie ou distribution de l'information contenue dans ce message est strictement interdit et vous êtes prié d'en aviser l'expéditeur et de détruire ce message.

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 **Pensez vert, est-ce nécessaire d'imprimer ce message?**

De : Paiement, Louis [<mailto:louis.paiement@tc.gc.ca>]

Envoyé : 08/31/2015 16:13

À : Pascal Prud'homme

Objet : RE: Emballage pour transport maritime de cylindres de gaz comprimé qui ont brûlés

Bonjour M. Prud'homme,

J'ai pris connaissance de votre demande mais j'aimerais, si possible, avoir une ou des photos du cylindre en question ainsi que l'identification du produit (# UN)?

Louis Paiement
Inspecteur, transport des marchandises dangereuses

Inspector, Transport Dangerous Goods
800, boul. René-Lévesque ouest
Pièce 638, 6e étage
Montréal, QC H3B 1X9
tel: (514) 496-4293
fax: (514) 283-8234
louis.paielement@tc.gc.ca
www.tc.gc.ca

De : Pascal Prud'homme [<mailto:pprudhomme@sanexen.com>]

Envoyé : lundi, août 31, 2015 8:35 AM

À : Paiement, Louis

Objet : TR: Emballage pour transport maritime de cylindres de gaz comprimé qui ont brûlés

Bonjour M. Paiement, je voulais simplement savoir si vous aviez reçu le courriel présenté plus bas?

Merci!

Pascal Prud'homme B. Sc., M. Env.

Chargé de projets, Restauration de sites



9935, avenue de Catania, Entrée 1 - Bureau 200
Brossard (Québec) J4Z 3V4
T. 450.466.2123
poste 135
F. 450.466.2240

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 **Pensez vert, est-ce nécessaire d'imprimer ce message?**

De : Pascal Prud'homme

Envoyé : 08/27/2015 20:27

À : 'louis.paielement@tc.gc.ca'

Objet : Emballage pour transport maritime de cylindres de gaz comprimé qui ont brûlés

Bonjour M. Paiement, c'est mon collègue Benoit Dion qui m'a donné vos coordonnées. Nous devons emballer pour disposition hors site dans un centre autorisé, via transport maritime, des cylindres de gaz comprimé qui se trouvaient dans un atelier qui a été incendié. Nous aurions besoin de vos conseils pour nous assurer d'effectuer un emballage conforme à la réglementation. Nous pensons être en mesure d'effectuer certaines parties des exigences adéquatement, tel l'étiquetage et la compatibilité, ma demande de conseil concerne l'emballage précisément. J'aimerais préciser que la paroi des cylindres n'est pas endommagée, mis à part que la peinture a parfois brûlé et que les valves ne semblent pas fuir après inspection.

À force de « brainstormer » sur le sujet, nous avons élaboré un moyen d'emballer :

1. On déposerait un cylindre dans un baril UN en acier sans couvercle;
2. On stabiliserait le cylindre par rapport aux parois du baril UN;
3. On pensait aussi sécuriser la valve en faisant passer 2 planches parallèles de 2x4 ou 2x3 de chaque côté de la valve et 2 autres planches parallèles mises perpendiculaires aux 2 premières.

C'est ce qui compléterait le montage de la « crate » (caisse-cadre).

Est-ce une configuration de la caisse-cadre suffisante pour le transport maritime?

Merci d'avance!

Salutations distinguées,

Pascal Prud'homme B. Sc., M. Env.

Chargé de projets, Restauration de sites



9935, avenue de Catania, Entrée 1 - Bureau 200

Brossard (Québec) J4Z 3V4

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 **Pensez vert, est-ce nécessaire d'imprimer ce message?**

APPENDIX K

WEIGHT TICKETS

SCRAP METAL AND NON-HAZARDOUS WASTE

**Scrap Metal
Summary of Weight Tickets
Anmar Maintenance Shop, Milne Inlet (NU)**

DATE	TICKET No.	NET WEIGHT	CONTENTS
2015-11-20	611756	15.43	Container # 496061-3
	611744	16.32	Container # 202087-7 and 213892-1
	611850	16.19	Container # 287409-6 and 788932-6
Sub-Total		47.94	
2015-11-23	612228	23.99	Container # 6314921
	612227	16.7	Container # 9223039
	612232	14.39	Container # 6937796
	612339	19.97	Nacelle
Sub-total		75.05	
2015-11-24	612602	8.28	Conteneur # 926836
	612499	19.65	Conteneur # 1820752
	612556	17.09	Nacelle
Sub-total		45.02	
2015-11-25	612819	15.44	Nacelle
	612714	9.94	Boom Nacelle
Sub-total		25.38	
2015-11-26	612949	14.84	Crushed container
	613057	15.46	Crushed container
Sub-total		30.3	
2015-11-27	613192	15.25	Crushed container
Sub-total		15.25	
TOTAL		238.94	m.t.

**Non-Hazardous Waste
Summary of Weight Tickets
Anmar Maintenance Shop, Milne Inlet (NU)**

DATE	TICKET No.	NET WEIGHT	CONTENTS
2015-11-20	611852	13.46	Container # 123392-4
Sub-Total		13.46	
2015-11-23	612220	5.59	Container # 273080
Sub-total		5.59	
2015-11-24	612489	12.24	Conteneur # 6076337
Sub-total		12.24	
TOTAL		31.29	m.t.

Numéro de pesée

0000611756



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Reference	Pile Origine	Pile Cible	Pars No	Date Transport
CONSTENTIN	L584812	496061-3				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	60,040 lb	29,180 lb	30,860 lb	0 lb	30,860 lb	15.430 TON
	27,234 kg	13,236 kg	13,998 kg	0 kg	13,998 kg	13.998 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.20	12:36:08	2015.11.20	13:23:49		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

PROVENANCE MILNE INLET, NUNAVUT PILE 853

Note

Pro Jet: ANMAR

Signatures:

Date

Numéro de pesée

0000611744



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
POPESCU	L581810	202087-7 213892-1				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	64,200 lb	31,560 lb	32,640 lb	0 lb	32,640 lb	16.320 TON
	29,121 kg	14,315 kg	14,805 kg	0 kg	14,805 kg	14.805 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.20	11:50:25	2015.11.20	13:29:42		
Commande d'Achat	Commande Vente	No. Transport	Livraison			
Remarques						
PROVENANCE MILNE INLET, NUNAVUT PILE 853						

Note

Projet : ANMAR

DC

Signatures:

Date

Numéro de pesée

0000611852



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Vehicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
CONSTENTIN	123392-4					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	56,020 lb	29,100 lb	26,920 lb	0 lb	26,920 lb	13,460 TON
	25,410 kg	13,200 kg	12,211 kg	0 kg	12,211 kg	12,211 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.20	17:35:50	2015.11.20	17:51:34		
Commande d'Achat	Commande Vente	No. Transport	Livraison			
Remarques						
PROVENCANCE MILNE INLET NUNAVUT PILE 853						

Note DC Projet: ANMAR

Signatures:

Date

Numéro de pesée

0000611850



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
POPESCU	XXXX					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure	Total	Total
Pesée Unique	63,900 lb	31,520 lb	32,380 lb	0 lb	32,380 lb	16.190 TON
	28,985 kg	14,297 kg	14,687 kg	0 kg	14,687 kg	14.687 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.20	17:31:28	2015.11.20	17:48:25		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

PROVENANCE MILNE INLET NUNAVUT PILE 853 287409-6 788932-6

Note


 Project: ANMAR



Signatures:

Date

Numéro de pesée

0000612228



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE WAGONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
CONSTANTIN	L581812	6314921				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure	Total	Total
Pesée Unique	77,200 lb	29,220 lb	47,980 lb	0 lb	47,980 lb	23.990 TON
	35,017 kg	13,254 kg	21,763 kg	0 kg	21,763 kg	21,763 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.23	15:42:46	2015.11.23	16:46:12		
Commande d'Achat	Commande Vente	No. Transport	Livraison			
Remarques						
CONTENEUR 6314921-40FT. PROJET ANMAR. MILNE INLET, NUNAVUT						

Note

Signatures:

Date

Numéro de pesée


0000612227




ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE WAGONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARIUS	L581810					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	63,740 lb	30,340 lb	33,400 lb	0 lb	33,400 lb	16,700 TON
	28,912 kg	13,762 kg	15,150 kg	0 kg	15,150 kg	15.150 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.23	15:38:45	2015.11.23	16:42:31		
Commande d'Achat	Commande Vente	No.Transport	Livraison			
Remarques						
CONTENEUR 9223039-40FT PROJET ANMAR. MILNE INLET, NUNAVUT						

Note


Signatures:

Date

Numéro de pesée

0000612232



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE WAGONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
CONSTANTIN	L581812					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure	Total	Total
Pesée Unique	58,280 lb	29,500 lb	28,780 lb	0 lb	28,780 lb	14.390 TON
	26,435 kg	13,381 kg	13,054 kg	0 kg	13,054 kg	13.054 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.23	10:39:01	2015.11.23	11:01:23		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

CONTENEUR 6937796-40FT. PROJET ANMAR, MILNE INLET, NUNAVUT

Note

DC

Signatures:

Date

Numéro de pesée

0000612220



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE WAGONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARIUS	L581810	273080				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	41,820 lb	30,640 lb	11,180 lb	0 lb	11,180 lb	5.590 TON
	18,969 kg	13,898 kg	5,071 kg	0 kg	5,071 kg	5.071 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.23	10:27:40	2015.11.23	10:45:17		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

CONTENEUR 273080-20FT. PROJET ANMMAR, MILNE INLET, NUNAVUT

Note

Signatures:

Date

Numéro de pesée

0000612339



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	76,540 lb	32,600 lb	43,940 lb	4,000 lb	39,940 lb	19.970 TON
	34,718 kg	14,787 kg	19,931 kg	1,814 kg	18,116 kg	18.116 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.23	15:33:56	2015.11.23	16:49:55		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

NASELLE, COUPURE 4000

Projet: SUMAR, nips inlet DOWNVST

Note

DC

Signatures:

Date

Numéro de pesée

0000612602



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE WAGONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
CONSTANTIN	L581812	092683-6				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	45,460 lb	28,900 lb	16,560 lb	0 lb	16,560 lb	8,280 TON
	20,620 kg	13,109 kg	7,511 kg	0 kg	7,511 kg	7,511 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.24	17:32:39	2015.11.24	17:54:37		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

CONTENEUR 0926836. PROJET ANMAR. MILNE INLET, NUNAVUT

Note

DC

Signatures:

Date

Numéro de pesée

0000612489



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
--	-------------

ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
CONSTANTIN	L581812	607633-7				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	53,540 lb	29,060 lb	24,480 lb	0 lb	24,480 lb	12.240 TON
	24,285 kg	13,181 kg	11,104 kg	0 kg	11,104 kg	11.104 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.24	12:36:55	2015.11.24	13:43:25		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

CONTENEUR 6076337, PROJET ANMAR, MILNE INLET NUNAVUT

Note

DC

Signatures:

Date

Numéro de pesée

0000612499



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE WAGONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
POPESCU	L581810	182075-2				
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	69,480 lb	30,180 lb	39,300 lb	0 lb	39,300 lb	19.650 TON
	31,516 kg	13,689 kg	17,826 kg	0 kg	17,826 kg	17.826 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.24	12:34:38	2015.11.24	13:37:34		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques
CONTENEUR 1820752. PROJET ANMAR, MILNE INLET NUNAVUT

Note
PC

Signatures:

Date

Numéro de pesée

0000612556



ArcelorMittal

Division ArcelorMittal Montréal inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur
FERUNI, BALANCE WAGONS			ANDY

Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					

Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total
Pesée Unique	70,700 lb	32,520 lb	38,180 lb	4,000 lb	34,180 lb
	32,069 kg	14,751 kg	17,318 kg	1,814 kg	15,504 kg

Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie
	2015.11.24	14:26:23	2015.11.24	15:10:50

Commande d'Achat	Commande Vente	No. Transport	Livraison
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Remarques

NASELLE POUR SCRAP, COUPURE 4000

Projet: ANMAR, nifve inlet nouveau

Note

Signatures:

Date

Numéro de pesée

0000612819



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	62,980 lb	32,100 lb	30,880 lb	0 lb	30,880 lb	15.440 TON
	28,567 kg	14,560 kg	14,007 kg	0 kg	14,007 kg	14.007 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.25	15:59:46	2015.11.25	16:35:02		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

NACELLE PILE 853

Note

Projet: AMMAR, pile ne va pas devant

Signatures:

Date

Numéro de pesée

0000612714



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	52,120 lb	32,240 lb	19,880 lb	0 lb	19,880 lb	9.940 TON
	23,641 kg	14,624 kg	9,017 kg	0 kg	9,017 kg	9.017 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.25	11:10:22	2015.11.25	11:48:59		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

BOOM DE NACELLE PILE 853

Projet: ANMAR, Pile no 853 Rouvrout

Note

Signatures:

Date

Numéro de pesée

0000612949



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	64,600 lb	34,920 lb	29,680 lb	0 lb	29,680 lb	14.840 TON
	29,302 kg	15,839 kg	13,463 kg	0 kg	13,463 kg	13.463 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.26	11:16:04	2015.11.26	11:57:12		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

VIEUX CONTAINEUR QUI ON PASSÉ AU FEU PILE 853

Note

Signatures:

Date

Numéro de pesée

0000613057



ArcelorMittal

Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	66,680 lb	35,760 lb	30,920 lb	0 lb	30,920 lb	15.460 TON
	30,246 kg	16,220 kg	14,025 kg	0 kg	14,025 kg	14.025 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.26	16:39:14	2015.11.26	17:47:11		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

CONTAINEUR QUI ONT PASSÉ AU FEU PILE 853

Note

Signatures:

Date

Numéro de pesée

0000613192



Division ArcelorMittal Montréal Inc. Feruni 3185 Route Marie Victorin CONTRECOEUR QC J0L 1C0 CANADA	Fournisseur
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ID Balance	Article	Description Article	Transporteur			
FERUNI, BALANCE CAMIONS			ANDY			
Chauffeur	Numéro Véhicule	Référence	Pile Origine	Pile Cible	Pars No	Date Transport
MARTIN	L678828					
Code Act	Poids Entrée	Poids Sortie	Poids Net	Coupure Total	Total	
Pesée Unique	66,900 lb	35,900 lb	31,000 lb	500 lb	30,500 lb	15.250 TON
	30,345 kg	16,284 kg	14,061 kg	227 kg	13,835 kg	13.835 TO
Information	Date entrée	Heure d'entrée	Date sortie	Heure de Sortie		
	2015.11.27	10:55:36	2015.11.27	11:49:30		
Commande d'Achat	Commande Vente	No.Transport	Livraison			

Remarques

CONTENEURS BRULES, COUPURE REBUT

Note

Projet: AMMAR, Milne, inlet No. 1000

Signatures:

Date

APPENDIX L

CERTIFICATE OF DISPOSAL HAZARDOUS WASTE

Certificat de traitement des matières résiduelles dangereuses

Nom du client:

Baffinland Iron Mines - Mary River Proj.

Adresse:

2775, Upper Middle Road
Oakville, ON, CANADA
L6H 0C3

Tel.: (416) 364-8820 po

Fax:

Description du produit	Code	Qte	Format	Poids KG
Lead battery	E15-8.0-S	1,00	OVER-SIZE	171,00
Ashes	E08-0.0-S	1,00	OVER-SIZE	216,00
Ashes	E08-0.0-S	1,00	OVER-SIZE	215,00
Ashes	E08-0.0-S	2,00	OVER-SIZE	512,00
Oily contaminated sorbent	L03-0.0-S	1,00	OVER-SIZE	221,00
Oily contaminated sorbent	L03-0.0-S	1,00	OVER-SIZE	144,00
Used grease	A04-0.0-P	1,00	OVER-SIZE	164,00
Paint related material	C02-3.0-L	1,00	OVER-SIZE	79,00
Trichloroéthylène	C01-6.1-L	1,00	OVER-SIZE	95,00
Paint related material	C02-3.0-L	1,00	OVER-SIZE	120,00
Diesel	C02-3.0-L	2,00	OVER-SIZE	394,00
Organic paint sludge	B09-0.0-P	1,00	OVER-SIZE	291,00
Inorganic solid	E22-0.0-S	1,00	OVER-SIZE	181,00
Paint related material	C02-3.0-L	1,00	OVER-SIZE	255,00
Used oil -10%	A01-0.0-L	1,00	TOTE	613,00

Ce document certifie que les produits mentionné au bon de connaissance de Solva-Rec Environnement Inc. ci-haut mentionné ont été reçu et que la disposition de ces produits se fera selon les normes environnementales en vigueur pour le traitement des matières résiduelles dangereuses.

This document certifies that the products mentioned in the Solva-Rec Environnement Inc. bill of lading number listed above were receiving and disposed of in accordance with environmental laws now in effect for the treatment of dangerous residual materials.

Éric Benoit, Chimiste / Sébastien Leclerc, Chimiste



27/11/2015

Date



Certificat de traitement des matières résiduelles dangereuses

Nom du client:

Baffinland Iron Mines - Mary River Proj.

Adresse:

2775, Upper Middle Road
Oakville, ON, CANADA
L6H 0C3

Tel.: (416) 364-8820 po

Fax:

Description du produit	Code	Qte	Format	Poids KG
Propane	M07-2.1-G	5,00	UNITE	523,00
Fire extinguisher	M07-2.2-G	1,00	QUATREX	104,00
Flammable aerosol	M07-2.1-G	1,00	QUATREX	91,00
Acétylène dissous	M07-2.1-G	1,00	UNITE	319,00
Compressed oxygen	M07-2.2-G	3,00	UNITE	322,00

Ce document certifie que les produits mentionné au bon de connaissance de Solva-Rec Environnement Inc. ci-haut mentionné ont été reçu et que la disposition de ces produits se fera selon les normes environnementales en vigueur pour le traitement des matières résiduelles dangereuses.

This document certifies that the products mentioned in the Solva-Rec Environnement Inc. bill of lading number listed above were receiving and disposed of in accordance with environmental laws now in effect for the treatment of dangerous residual materials.

Éric Benoit, Chimiste / Sébastien Leclerc, Chimiste



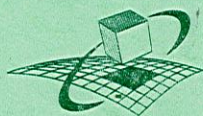
Date

30/11/2015



APPENDIX M

CERTIFICATE OF DISPOSAL CONTAMINATED SOILS



HORIZON ENVIRONNEMENT INC.
120, Route 155
Grandes-Piles (Québec) G0X 1H0
Tél. : 1-800-545-7657 • (819) 538-3921
Fax : (819) 538-0889
MANON THIEFFAULT (()) -

BILLET

N° T.P.S. : 140578741 RT

N° T.V.Q. : 1017578304

N° DU BILLET :

92580

N° DU CONTRAT :

CHE-2784

BON DE COMMANDE :

DATE :

2015-11-27

HEURE ENTRÉE :

08:01

HEURE SORTIE :

08:28

Produit (001-C) SOLS CONTAMINÉS CELLULE

No Client

3ANE-001

ZONE DE DÉCHARGEMENT : (C-2) CELLULE 2A

DÉTAIL DES PRIX

POIDS BRUT :

54420 Kg

TARE :

20170 Kg

POIDS NET :

34250 Kg

CLIENT

SANEXEN SERVICES ENVIRONNEMENTAUX
9935, AVENUE CATANIA, BUREAU 200
BROSSARD, QUEBEC
J4Z 3V4

TÉL.

GUYANA

BAFFINLAND IRON MINES
2275, UPPER MIDDLE ROAD EAST,
OAKVILLE, ONTARIO
L6H 0C3

TÉL.

TRANS

LAIDLAW CARRIERS INC.
1179 RIDGEWAY ROAD,
WOODSTOCK, ON
N438P6

TÉL.

NO PRÉAVIS

BON DE TRAVAIL

COURTIER

N° D'IMMATRICULATION : (L644535) LAIDLAW, CHICOUTIMI

MANIFEST (Can)

MANIFEST (US)

N° DE CONNAISSANCE :

07h57

DÉCLARATION DU TRANSPORTEUR :

Je déclare que tous les renseignements ci-dessus sont véridiques et que le contenu de ma cargaison ne contient aucune matière dangereuse tel que défini par le Règlement sur les matières dangereuses du Québec.

Nom

(CARACTÈRE D'IMPRIMERIE)

Signature

097260

COPIE CLIENT



HORIZON ENVIRONNEMENT INC.
120, Route 155
Grandes-Piles (Québec) G0X 1H0
Tél. : 1-800-545-7657 • (819) 538-3921
Fax : (819) 538-0889
MANON THIFFEAULT (()) -

BILLET

N° T.P.S. : 140578741 RT

N° T.V.Q. : 1017578304

N° DU BILLET :

92582

N° DU CONTRAT :

CHE-2784

BON DE COMMANDE :

DATE :

2015-11-27

HEURE ENTRÉE :

08:02

HEURE SORTIE :

08:37

Produit (001-C) SOLS CONTAMINÉS CELLULE

No Client

3ANE-001

ZONE DE DÉCHARGEMENT : (C-2) CELLULE 2A

DÉTAIL DES PRIX

POIDS BRUT :

54350 Kg

TARE :

20190 Kg

POIDS NET :

34160 Kg

CLIENT

SANEXEN SERVICES ENVIRONNEMENTAUX
9935, AVENUE CATANIA, BUREAU 200
BROSSARD, QUEBEC
J4Z 3V4

TÉL.

NUMÉRIQUE

BAFFINLAND IRON MINES
2275, UPPER MIDDLE ROAD EAST,
OAKVILLE, ONTARIO
L6H 0C3

TÉL.

TRANSMISSION

LAIDLAW CARRIERS INC.
1179 RIDGEWAY ROAD,
WOODSTOCK, ON
N4S8P6

TÉL.

NO PRÉAVIS

BON DE TRAVAIL

COURTIER

N° D'IMMATRICULATION : (L644534) LAIDLAW, CHICOUTIMI

MANIFEST (Can)

MANIFEST (US)

N° DE CONNAISSEMENT :

DÉCLARATION DU TRANSPORTEUR :

Je déclare que tous les renseignements ci-dessus sont véridiques et que le contenu de ma cargaison ne contient aucune matière dangereuse tel que défini par le Règlement sur les matières dangereuses du Québec.

Nom

Jean-François Lefebvre

(CARACTÈRE D'IMPRIMERIE)

Signature

JF Lefebvre

097262

COPIE CLIENT