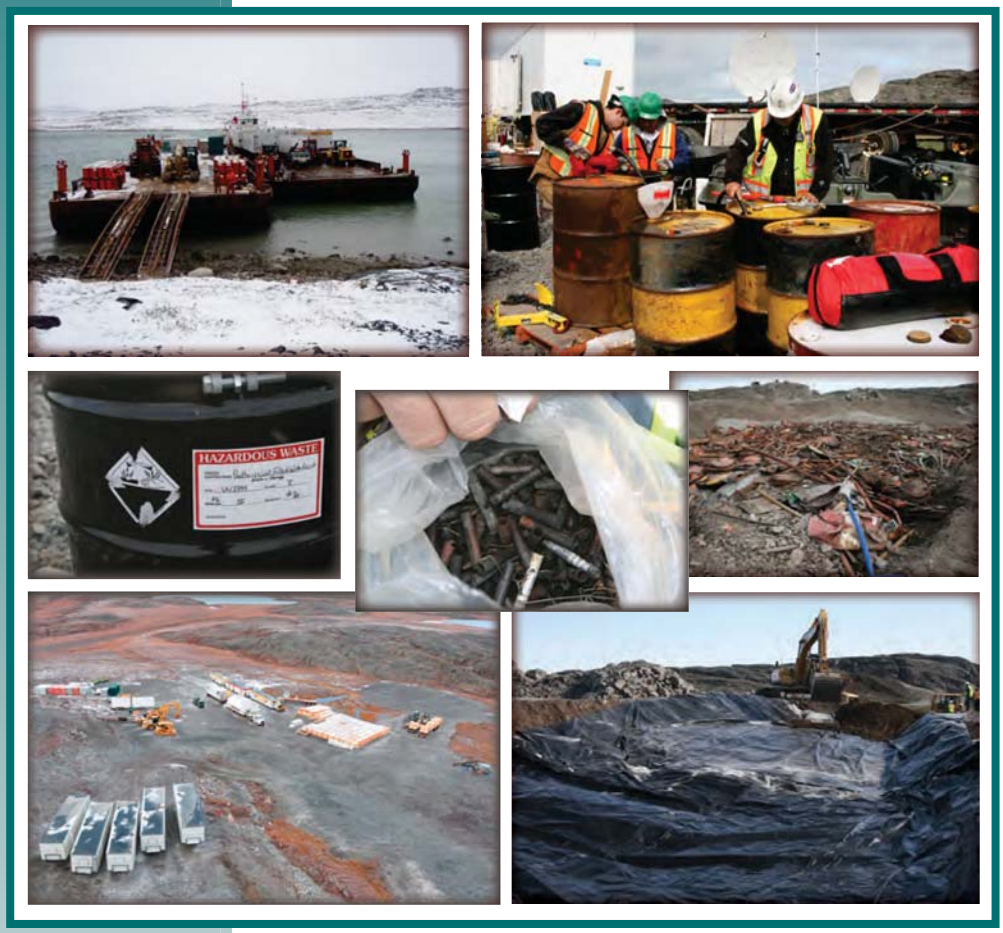
Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

RECEIVED
By License Administrator at 2:03 pm, May 05, 2011

Completion Report for Roberts Bay and Ida Bay Mine Sites Site Remediation Program, Nunavut



FEBRUARY 2011

Compiled by

SENES Consultants Limited
Specialists in Energy, Nuclear and Environmental Sciences

In Association with LB Engineering

QUANTUM MURRAY

Completion Report
for
Roberts Bay and Ida Bay Mine Sites
Site Remediation Program, Nunavut

Indian and Northern Affairs Canada

and

Public Works and Government Services Canada

February 2011

SENES Consultants Limited

In association with

LB Engineering
Quantum Murray LP

EXECUTIVE SUMMARY

This Completion Report presents a summary of the remediation works completed at the Roberts Bay and Ida Bay Mine sites during the 2009 and 2010 field seasons. The Remediation Project consisted of the installation of mine seals at the respective openings, re-grading of waste rock to fill in low lying areas and other depressions, placement of a waste rock cap over the former domestic landfill, removal of waste rock from below the high water mark along the shoreline to Melville Sound, demolition of abandoned structures, consolidation and containerization of hazardous waste, relocation and containment of non-hazardous debris and waste within a solid waste management facility, mitigation of chemical impacts in the subsurface at discrete locations on-site, and construction of a solid waste management facility within the limits of the former tailings containment area to provide suitable cover over the tailings.

Quantum Murray LP (QMLP) was selected as the prime contractor. Heavy equipment, materials, and supplies were mobilized to Ida Bay via barge which originated in Hay River, over the summer of 2008 with off-loading at the site in October 2008. Upon completion of some blasting work at the Ida Bay Adit, all equipment, materials, and supplies were relocated to the Roberts Bay Mine site in April 2009 in advance of the 2009 field season. The remediation activities at Roberts Bay commenced on July 22, 2009 and were completed by September 6, 2009. During the course of this work QMLP crews mobilized back to Ida Bay to complete debris clean-up work at this site. The demobilization of the camp, containers and equipment from the Roberts Bay site to the Ida Bay site took place between April 21-30, 2010. The final clean-up of the Ida Bay site was completed during the summer of 2010 (July 21-26, 2010). The demobilization, via barge, from the Ida Bay site took place between August 22-24, 2010.

Representatives of the local Inuit community were involved throughout the decision making process of the project. The evaluation criteria for the contract award included requirements of an Inuit Benefits Plan to ensure continued involvement of Inuit people during the implementation stage of the Remediation Plan. QMLP maintained an average of 62.53% Inuit staff during this contract and provided over 1525 hours of training to Inuit staff on various topics such as personal health and safety, workplace safety, and hazardous materials management. Unfortunately, due to inclement weather, site tours with the community were not held at the end of the 2009 or the 2010 field seasons.

The following briefly describes the major activities completed as part of the remediation program:

- Access to the Underground –horizontal openings were initially blasted and backfilled with local waste rock materials while the previously capped vent raise at Roberts Bay was covered with waste rock.
- Site Infrastructure and Potential Physical Hazards – buildings and other miscellaneous structures were demolished and disposed of on-site in a non-hazardous solid waste management facility.

- Waste Rock was utilized on-site as required to complete the backfill work and general re-grading of the respective mine sites. In addition waste rock located within the tidal zone at the Ida Bay Mine site was also recovered and graded back above the high tide mark.
- Non-hazardous and hazardous wastes were consolidated with non-hazardous materials being transferred to the solid waste management facility on-site and hazardous materials containerized and transferred off-site for disposal in 2010.
- An engineered tailings cover, which also included the solid waste management facility, was constructed on-site within the limits of the former tailings containment area so as to ensure that the tailings contained therein would remain in a frozen state.

TABLE OF CONTENTS

PAGE

EXECUTIVE SUMMARY

1.0 INTRODUCTION 1-1
- 1.1 Background 1-1
- 1.2 Summary of Remediation Plan 1-2
- 1.3 Remediation Team 1-3

2.0 INUIT INVOLVEMENT 2-1
- 2.1 Community Involvement 2-1
- 2.2 Inuit Content 2-4
- 2.3 Training 2-4
- 2.4 Local Benefit 2-5

3.0 REMEDIATION ACTIVITIES 3-1
- 3.1 Selection of Remediation Contractor 3-1
- 3.2 Remediation Overview 3-1
- 3.3 Work Site Health and Safety 3-6
  - 3.3.1 Personal Protective Equipment (PPE) 3-7
  - 3.3.2 Health and Safety Training 3-7
  - 3.3.3 Safety Inspections 3-7
  - 3.3.4 Wildlife Safety 3-8
- 3.4 Specific Remediation Components 3-9
  - 3.4.1 Access to Underground 3-9
    - 3.4.1.1 Ida Bay Adit 3-9
    - 3.4.1.2 Roberts Bay Adits 3-9
  - 3.4.2 Site Infrastructure and Potential Physical Hazards 3-10
    - 3.4.2.1 Structures 3-10
    - 3.4.2.2 Miscellaneous Equipment 3-11
    - 3.4.2.3 Miscellaneous Scrap 3-12
  - 3.4.3 Contaminated Areas 3-13
    - 3.4.3.1 Hazardous Materials 3-13
    - 3.4.3.2 Metal Impacted Soils 3-14
    - 3.4.3.3 Petroleum Hydrocarbon Impacted Soils 3-15
    - 3.4.3.4 Shoreline Waste Rock 3-20
    - 3.4.3.5 Landfill on Tailings Pond 3-20

4.0 REGULATORY REQUIREMENTS 4-1
- 4.1 Water Licence 4-1
- 4.2 Land Use Permit 4-10
- 4.3 Quarry Permit 4-10
- 4.4 Burn Permit 4-10
- 4.5 Spill Reporting 4-11

5.0 SUMMARY 5-1

TABLE OF CONTENTS

(Continued) **PAGE**

LIST OF TABLES

1 Project Team
2 Inuit Employment Summary
3 Summary of Inuit Training Initiatives
4 Local Northern Suppliers
5 Summary of Remediation Activities
6 Project Schedule
7 Summary of Wildlife Sightings
8 Summary of Metals Verification Testing
9 Summary of Petroleum Hydrocarbon Verification Testing
10 Required Submissions
11 Summary of Borrow Material Volumes
12 Summary of Containerized Hazardous Materials
13 Summary of Water Monitoring
14 Summary of NWB Licence Information Requirements
15 Summary of Landuse Permit Information Requirements

LIST OF FIGURES

1 Roberts Bay and Ida Bay Overall Site Plan
2 Roberts Bay and Ida Bay Overall Remedial Works
3 Ida Bay Remedial Works
4 Roberts Bay Remedial Works
5 Ida Bay Mine Opening As-Built Plan
6 Roberts Bay Mine Opening Adit #1 As-Built Plan
7 Roberts Bay Mine Opening Adit #2 and Vent Raise As-Built Plan
8 Roberts Bay Site Grading Post Remediation Works
9 Roberts Bay Metals and Petroleum Hydrocarbon Soil Remediation Works
10 Roberts Bay TCA Landfill As-Built Plan
11 Roberts Bay TCA Landfill As-Built Sections

LIST OF APPENDICES

A Technical Supporting Documents
B Daily Reports (See CD-ROM)
C Permitting, Licensing and Reporting
D Site Photographs

TABLE OF CONTENTS

(Continued) **PAGE**

LIST OF PHOTOGRAPHS (in Appendix D)

Photograph No. 1: Barge Off-Loading at Ida Bay 2008
Photograph No. 2: Mobilization of Equipment to Roberts Bay from the Ida Bay Mine Site
Photograph No. 3: Mobilization of Material and Supplies to Roberts Bay
Photograph No. 4: Ida Bay Site Conditions at end of 2009 Field Season
Photograph No. 5: Roberts Bay Site Conditions at End of 2009 Field Season
Photograph No. 6: Roberts Bay Site Conditions at End of 2009 Field Season Looking West
Photograph No. 7: Roberts Bay Site Conditions at End of 2009 Field Season Looking East
Photograph No. 8: Roberts Bay Site Conditions at End of 2009 Field Season Looking Northwest
Photograph No. 9: Adit at Ida Bay Prior to Blasting
Photograph No. 10: Adit at Ida Bay Graded Post Blasting
Photograph No. 11: Adit #1 at Roberts Bay Prior to Blasting (24 July 2009)
Photograph No. 12: Adit #1 at Roberts Bay Post Blasting and Backfilling (7 August 2009)
Photograph No. 13: Adit #2 at Roberts Bay Prior to Blasting (26 July 2009)
Photograph No. 14: Adit #2 at Roberts Bay Post Blasting and Backfilling (13 August 2009)
Photograph No. 15: Vent Raise at Roberts Bay Prior Remediation
Photograph No. 16: Vent Raise at Roberts Bay Final Cover
Photograph No. 17: Former Camp Area Prior to Remediation
Photograph No. 18: Former Camp Area Post Remediation
Photograph No. 19: Mill Area Prior to Remediation
Photograph No. 20: Mill Area Post Remediation
Photograph No. 21: Garage Area Prior to Remediation
Photograph No. 22: Garage Area Post Remediation
Photograph No. 23: Pump House Area Prior to Remediation
Photograph No. 24: Pump House Area Post Remediation
Photograph No. 25: Equipment at Roberts Bay Mine Site
Photograph No. 26: Equipment at Roberts Bay Mine Site
Photograph No. 27: Equipment at Roberts Bay Mine Site
Photograph No. 28: Equipment at Roberts Bay Mine Site
Photograph No. 29: Scrap Metal and Debris at Ida Bay Mine Site
Photograph No. 30: Scrap Metal and Debris at Ida Bay Mine Site
Photograph No. 31: Scrap Metal and Debris at Ida Bay Mine Site
Photograph No. 32: Scrap Metal and Debris at Ida Bay Mine Site
Photograph No. 33: Scrap Metal and Debris at Roberts Bay Mine Site
Photograph No. 34: Scrap Metal and Debris at Roberts Bay Mine Site
Photograph No. 35: Scrap Metal and Debris at Roberts Bay Mine Site
Photograph No. 36: Scrap Metal and Debris at Roberts Bay Mine Site
Photograph No. 37: Hazardous Materials at Ida Bay Mine Site
Photograph No. 38: Hazardous Materials at Roberts Bay Mine Site

TABLE OF CONTENTS

(Continued) **PAGE**

Photograph No. 39: Hazardous Materials at Roberts Bay Mine Site
Photograph No. 40: Hazardous Materials at Roberts Bay Mine Site
Photograph No. 41: Hazardous Materials at Roberts Bay Mine Site
Photograph No. 42: Hazardous Materials at Roberts Bay Mine Site
Photograph No. 43: Hazardous Materials at Roberts Bay Mine Site
Photograph No. 44: Hazardous Materials at Roberts Bay Mine Site
Photograph No. 45: Metal Impacted Soil Remediation at the Mill Area of Roberts Bay
Photograph No. 46: Petroleum Hydrocarbon Remediation at the Mill Area of Roberts Bay
Photograph No. 47: Petroleum Hydrocarbon Remediation at the Mill Area of Roberts Bay
Photograph No. 48: Petroleum Hydrocarbon Remediation at the POL Area of Roberts Bay
Photograph No. 49: Petroleum Hydrocarbon Remediation at the POL Area of Roberts Bay
Photograph No. 50: Petroleum Hydrocarbon Remediation at the POL Area of Roberts Bay
Photograph No. 51: Petroleum Hydrocarbon Remediation at Garage Area of Roberts Bay
Photograph No. 52: Petroleum Hydrocarbon Remediation at Garage Area of Roberts Bay
Photograph No. 53: Petroleum Hydrocarbon Remediation at Garage Area of Roberts Bay
Photograph No. 54: Petroleum Hydrocarbon Remediation at Garage Area of Roberts Bay
Photograph No. 55: Petroleum Hydrocarbon Remediation at the Drum Area of Roberts Bay
Photograph No. 56: Petroleum Hydrocarbon Remediation at the Drum Area of Roberts Bay
Photograph No. 57: Petroleum Hydrocarbon Sample Location ET1101 at Roberts Bay
Photograph No. 58: Tailings Containment Area Prior to Remediation Work
Photograph No. 59: Tailings Containment Area Prior to Remediation Work
Photograph No. 60: Landfill (SWMF) During Construction Looking South Along Berm
Photograph No. 61: Landfill (SWMF) During Construction Looking Southeast
Photograph No. 62: Landfill (SWMF) During Construction (Placement of Geotextile)
Photograph No. 63: Placement of Non-Hazardous Debris into SWMF
Photograph No. 64: Decanting Water Above Tailings to Dry Side of SWMF
Photograph No. 65: Capping of Debris in SWMF During Construction
Photograph No. 66: Placement of Liner Inside SWMF During Construction
Photograph No. 67: Landfill (SWMF) During Construction
Photograph No. 68: Final Surface of Landfill (SWMF)
Photograph No. 69: Final Surface of Landfill (SWMF)
Photograph No. 70: Final Surface of Landfill (SWMF)
Photograph No. 71: Final Surface of Landfill with Thermistors
Photograph No. 72: Thermistor Installation
Photograph No. 73: Thermistor Installation
Photograph No. 74: Demobilization from Roberts Bay in April 2010
Photograph No. 75: Demobilization from Ida Bay in August 2010
Photograph No. 76: Aerial of Ida Bay August 2010
Photograph No. 77: Aerial of Roberts Bay August 2010

1.0 INTRODUCTION

1.1 BACKGROUND

The Roberts Bay Mine and Ida Bay Mine remediation sites are located in Nunavut approximately 115 km southwest of Cambridge Bay at a longitude and latitude of 68º 10' 45"N by 106º 33' 29" W. The Roberts Bay mine site is located approximately 1 km north of Roberts Lake while the Ida Bay Mine site is located approximately 6.2 km north northeast of the Roberts Bay Mine site. The individual mine sites are situated on a relatively small parcel of land within the ORO claim region that is surrounded by Inuit Owned Lands in close proximity to Melville Sound on the Arctic Ocean (See Figure 1).

The Roberts Bay area was first staked by the Roberts Mining Company Ltd. in 1964 and silver was discovered at the Roberts Bay site in 1965. Further investigation in the area revealed silver at the Ida Bay Mine site in 1966. Between 1967 and 1972 the Hope Bay Silver Syndicate conducted exploration activities including drilling, trenching, and mapping across the area. In 1973 mining equipment was mobilized to the Ida Bay Mine site with 10,000 ounces of high grade silver recovered from the ore mined from underground and shipped off-site for metal recovery. The Roberts Bay deposit produced 10 tons of hand sorted ore.

In 1974 the Roberts Bay Mine was upgraded by a joint venture group lead by Hope Bay Mines Ltd. A small 50 to 75 ton/day grinding–flotation mill was constructed at the Roberts Bay site which yielded a total of 74,500 ounces of silver in the form of flotation concentrates between 1974 and 1975 when operations ceased. Given that the flotation concentrates were shipped off site for metal recovery it is believed that no leaching, smelting or refining activities took place at the Roberts or Ida Bay Mine sites.

Further exploration in the area of the Ida and Roberts Bay Mine sites continued throughout the 1980's and 1990's. In 1997 the Roberts Mining Lease was surrendered back to Indian and Northern Affairs Canada (INAC) however in 1998 the ground was re-staked as the ORO 5 claim.

Upon abandoning the respective mine sites, miscellaneous structures, equipment and debris related to camp and mine operations were left on-site. The mine openings at the respective sites were left to flood. The tailings containment area (TCA), at the Roberts Bay site, was also left uncovered and surface water runoff allowed to collect in the TCA depression. With the exception of the vent raise at Roberts Bay that was concrete capped, no formal decommissioning work was completed at the site.

Access to the site is predominantly by barge or air (using float plane or helicopter); it is through these means that there could be material and personnel servicing to the site. Ground access via a winter road, across the bedrock ridge between the two mine sites, is available during the winter months as well as an all-terrain vehicle path available in the summer months.

The Roberts/Ida Bay Mine area is characterized by the barren lands with rugged relief up from the shores of Melville Sound and Roberts Lake. The Ida Bay site is located in close proximity to

the Melville Sound shoreline. The Roberts Bay site is located on a ridge. Both sites have some sparse vegetation present on the lands surrounding the bedrock outcroppings in the area.

The final version of the Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan was prepared in January 2007 by AMEC and was the result of a multi-year process that included the results of environmental site investigations, human health and ecological risk assessments studies and integrated scientific principles, traditional knowledge research and community values in a thoughtful, respectful and cooperative manner. Remediation considerations and concepts were developed under the guidance and with the support of the local Inuit community and in association with Public Works and Government Services Canada (PWGSC) and INAC.

1.2 SUMMARY OF REMEDIATION PLAN

The main elements of the Roberts Bay and Ida Bay 2007 Remediation Plan (as modified in a letter from INAC dated 9 February 2009) included activities associated with the underground mines; the site infrastructure and potential physical hazards; waste rock; non-hazardous and hazardous waste; and petroleum and metals impacted soils and tailings containment. A summary of the proposed remediation actions are listed below:

Access to the Underground

- Ida Bay Adit – collapse the roof of the adit and backfill the balance of the opening with local waste rock.
- Ida Bay Vent Raise – fill with waste rock
- Ida Bay exploration trenches – fill with waste rock
- Roberts Bay Adits - collapse the roof of the adit and backfill the balance of the opening with local waste rock.
- Roberts Bay Vent Raise – cover the concrete cap previously installed on the site with local waste rock.

Site Infrastructure and Potential Physical Hazards

- Dismantle the existing structures at the Ida and Roberts Bay sites in preparation for on-site or off-site waste management.

Waste Rock

- Utilize where required for cover and erosion control primarily at the respective mine adits, the Tailings Pond (also referred to as the Solid Waste Disposal or Management Facility) and to grade out areas of other remediation works.
- Remove waste rock from the shoreline above the high tide mark at the Ida Bay site.

Non-hazardous and Hazardous Wastes

- Containerize all hazardous wastes at the respective sites and prepare for off-site disposal at an appropriate waste disposal facility.
- Consolidate the non-hazardous waste at the Roberts Bay site and transfer the debris to the Tailings Pond for disposal in the Solid Waste Management Facility (SWMF). Waste debris within the former camp landfill is to be covered with site derived borrow material.
- Consolidate the non-hazardous waste at the Ida Bay site and place the material within the adit depression prior to placement of the final adit cover using site derived borrow material.

Petroleum and Metals Impacted Soils

- Petroleum impacted soils from the former petroleum fuel storage compound, garage and mill areas are to be contained and shipped off-site for disposal.
- Metal impacted soils from the former mill area were to be contained and shipped off-site for disposal.

Tailings Pond (Tailings Containment Area)

- The Tailings Pond at Roberts Bay will be the location of the non-hazardous materials landfill (Solid Waste Management Facility - SWMF) on-site. The cap for the landfill will also double as the tailings cover. The remedial work would involve the removal of surface water; consolidation of tailings from outside the Tailing Pond area into the Tailings Pond; increase the size of the supporting earth embankments around the perimeter of the Tailings Pond; and upon placement of non-hazardous site debris place a 2 m waste rock cap over the Tailings Pond.
- Install thermistors to monitor the permafrost levels within the tailings.

1.3 REMEDIATION TEAM

Table 1 lists the agencies and companies involved in the design, construction and execution of the project.

Table 1: Project Team

Element	Agency or Company	Responsible Person
Site Custodian/Project Owner	Indian and Northern Affairs Canada NU Region	Dele Morakinyo, PhD., P.Eng. INAC Project Manager
Project Manager	Public Works and Government Services Canada (Edmonton, AB)	Matthew McElwaine, P.Eng. PWGSC Project Manager
Contractor	Quantum Murray LP (Vancouver, BC)	Vijay Lanji Project Manager (Contractor)
Departmental Representative	SENES Consultants Limited (Richmond Hill, ON)	Charles Gravelle, P.Eng. Project Manager (SENES)
On-site Quality Assurance	SENES Consultants Limited (Yellowknife, NT) LB Engineering (Edmonton, AB)	Henry Wong, P.Eng. (Site Engineer) Lawrence Borowski, P.Eng (Site Engineer)

2.0 INUIT INVOLVEMENT

2.1 COMMUNITY INVOLVEMENT

Approach to Consultation

The nearest community to the Roberts Bay and Ida Bay Silver Mine sites is Cambridge Bay, Nunavut. The site is located approximately 115 kilometres southwest of Cambridge Bay. Consequently, since the start of the project there has been strong and growing relationship between the INAC/PWGSC officials and the various groups in the Hamlet of Cambridge Bay.

Active consultations have been made by PWGSC/INAC with the regional Inuit Association (Kitikmeot Inuit Association (KIA)), the Ekaluktutiak Hunters and Trappers Organization (HTO), the Cambridge Bay Mayor and the Hamlet Council, and the Cambridge Bay Community Members. These consultations have taken various forms such as letters/e-mail communications, telephone conversations, site visits with community members, and public meetings in the Hamlet of Cambridge Bay.

At the inception of the project in 2005/2006, visits were made to the site by representatives of KIA, HTO, Cambridge Bay Hamlet members and INAC/PWGSC. Through these visits and other meetings, INAC/PWGSC representatives obtained local perspectives on the mine site's previous use and site restoration priorities. Similar meetings and consultations (details below) have continued to this stage of the project and are planned to continue to the end of the project.

It was the goal of this project to maximize Inuit businesses, and the employment and training of Inuit people of the neighboring community (Cambridge Bay) during the course of executing this project. Contract tenders included requirements for maximizing community involvement and supporting Inuit employment and business development. The successful contractor, Quantum Murray LP, is being assessed based on the Inuit Employment and Business commitment made during the tendering process. The contractor may be eligible for some incentive if assessed to meet and exceed the commitments, or otherwise will be penalized. The contractor made significant efforts and achieved 62.53% Inuit Employment and 67.94% Inuit Business contents respectively (more details below).

As part of the Roberts and Ida Bay Remediation Project, the contractor developed and delivered an Inuit Capacity Development Training Program for local Inuit workers during the FY 2009-10. The aim of the training program is to enhance the skills of the workers for the execution of the current project and maximize the workers' employment opportunities in similar future projects. Funding for the training was provided by INAC (more details below).

Community Meetings

Four (4) community meetings were held on the project in Cambridge Bay. These meetings included: Draft RAP presentation meeting; site remediation kick-off meeting, Inter-season project update community meeting and the final project completion community meeting.

The Draft RAP presentation meeting was held on August 30 and 31, 2006 in Cambridge Bay. The meeting was held to present the draft RAP to the community and to obtain community's suggestions, concerns or questions and incorporate these into the final RAP. The meeting was attended by Dele Morakinyo (INAC), Jared Buchko (PWGSC), four members of the Ekaluktutiak Hunters and Trappers Organization (HTO), two officials of the Kitikmeot Inuit Association (KIA), one official of Nunavut Tunngavik Inc (NTI) Cambridge Bay, one reporter each from CBC Radio and News North Cambridge Bay, an elder from the community and several community members.

The site remediation kick-off meeting was held on July 16, 2008 and was attended by: Dele Morakinyo (INAC); Matthew McElwaine (PWGSC); Vijay Lanji, Ron Bosel, John Weigel and Peter Yip (Quantum Murray LP). Community members were provided an overview of the project, including background and scope of work, as well as an opportunity to ask questions or express any concerns they may have had. The community members were also provided with information on available jobs and businesses on the project and how they could benefit from these.

The end of the first construction season's community meeting was held on September 22, 2009 and was attended by Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Vijay Lanji and Gavin Domitter (Quantum Murray LP). Community members were provided updates on project progress; what was done in the previous year (summer 2009) and what is planned to be done in the year ahead (2010). An overview of the INAC's Capacity Building Training Program delivered by Quantum Murray LP in April 2009 was also given, and illustrated the link between the training and the work completed on-site. Thirty-five community members attended the meeting; a significant increase over the site remediation kick-off community meeting, likely due to the opportunity to engage the community through the training program and the summer work. This assumption was based on the number of attendees that were training participants or family members of crew. No issues were raised.

The final community meeting was held on September 30, 2010 and was attended by: Dele Morakinyo (INAC); Matthew McElwaine (PWGSC); Vijay Lanji, Ron Bosel, John Weigel and Gavin Domitter (Quantum Murray LP). Community members were provided an overview of the work completed since the last community meeting, as well as an overview of the entire project. The community members were informed of the completion of the project and of the Crown's plan to carry out a long term monitoring program (of up to 25 years) to ensure the stability of the landfill structure constructed at the site. Twenty eight members from the community and one reporter attended the meeting.

Community Coordinator

QMLP retained the services of local Inuit community members to aid them with the hiring of staff from Cambridge Bay and other community and crew relations, for the remedial works program at Roberts Bay and Ida Bay. Ikey Evalik was an Inuit Community Coordinator from May 11, 2009 to April 30, 2010 while a second Community Coordinator, Joe Otokiak, was hired on November 11, 2009 to December 1, 2010, and he assisted with off season activities including winter security patrols. Richard Ekpakohak was hired on in Ikey's absence and remained on the project to the end (December 1, 2010).

Site Tours

A total of six (6) site tours have been completed to date. The first three were conducted prior to the commencement of site remediation work, two during the 2009 remediation work, and a final site tour during the demobilization of equipment and materials from the Ida Bay site in 2010.

The first site visit was made on August 30, 2006. The purpose of this site visit was to take contractors that were interested in bidding for the project to the site. The site visit was attended by Dele Morakinyo (INAC), Jared Buchko (PWGSC), Janet McLean (PWGSC) and about 7 potential contractors. The team visited and toured both the Roberts Bay site and the Ida Bay site.

The second site tour on September 24, 2007, was attended by Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Vijay Lanji and Ron Bosel (QMLP). This included ground tours of both the Roberts Bay and Ida Bay site.

The third site tour on July 16, 2008, was attended by Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Vijay Lanji, Ron Bosel, Peter Yip (QMLP), John Weigel (SDS) and Archie Emblau (Neyo Drilling and Blasting). This included ground tours of both the Roberts Bay and Ida Bay site.

A site visit (fourth) was also conducted by Matthew McElwaine (Public Works & Government Services Canada) and Vijay Lanji (Quantum Murray LP) on August 6, 2009 during the summer remediation program.

The fifth site tour, on September 22, 2009 was attended by Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Vijay Lanji and Gavin Domitter (QMLP). This included a ground tour of the Roberts Bay site only.

The sixth and final site tour on August 23, 2010 was attended by Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Charles Gravelle (SENES Consultants Ltd.), Vijay Lanji, John Weigel and Gavin Domitter (Quantum Murray LP).

Future site visits will be to the Roberts Bay site in connection with the INAC's Long Term Monitoring (LTM) program. INAC has developed a LTM program for Roberts Bay and Ida Bay sites. Under the LTP program, up to seven site visits is anticipated from 2010 to 2034.

2.2 INUIT CONTENT

Upon the approval of the Remediation Plan, a contract was awarded from a competitive bidding process through PWGSC on behalf of INAC. The evaluation criteria for contract award included the requirement for an Inuit Benefits Plan to ensure continued involvement of aboriginal people during the Remediation Plan implementation stage.

The prime contractor for the remediation work was Quantum Murray LP (QMLP). QMLP is a Canadian owned company headquartered in Burnaby, British Columbia. For this remediation program QMLP retained the services of Stan Dean and Sons, a northern contractor with well over twenty years of experience completing construction and remediation projects in the high arctic, to provide equipment and field construction management support to the remediation team.

Inuit employment during the course of the remediation program (as a percentage of the overall hours spent by the remediation contractor at both the Roberts Bay and Ida Bay Mine sites), was 62.53% including Community Coordinator hours. The target Inuit employment rate, as per QMLP contract was 80.67%. Table 2 below provides the QMLP employment person-days for the Roberts Bay and Ida Bay Remediation Project for 2008, 2009 and 2010 on a quarterly basis.

Table 2: Inuit Employment Summary

Employment		2008				2009				2010			Total
		Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	
Total employment	#	0	5	4	0	10	27	2	12	14	8	2	
	p-days	0	23	8	0	139	667	105	112	139	84	29	1,307
Northern employment (includes Inuit)	#	0	3	2	0	7	22	2	12	14	8	2	
	p-days	0	13	4	0	127	478	105	112	139	84	29	1,092
Inuit Employment	#	0	3	2	0	1	20	2	12	7	3	2	
	p-days	0	13	4	0	37	398	105	112	67	57	29	823
Non-Northern Employment	#	0	2	2	0	3	5	0	0	0	0	0	
	p-days	0	10	4	0	12	189	0	0	0	0	0	

2.3 TRAINING

As part of the Roberts Bay and Ida Bay Remediation Program, training was delivered by QMLP staff in several formats and ranged from daily site meetings and on the job training to a formal training program delivered in Cambridge Bay.

In 2008, the crew conducting the winter mobilization (including Inuit team members), was provided training in EHS Policy & Procedures, Wildlife Safety and Spill Response.

In 2009 Quantum Murray LP designed and delivered the Indian and Northern Affairs Capacity Building Training Program for the Roberts Bay Remediation Project. The curriculum was

developed from a proven suite of Quantum Murray LP training modules, and was designed based on work to be performed on-site. The training was very interactive, using practical applications with various tools/equipment and were conducted in the community at various locations including the local fire hall. Classroom content included workbooks, videos and equipment. Courses are industry recognized and certificates and wallet cards were issued for each module successfully completed.

Participation and completion rates were very high compared to historical norms, and the program was deemed a success both by INAC, the students and the local community (separate report is available).

A breakdown of the training received is provided in Table 3 below.

Table 3 Summary of Inuit Training Initiatives

Training	2008 Person-Hrs	2009 Person-Hrs	2010 Person - Hrs
EHS Policy & Procedures	24	93	0
Wildlife Safety	12	0	0
HAZWOPER (Hazardous Waste Operations and Emergency Response)	0	560	0
WHMIS	0	112	0
Fire Response	0	112	0
Spill Response	12	96	0
Transportation of Dangerous Goods	0	104	0
Other (H&S, Construction Basics)	0	448	0

2.4 LOCAL BENEFIT

A total of 90.24% of the contract amount was on equipment and materials from local northern suppliers. A total of 67.94 % of the contract amount was on equipment and materials from Inuit suppliers. The QMLP contract target for Inuit Content was 67.55%. The local northern suppliers used during the course of the program are listed in Table 4.

Table 4: Local Northern Suppliers

Local Northern Supplier	Inuit Supplier
Aboriginal Engineering	
Air Tindi / Aqsaqniq Airways	X
Arctic Co Op (hotels and stores)	X
Arctic Sunwest	
Aurizon Investments / Green Row Exec Suites	X
Buffalo Airways	
Canadian North (passenger and cargo)	
DAL Aviation	X
Ekaluktutiak Hunters & Trappers Organization	X
Hamlet of Cambridge Bay	X
Inuit Translator	X
Jago Services	
Kikiak Caterers Ltd.	X
Killiniq Corp Ltd	X
Kitikmeot Caterers Ltd.	X
Kitikmeot Helicopters / Great Slave Helicopters	X
Nunavut Expediting	X
Stan Dean & Sons	
Top of World Travel	X
Toromont Arctic	X
Wilf's Expediting	
Qillaq Innovations	

3.0 REMEDIATION ACTIVITIES

3.1 SELECTION OF REMEDIATION CONTRACTOR

The procurement process for the remediation contract was subject to the requirements of the Nunavut Land Claim Agreement. Under this Agreement, bidders were required to maximize Inuit employment, sub-contracting and on-the-job training opportunities and involve local, regional and Aboriginal people and businesses/subcontractors, in undertaking the remediation work at Roberts Bay/Ida Bay.

The Request for Proposals closed in August of 2007 with two proposals submitted for the remediation project. Each proposal was evaluated by PWGSC and INAC to assess best value to the crown which including the following categories and associated percentage weighting:

Proposed Technical:	25%
Proposed Management & Organization:	25%
Proposed Aboriginal Benefit Plan:	10%
Total Cost:	40%
Total Weighting:	100%

Quantum Murray LP (QMLP) provided the proposal evaluated to be the best value to the Crown. The Roberts Bay and Ida Bay Remediation contract was awarded to QMLP on September 17, 2007.

A project kick-off meeting between PWGSC, QMLP and INAC was conducted in Ottawa, Ontario, on February 7, 2008 to provide opportunity for all parties to meet, incorporate preliminary kick-off meeting issues, establish roles and responsibilities, establish lines of communication, review contract documents and address any questions regarding the remediation program.

3.2 REMEDIATION OVERVIEW

Mobilization of heavy equipment, material and program supplies commenced in July 2008 with the loading of the NTCL river barges in Hay River for the Hay River to Tuktoyaktuk leg of the mobilization, followed by the ocean barging from Tuktoyaktuk to the Ida Bay site over the August to September 2008 period. The heavy equipment, materials and supplies were off-loaded at Ida Bay between September 29, and October 3, 2008. Due to the time of year and climatic conditions on-site no remediation works were undertaken in 2008. Photograph No.1, in Appendix D, is of the barge off-loading at Ida Bay.

Transfer of equipment, material and supplies from the Ida Bay to Roberts Bay site took place between April 16-29, 2009. Site remediation activities at Roberts Bay did not commence until

July 22, 2009 with the mobilization of personnel to site via Twin Otter (using Roberts Lake as the landing strip). Photograph No. 2 and 3, in Appendix D, are of the 2009 winter mobilization of equipment, materials and supplies from Ida to Roberts Bay.

The 2009 site work at Ida Bay (prior to the mobilization to the Roberts Bay site), entailed the blasting and collapsing of the Ida Bay adit roof. This work was undertaken on April 23, 2009. Final grading of the area was done in 2010. Photograph No. 4 shows the site conditions at the end of 2009 field season.

Site work for the 2009 field season at the Roberts Bay site started July 23 and ended on August 31, followed by camp shut down. The camp was vacated on September 6, 2009. During this period debris clean up work was also completed at the Ida Bay mine site. At the end of the 2009 field season the equipment, materials and supplies at the Roberts Bay site were winterized in anticipation of the 2010 demobilization work. Site conditions at Roberts Bay at the end of the 2009 field season are presented in Photograph No. 5 to 8.

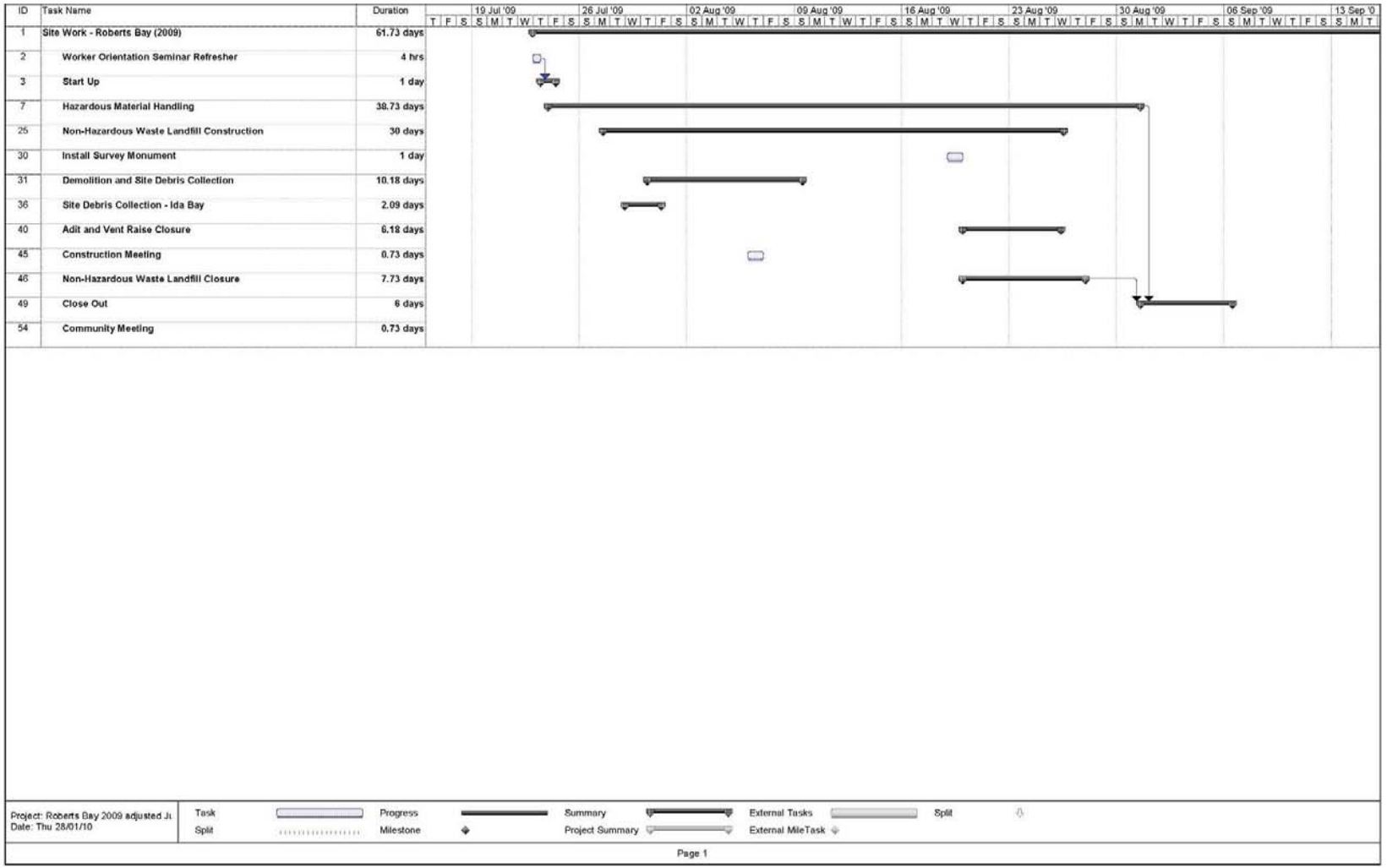
In April 2010 the remediation contractor relocated their equipment, materials, supplies and containment boxes from the Roberts Bay site to the Ida Bay site. Photograph No. 74 graphically shows the relocation to Ida Bay. The site remediation work at Ida Bay was completed in July 2010 with the site demobilization from Ida Bay taking place between the 22nd and 24th of August 2010. The transfer of equipment and materials to southern locations took place between the end of August and the end of September 2010. Photographs Nos 75 to 77 show the demobilization from Ida Bay and an aerial view of both sites at the end of the remediation works in August 2010.

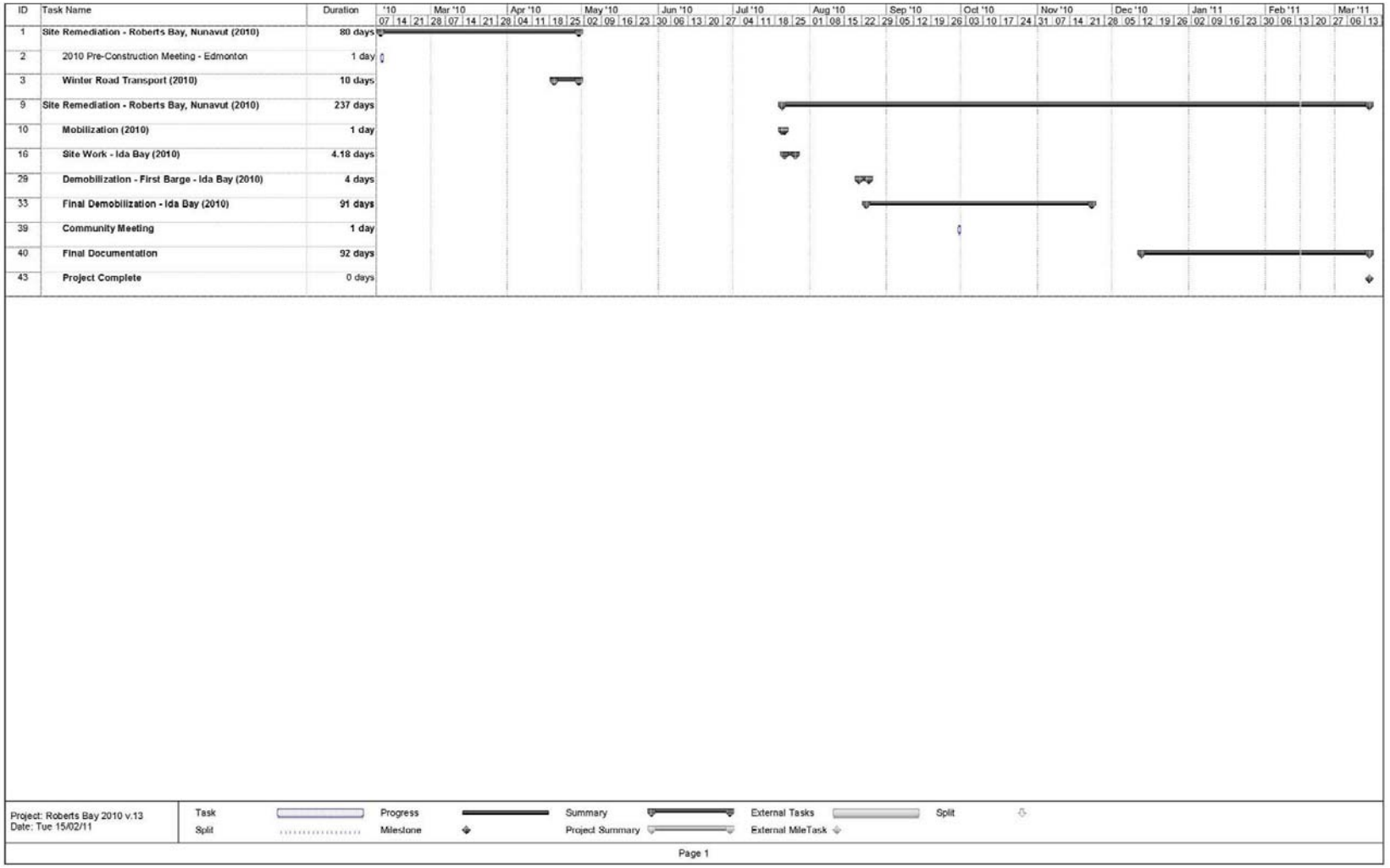
A brief summary of the remediation activities completed at the Roberts Bay and Ida Bay sites is provided in Table 5, and the general remediation schedule for the entire remediation program in Table 6. An overall site plan of the Roberts Bay and Ida Bay sites is shown in Figure 1, and an overall site plan of the remedial works completed at both sites in Figure 2. A site plan outlining the remedial works completed at both the Ida Bay and Roberts Bay sites is shown in Figures 3 and 4 respectively. Details regarding the individual work activities are provided in Section 3.4.

Table 5: Summary of Remediation Activities

Location	Issue	Remediation Activities	Work Completed
Roberts Bay Mine Site	Infrastructure	Dismantle, segregate and bury non-hazardous material on-site. Remove hazardous material from site for disposal in the south.	All hazardous materials were containerized and shipped off-site for disposal in 2010. Non-hazardous debris and waste were placed into the SWMF for disposal.
	Tailings	Drain tailings (treat water if necessary); collect any spilled tailings and place into the pond; expand the containment area by expanding and flattening the berms to a minimum of 3H:1V to accommodate and bury non-hazardous waste; cover with 2 m of compacted waste rock in the winter to establish permafrost and isolate frozen waste from the environment; cover with overburden.	Water was left in tailings containment area and the design of the tailings cover and SWMF was amended to contain the water, debris and tailings. The tailings were isolated from the balance of the waste material placed into the SWMF. Final cap placed and three thermistors installed.
Roberts Bay Mine Site Continued	Waste rock	Utilize where required for cover, erosion control, and backfill with the remainder; re-graded and left in place.	Waste rock was used as required on-site.
	Non-hazardous waste	Bury within SWMF and covered with waste rock to isolate from the environment. Existing domestic landfill will be covered and the berms reinforced to enhance long-term physical stability.	Demolition work was completed and non-hazardous materials relocated to the landfill for disposal. The former domestic landfill was covered with waste rock as per the remediation plan.
	Hazardous waste	Containerized and transported off-site for disposal at an appropriate disposal facility in the south.	All hazardous materials were containerized and shipped off-site for disposal in 2010.
	Petroleum and metals impacted soil	Excavate hydrocarbon contaminated soil from fuel storage compound and garage area (~325 m^3) and excavate metal laden soil from mill building area (~65 m^3), containerize and transport off-site to an appropriate facility for treatment or disposal.	All impacted soils were containerized and shipped for disposal in 2010.
	Mine openings	Infill with waste rock, blast the roof and then backfill depression with waste rock. Cover the Roberts Bay Mine vent raise with waste rock.	All mine opening closure work at Roberts Bay was completed in 2009.
Ida Bay Mine Site	Infrastructure/ nonhazardous and hazardous debris	Dismantle and segregate. Containerize hazardous debris and transport to an appropriate off-site facility. Reduce and recycle volumes of non-hazardous waste where possible and bury remainder within the adit at the Ida Bay site, then cap with waste rock. Move remaining to Roberts Bay site.	Some of the hazardous waste and debris was containerized and shipped off-site for disposal in 2010 while all non-hazardous debris and waste, save for the wood over the vent raise, was consolidated and relocated to the SWMF at Roberts Bay for disposal.
	Waste rock	Remove from above the high tide level, utilize for backfill where needed. Transport remainder to Roberts Bay for use as cover, backfill, etc.	Waste rock was relocated during the 2010 field season
	Mine openings	Infill with waste rock, blast the roof and then backfill depression with waste rock.	Blasting work completed in 2009 and the final re-grading done in 2010 along with the backfilling of the local vent raise.
	Marine sediments	Remove the waste rock from the shoreline above high tide and manage it with the remaining one.	Work completed during the 2010 field season.

Table 6: Project Schedule




ID
Task Name
Duration
'10
Mar '10
Apr '10
May '10
Jun '10
Jul '10
Aug '10
Sep '10
Oct '10
Nov '10
Dec '10
Jan '11
Feb '11
Mar '11
1 Site Remediation - Roberts Bay, Nunavut (2010) 80 days
2 2010 Pre-Construction Meeting - Edmonton 1 day
3 Winter Road Transport (2010) 10 days
9 Site Remediation - Roberts Bay, Nunavut (2010) 237 days
10 Mobilization (2010) 1 day
16 Site Work - Ida Bay (2010) 4.18 days
29 Demobilization - First Barge - Ida Bay (2010) 4 days
33 Final Demobilization - Ida Bay (2010) 91 days
39 Community Meeting 1 day
40 Final Documentation 92 days
43 Project Complete 0 days
Project: Roberts Bay 2010 v.13
Date: Tue 15/02/11
Task
Split
Progress
Milestone
Summary
Project Summary
External Tasks
External MileTask
Split
Page 1

3.3 WORK SITE HEALTH AND SAFETY

Health and safety of the workers employed for the Roberts Bay and Ida Bay Remediation Program was of paramount concern to the project management team. As such, a project specific Health and Safety Plan (QMLP 2008a) was developed prior to the start of the work in 2008. The plan detailed expected job hazards, recommended safety measures, safe work practices, emergency procedures and personal protective equipment requirements.

Prior to the start of the site work, QMLP prepared a Worker Orientation Seminar (QMLP 2008b) covering:

- the overview of the Roberts Bay and Ida Bay sites;
- project communication, organization and administration;
- remediation activities and scope of work;
- work specific task requirements; and
- general site specific health and safety and environmental protection.

The Seminar was conducted in Cambridge Bay on September 24, 2008 for thirteen individuals (including two from the community) interested in being a part of the Contractor's general work force. The balance of the persons attending the Seminar included the skilled and unskilled tradesmen, supervisors, foremen, and the resident engineer. Prior to the commencement of the 2009 field season the Seminar was completed again by QMLP staff on July 23, 2009. A total of 20 individuals, including the resident engineer and QMLP staff attended this Seminar. The Seminar was presented to nine other individuals upon their arrival on-site during the course of the 2009 field season program. Crews returning for the remaining work at Ida Bay and the demobilization, in 2010, were provided a refresher by QMLP site management staff.

Site activities were supervised and/or managed by John Weigel a Level II Certified Mine Site Supervisor. A site medic was on-site at all times during each field season. Worker safety was closely monitored by the supervisors and the on-site medic.

Site orientation was provided to each employee when they first arrived to site. The orientation covered the site specific Health and Safety Plan including emergencies, health, spills, general conduct in camp and safe work practices. Safety procedures were set in place such that each group of workers would have at least one radio, enabling them to contact the site supervisor and medic.

Each work day began with a safety meeting lead by the site supervisor. During the safety meeting, the activities for the day were outlined, status of wildlife concerns and potential safety hazards were discussed. Worker feedback was incorporated into the hazard analysis and the development of procedures and protocols to mitigate these hazards.

During the course of the site work, a weekly health and safety meeting was conducted on each Sunday by the on-site medic. During this meeting any incidents were reviewed and general

discussions on selected health and safety topics were presented to the site staff. In addition employee comments and concerns were addressed.

The following subsections summarize key aspects of health and safety that were enforced on-site.

3.3.1 Personal Protective Equipment (PPE)

All personnel were required to wear the appropriate personal protective equipment (PPE), which at a minimum consisted of a CSA approved safety hard hat, CSA certified footwear Grade 1 approved, safety glasses and reflective clothing that conforms to CSA-Z96-02. Workers were also required to wear other safety equipment including hearing protection, in addition to fall protection equipment or life vests dependant on the nature of the work. Dust masks were worn by employees exposed to this hazard.

For work involving asbestos handling, workers were required to wear additional safety equipment including:

- Tyvek coveralls;
- Half face-piece respirator with NIOSH approved P100 filter;
- Nitrile gloves;
- Rubber steel-toed boots; and
- Safety goggles.

3.3.2 Health and Safety Training

Health and Safety Training was included in the 2009 INAC Inuit Capacity Building Training Program, in the Site Orientation Seminar, and during daily tailgate meetings as well as on-the-job. Daily tailgate meetings and on-the-job training included such topics as the proper use of PPE to effective lifting techniques.

3.3.3 Safety Inspections

Informal safety inspections were conducted on a daily basis on-site by the Health and Safety Officer and/or the Superintendent.

Overall, the safety inspections were very useful in maintaining safe operations at the job site, as the project was completed with no serious injuries. Most of the minor injuries were typical cuts and scrapes associated with field work. A strained back was reported one day following manual work demolishing a structure. Some of the manual demolition works involved heavy lifting of debris and materials leading to increased back strains on workers. Proper heavy lifting procedures were addressed during morning safety meetings as well as reminders not to lift objects beyond individual capability. Back support belts were provided for workers. Whenever injuries such as these occurred, WCB reports were filed, and workers were placed on light duty.

3.3.4 Wildlife Safety

A Wildlife Response Plan (QMLP 2008) was developed for the remediation work that addressed: potential encounters, firearm protocols, basic safety principles, social responsibilities of a firearm user, preventing and responding to bear encounters, and minimizing the impact on wildlife. During project work a wildlife monitor was retained full time for the duration of the work. The monitor patrolled accessible work areas every morning prior to the safety meeting, and reported on any signs of larger wildlife at the work areas.

Labour crews were not issued a firearm per group as the remediation works were localized and wildlife monitors were able to survey the entire work area. Work crews were also instructed to report any sighting of wildlife with time and location. Little wildlife was observed in the area during the remedial works. Any wildlife sightings were reported in the QMLP and resident engineer's daily reports. A list of the wildlife sightings is provided in Table 7 below.

Table 7: Summary of Wildlife Sightings

Date	Wildlife	Location
July 22,2009	Caribou	East of road to Roberts Lake
July 23,2009	Caribou	Dock at Roberts Lake
July 27, 2009	Caribou	NE of camp site
July 30, 2009	Wolverine	On hills east of the camp
July 31, 2009	Wolf	By Roberts Lake
August 01, 2009	Wolf	By Roberts Lake
August 06,2009	Wolf	By Roberts Lake (wolf was shot)
August 06, 2009	Geese	Flock of 23 flew over
August 08, 2009	Wolf	South of Adit 2
August 14, 2009	Grizzly bear	In the valley west of the landfill site.
August 18, 2009	Wolf	By the old camp site south of the tailings pond
August 18, 2009	Grizzly bear	By the creek ~ 200m west of the dock
August 19, 2009	Wolf	~ 10 m east of the trailers by the sewer line
August 21, 2009	Fox	South of landfill
August 21, 2009	Grizzly bear	On rocks by Roberts Lake
August 23, 2009	Pair of wolves	By creek west of dock at Roberts lake
August 23, 2009	Grizzly bear	By Roberts lake
August 24, 2009	Wolf	East of trailers
August 25, 2009	Wolf	East of trailers
August 31, 2009	Wolf	North of trailers
September 1, 2009	Wolf	South of camp
September, 2009	Grizzly bear	Entry into one of trailers discovered on Sept. 22, 2009 (date unknown as camp was empty)
July 24, 2010	Grizzly bear	Ida Bay in camp and equipment laydown area

To reduce the risk of attracting wildlife, food scraps were burned each day in an incinerator, and workers were required to return all food waste from the work site to camp disposal facilities.

During the 2009 field season there was only one wildlife incident. This incident involved a wolf which was observed to be patrolling close to the Roberts Bay camp and work site. On August 6, 2009 the wolf was observed to be approaching the camp in an aggressive manner and it could not be deterred. After unsuccessful attempts to deter the wolf , the animal was destroyed by Damian Analok of the Cambridge Bay HTO (hired by QMLP as a wildlife monitor). The wolf was skinned with the hide shipped to the Cambridge Bay Conservation Officer and the carcass incinerated as per instructions from Conservation Officer Shane Sather. An incident report was also filed and sent to the authorities having jurisdiction.

No issues of concern, with respect to wildlife, were observed during the 2010 field works.

3.4 SPECIFIC REMEDIATION COMPONENTS

The following sub-sections outline the work completed as part of the remediation program at the Ida and Roberts Bay mine sites. Figures 3 and 4 identify the work completed during the remediation program at the respective mine sites.

3.4.1 Access to Underground

3.4.1.1 Ida Bay Adit

As per the Remediation Plan for the site the closure of the mine adit at the Ida Bay Mine site was to involve the collapsing of the adit roof by blasting and infilling the balance of the depression at the entrance of the mine opening with waste rock from the area.

On 23 April 2009 the roof of the Ida Bay adit was blasted and waste rock from the area immediately adjacent the adit was used to partially fill the depression. Photograph No. 9 and 10 show the before and after condition of the adit prior to equipment being mobilized to the Roberts Bay Mine site.

The final backfilling and grading of the adit opening was completed during the 2010 field season. Figure 5 shows the as-built plan once the backfill work at the adit has been completed and the area surveyed. Before and after photographs of the site works are provided in Appendix A – QMLP Photo Log. The As-built survey of the Ida Bay mine area, which identifies the areas of the site where mine workings were capped, is also provided in Appendix A.

3.4.1.2 Roberts Bay Adits

Similar to the Ida Bay Mine adit and in accordance with the prescribed Remediation Action Plan for the mine site adits, the roof of the two adits (Adits #1 and #2) were blasted and subsequently backfilled with borrow material (waste rock) from the site. In addition the vent raise located adjacent to Adit #2, which had been capped with concrete during previous decommissioning

works on the site, was covered with 500 mm of site derived fill from a local borrow source. In both instances the borrow material was placed and graded in place to raise the backfill grade within the footprint of the former adit by 1 m above the surrounding grades and the waste rock sloped down to match the surrounding topography.

The closure of the respective mine openings and covering of the vent raise was completed during the 2009 field season. Photographs of the respective mine openings before and after their closure are shown on Photographs No. 11 to 16 presented at the rear of this report. Figures 6 and 7 present, graphically, the "as-built" conditions of the respective mine openings. Before and after photographs of the site works are also provided in Appendix A – QMLP Photo Log. The As-built survey of the Roberts Bay Mine area, which identifies the areas of the site where mine workings were capped, is also provided in Appendix A.

3.4.2 Site Infrastructure and Potential Physical Hazards

In general there was very little debris identified at the Ida Bay Mine site while at the Roberts Bay Mine site there were remnant structures, miscellaneous pieces of mine related equipment and scrap debris scattered around the mine site proper as well as the area of the former site camp and former domestic waste landfill. The location of identified site infrastructure and physical hazards related remedial works are presented on Figure 2. The actual work areas were work was undertaken during the remediation program are presented on Figures 3 and 4. The As-built survey of the Ida Bay and Roberts Bay Mine sites, which is provided in Appendix A, identifies the areas of the site where remedial works were undertaken.

Further details of the remediation works are presented in the following sub-sections.

3.4.2.1 Structures

Ida Bay Mine Site

The Ida Bay Mine site did not have any existing structures in place and as such no remediation work was required at this location in this regard.

Roberts Bay Mine Site

As reported in the Remediation Action Plan for the site, once the mining operations ceased the supporting infrastructure was abandoned in place. At the time the 2009 remediation program commenced there were four areas on-site where structures were identified:

1. Former Camp Area: remnant platforms and the remains of several tent-cabin frames, an outhouse and shed as well as core racks were present.
2. Mill Area: remnant metal frames for the former mill and assay lab structures as well as the hazardous materials shed.

3. Garage/Machine Shop and Adit Area: remnant metal frame of the machine shop and the metal tent frame which covered the adit entrance which was enclosed within a chain link fence.
4. Pump House Area: remains of a structure at Unnamed Lake which had once housed a pump used to supply water to the mine site.

The location of the respective structures is shown on Figure 4. Photographs of the respective areas prior to any remediation work are shown on Photograph No. 17 to 24, located at the rear of this report.

During the course of the 2009 field program all the above noted structures were demolished with the non-hazardous materials relocated to the on-site Solid Waste Management Facility (SWMF), located within the former Tailings Containment Area, while any hazardous materials were consolidated and containerized for transport off-site as discussed in Section 3.4.3.1 Hazardous Materials. On the basis of survey work completed during the construction of the SWMF an estimated 109 m^3 of debris and 742 m^3 of debris and waste rock intermediate cover was placed into the SWMF to the top of the Type 2 fill layer as shown in Figures 10 and 11.

Before and after photographs of the site works are provided in Appendix A – QMLP Photo Log.

3.4.2.2 Miscellaneous Equipment

Ida Bay Mine Site

No remnant pieces of mine equipment were identified at the Ida Bay mine site during the course of the 2009 field season and as such no remedial work was undertaken in this regard.

Roberts Bay Mine Site

The results of assessment work at this mine site identified various pieces of mine related equipment still on-site in the areas of the former mill, machine shop and assay laboratory. An inventory of the individual pieces of equipment on-site was not provided however all equipment which did not have any hazardous materials associated with its construction (i.e. non-hazardous materials) was transferred to the SWMF for disposal. The volume of equipment transferred to the SWMF would be included in the total volume of material transferred as noted in Section 3.4.2.1 Structures.

Any hazardous materials associated with any of the equipment, typically in the form of elevated concentrations of lead in the paint, was removed and containerized for off-site disposal as outlined in Section 3.4.3.1 Hazardous Materials.

Photographs of the equipment are presented on Photograph Nos. 25 to 28 located at the rear of this report. Before and after photographs of the site works are provided in Appendix A – QMLP Photo Log.

3.4.2.3 Miscellaneous Scrap

Ida Bay Mine Site

A minor amount of mine related scrap debris was identified at the Ida Bay site during the course of previous assessment programs at the site. As identified in the Remediation Plan there was an estimated 9 m^3 of scrap debris located at the site. The scrap debris was a mix of wood, lumber, scrap steel, rubber hoses, tin cans and auto parts. This material was consolidated and transferred to the Roberts Bay mine site for placement into the SWMF during the course of the 2009 field season.

In addition to the non-hazardous materials identified above the remediation plan also involved the consolidation and containerization of hazardous materials in the form of broken lead batteries and some asbestos containing material related to brake pads. The management of the hazardous materials is further discussed in Section 3.4.3.1 Hazardous Materials.

The location where debris was identified prior to the remediation program is shown on Figure 3. The limits of the remediation work undertaken in 2009 are also shown on Figure 3. Photographs of the scrap debris clean up are presented in Photograph No. 29 to 32, located at the rear of this report.

Roberts Bay Mine Site

In general there was a mix of wood, scrap metal and other inert wastes identified in discrete locations within and around the main mine and camp areas of the site. In addition there was a former Camp Waste Landfill (Old Camp Landfill on the as-built drawings in Appendix A) located south of the mine site near the former camp area. The remediation plan for this material was to consolidate all the non-hazardous material and transfer it to the SWMF on-site while any hazardous materials would be consolidated and containerized as required for off-site transport and disposal. The management of the hazardous materials is further discussed in Section 3.4.3.1 Hazardous Materials. In addition the remediation plan called for the capping of the former Camp Waste Landfill with 300 mm of waste rock once any equipment in the area had been transferred to the SWMF. Any surface scrap debris was left in-place prior to burial.

This remediation work was completed by QMLP staff during the 2009 field season. The volume of debris and scrap collected and transferred into the SWMF is incorporated into the previously reported volume. The volume of borrow material recovered, hauled, placed and graded over the former camp landfill was 312 m^3. Figure 8 details the As-built grades on the Roberts Bay Mine Site post 2009 remediation works.

Photographs of the remedial works related to the management of scrap debris on-site are presented on Photograph No. 33 to 36 located in the rear of this report. Before and after photographs of the site works are provided in Appendix A – QMLP Photo Log.

3.4.3 Contaminated Areas

The results of the previously completed assessment work identified some residual hazardous materials at the Ida Bay Mine site while hazardous materials, soils contaminated with elevated metal parameter and petroleum hydrocarbon impacts, and tailings were present at the Roberts Bay Mine site.

The areas of impact are identified along with the extent of the remedial works completed in 2009 on Figures 3, 4 and 9 for the respective mine sites.

The various forms of contamination encountered on the respective sites are discussed in the following sub-sections.

3.4.3.1 Hazardous Materials

Ida Bay Mine Site

From the Remediation Action Plan, it was understood that upwards of 100 kg of material impacted with broken lead batteries along with some asbestos break pads were located at the Ida Bay site.

During the 2010 field program the broken lead batteries were collected and containerized for off-site disposal while in 2009 the minor amount of asbestos containing materials located on-site were consolidated and transferred to Roberts Bay for containerization in the hazardous waste TDG approved sea cans along with other similar hazardous waste. Both the batteries and asbestos materials were transferred off-site in 2010 along with the balance of the hazardous materials containerized at Roberts Bay. This material was placed into hazardous material crate No.1.

Photographs of this facet of the remediation program are presented on Photograph No. 37 located at the rear of this report.

Roberts Bay Mine Site

From the Remediation Plan, it is understood the following hazardous materials were identified at this mine site:

- PCB containing equipment (3 capacitors and 7 light ballast) - 0.25 m^3;
- Fuel – gasoline and jet fuel – 3200 L;
- Hydrocarbon impacted water from fuel bladders and in barrels – 800 L;
- Waste oils and glycols – 675 L;
- Compressed gas cylinders – 10;
- Mill process chemicals (xanthante, various acids, calcium, lime and lead shavings);
- Acids;
- Equipment painted with lead amended paints – 11,000 kg

- Lead acid batteries – 1 drum and 3 vehicle batteries (0.25 m^3); and
- Detonation cord.

In addition there were a limited number of asbestos containing material applications on the site. One related to a piece of transite board used in a heating cabinet located within the former mill while asbestos break pads were also observed on-site.

As part of the 2009 field program QMLP had Mr. Darryl Stowe, of Envirochem Limited, on-site as their hazardous materials specialist to assist with the characterization, consolidation and containerization of the hazardous material on-site. Under the specialist's direction, the various hazardous materials noted above were containerized and prepared for shipment off-site. A total of 24 containers were used to containerize the hazardous materials. These 24 containers were then placed in 11 TDG approved sea cans for transport. In addition the mine related equipment identified at Roberts Bay as having been painted with lead amended paints has been secured to flatbed trailers for demobilization and off-site disposal. In 2010 the two flatbed trailers were barged off-site and transferred to a recycling facility. A detailed breakdown of what is in the respective Seacan crates is provide in Table 12 located in Section 4.1 of this report.

The above reference hazardous waste materials were transferred off-site in a two step process during the 2010 field program. The containers were initially transferred to the Ida Bay Mine site in the Spring of 2010 while the off-site transfer via barge and truck took place between late August and mid November 2010. Manifests and Certificates of Destruction, or confirmation of disposal, for the respective waste materials having been shipped off-site for disposal are provided in Appendix A of this report. At the time this report was prepared it was anticipated that some certificates of destruction may not be available July 2011. This report will be updated with an addendum upon receipt of all manifests and certificates.

Photograph No. 39 to 44, presented at the rear of this report, illustrate some of the work done to complete this part of the remediation program.

3.4.3.2 Metal Impacted Soils

The results of the assessment work completed at the Ida and Roberts Bay mine sites identified the presence of elevated metal parameter concentrations in the area of the former Roberts Bay mill only. The results of all the verification testing on the waste rock and native soils for metal parameters are presented in Table 8. The extent of the metal impact was based upon the presence of tailings mixed with the waste rock within the footprint of the former mill building. It was estimated that there was approximately 65 m^3 of metal impacted soils (tailings) beneath the footprint of the mill area.

During the course of the 2009 field program the waste rock and tailings were excavated from surface, within the limits of the former mill, down to the underlying bedrock surface. Given the shallow nature of the bedrock in the mill area, there was only a limited amount of native sands underlying the waste rock used to level an area for the mill. All waste rock, tailings and native soils were removed from within the limits of the former mill.

As part of the verification program a total of eight samples were procured from the waste rock and native soils. The initial sampling entailed the procurement of six samples (survey ID 224 to 229) at the limits of the excavation works at the mill site. The results of the analytical work were compared to the criteria set out in the Nunavut Water Board (NWB) Water Licence. The results identified one location (survey ID 228) with metal parameter concentrations consistent with the mine tailings previously tested at the Roberts Bay site. As a result additional remediation work was required at the southeast corner of the mill area. The limits of this additional remedial work were extended to the south and east by approximately 3 m by 3m and the thin veneer of native sand underlying the area was sampled. The results of the second suite of analytical samples (survey ID 250) confirmed that all the tailings were removed from this location. The results reported for the samples identified as 226 and 227 were procured from waste rock present immediately above the bedrock surface and as such the rock at this location was removed down to the underlying bedrock negating the need for additional verification testing.

Copies of the analytical certificates are provided in Appendix A.

In addition, metal analysis was completed on a soil sample procured from the outlier location (survey ID 280) associated with the Earth Tech sample ET1101. The results reported no metal parameter concentrations above the NWB Water Licence criteria.

On the basis of the survey conducted upon completion of the metal and petroleum hydrocarbon impacted soil remediation work, an estimated 38 m^3, or 19 seacan containers, of metal and petroleum hydrocarbon impacted material was recovered from the mill area and containerized for off-site disposal. The disposal of this material will take place during the 2010 field season.

The limits of the excavation work completed in relation to this facet of the remediation work are shown in plan on Figure 9. The verification sample locations are shown on this figure with results meeting the remediation standards shown in green while those exceeding standards are shown in red. A photograph of the metal impacted soil clean up is presented in Photograph No. 45 located at the rear of this report.

3.4.3.3 Petroleum Hydrocarbon Impacted Soils

The results of the assessment work completed at the Ida and Roberts Bay Mine sites identified the presence of elevated petroleum hydrocarbons (PHC) in four areas of the Roberts Bay Mine site. The four impacted areas are associated with the mill, garage, and fuel depot as well as one outlier location located on the tundra south of the former camp area (muskeg area). The limits of the identified PHC impacts are shown graphically on Figure 9. The Remediation Plan for this component of the site works estimated that upwards of 325 m^3 of PHC impacted soil would be recovered and shipped off-site for disposal at the Hazco Soil Treatment Facility in Hay River.

The remediation work associated with the PHC clean up at the Roberts Bay mine site was initiated and completed during the course of the 2009 field program. The areas of concern were reviewed by the project team at the commencement of the 2009 field program. During this

review the three primary impacted areas, namely the mill, garage and fuel depot, were visually identified along with an additional area of PHC staining in an area believed to be a former drum storage area at the mine site.

The muskeg area, located at the sample ET1101 location, is an outlier from the main mine and camp area as it is located over 50 m from the mine site proper (i.e. in the middle of the tundra with no evidence of any mining activities in the area). During the 2009 program a soil sample was procured, by the resident engineer, at this location and the sample submitted for analysis to confirm if the elevated PHC previously reported were the result of peat in the overburden or if a petroleum hydrocarbon derived from a diesel or heating oil spill had taken place at this location. The results of the analytical work and further assessment of the chromatograph of the hydrocarbon signature for the sample confirmed that the elevated PHC in the soil sample was the result of peat in the soil. A copy of the letter prepared by Maxxam Analytical Inc. in this regard is provided in Appendix A along with copies of the analytical certificates.

The remediation of the PHC impacted areas entailed the removal of impacted waste rock and native organic and sandy soils down to the permafrost surface and placing the impacted soil into seacan containers for subsequent off-site disposal during the 2010 field season. After some initial concerns that the limits of the remediation work was not extending down to the previously identified, or inferred depth of impact, the areas of remediation were left open to allow for the melting of the underlying permafrost. Once sufficient thawing had taken place the soil in the remedial areas was assessed and based on olfactory and visual observations the decision was made whether to extend the remediation works deeper into the permafrost. If the resident engineer was of the opinion that the remediation area may be clean, a suite of verification testing was completed. As part of the verification testing the resident engineer would procure soil samples from the sidewalls and base of the remediation area. Upon collection the verification samples were promptly expedited to the environmental laboratory (Maxxam Analytics) for testing. The results of the analytical work were compared, by the resident engineer, to the clean up standards set out in the Water Licence. If the results meet the criteria then the excavation work at that location would stop and the area could be backfilled to an elevation that would match the surrounding grades. If the results failed to meet the criteria then the excavation work was extended. This procedure continued in all four areas of PHC impact until the analytical results reported PHC concentrations below the criteria presented in the Water Licence.

In order to expedite the remediation work, testpit programs were initiated during the PHC clean-up and the results of the analytical work completed during these assessments were used to define the limits of the work.

A total of six suites of verification sampling were completed during the 2009 field program. In all 78 samples (including three blind duplicates) were submitted to the laboratory for petroleum hydrocarbon analysis. The results of the verification work are summarized in Table 9. The sample locations are shown graphically on Figure 9. The verification sample locations are shown on this figure with results meeting the remediation standards shown in green, while those not are shown in red. Photographs of this phase of the remedial work are shown in Photograph No. 46 to 57 located in Appendix D.

Table 8: Summary of Metals Verification Testing

ID	NWB WATER LICENCE CRITERIA	RDL	V09-Mi1	V09-Mi2	V09-Mi3	V09-Mi4	V09-Mi5	V09-228R	V09-Mi6	RDL	V09-SW1
Area			Mill	Mill	Mill	Mill	Mill	Mill	Mill		Outlier
Survey ID			224	225	226	227	228	250	229		280
Maxxam ID			Q18459	Q18460	Q18461	Q18462	Q18463	Q31198	Q18464		Q34800
Sample Date			9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	17-Aug-09	9-Aug-09		20-Aug-09
COC Number			80940	80940	80940	80940	80940	78331	80940		88124
Total Antimony	20	1	3	<1	5	4	4	1	<1	2	<2
Total Arsenic	105	1	29	2	53	28	480	48	3	2	4
Total Barium	500	10	94	20	150	68	170	100	22	20	150
Totally Beryllium	4	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	0.8	<0.8
Total Cadmium	10	0.1	0.5	<0.1	2.1	2.7	2.5	<0.1	<0.1	0.2	0.2
Total Chromium	64	1	27	5	79	84	24	41	8	2	43
Total Cobalt	50	1	20	4	23	28	70	13	5	2	13
Total Copper	176	5	64	24	120	110	460	78	8	10	44
Total Lead	140	1	70	9	160	65	1500	36	6	2	6
Total Mercury	6.6	0.05	<0.05	<0.05	0.1	<0.05	0.62	0.06	<0.05	0.1	<0.1
Total Molybdenum	10	0.4	1.9	<0.4	2.7	2.9	3	1	<0.4	0.8	2.2
Total Nickel	50	1	33	6	70	61	330	38	7	2	24
Total Selenium	1	0.5	<0.5	<0.5	1	<0.5	2	0.6	<0.5	1	<1
Total Silver	39	1	17	<1	33	8	70	10	<1	2	<2
Total Thallium	1	0.3	<0.3	<0.3	<0.3	<0.3	0.3	<0.3	<0.3	0.6	<0.6
Total Tin	50	1	<1	<1	2	<1	<1	<1	<1	2	<2
Total Uranium	NG	1	<1	<1	<1	<1	<1	<1	<1	2	<2
Total Vanadium	130	1	48	10	51	63	37	47	16	2	51
Total Zinc	>2000	10	73	25	200	130	780	75	31	20	59

Notes:

All units are in mg/kg unless otherwise indicated

- Laboratory reported concentration exceeds NWB Water Licence Criteria

NG - No Guideline

<0.02 - Concentration of Contaminant was not detected in sample above the laboratory analytical method detection limit

Table 9: Summary of Petroleum Hydrocarbon Verification Testing

Sample ID	NWB WATER LICENCE CRITERIA	RDL	V09-FB1	V09-FB2	V09-FB3	V09-FB4	V09-FB5	V09-FB6	V09-FB7	V09-FB8	V09-FB9	V09-M1	V09-M2	V09-M3	V09-M4	V09-M5	DUP1 (V09-M5)	V09-MK1	V09-MK2	V09-MK3	V09-MK4	V09-MK5	V09-MK6
Area			Fuel Depot	Fuel Depot	Fuel Depot	Fuel Depot	Fuel Depot	Fuel Depot	Fuel Depot	Fuel Depot	Fuel Depot	Garage	Garage	Garage	Garage	Garage	Garage	Drum Area	Drum Area	Drum Area	Drum Area	Drum Area	Drum Area
Survey ID			**200**	**201**	**202**	**203**	**204**	**205**	**206**	**207**	**208**	**209**	**210**	**211**	**212**	**213**	**214**	**215**	**216**	**217**	**218**	**219**	**220**
Maxxam ID			Q18429	Q18432	Q18433	Q18434	Q18435	Q18436	Q18437	Q18438	Q18440	Q18442	Q18445	Q18447	Q18449	Q18450	Q18465	Q18451	Q18452	Q18453	Q18454	Q18455	Q18456
Sample Date			9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09
COC Number			80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940	80940
Moisture (%)	-	0.3	31	11	21	26	31	11	20	15	6.9	79	16	26	13	70	67	10	8.2	14	8.8	14	8.9
F1 (C6-C10)- BTEX	245	12	330	<12	<12	<12	<12	<12	22	<12	<12	2400	<12	140	25	110	<36	<12	<12	42	<12	24	<12
F2 (C10-C16 Hydrocarbons)	700	10	16000	100	94	16	<10	<10	400	260	54	88000	<10	2000	920	4200	5000	<10	15	2000	17	1600	22
F3 (C16-C34 Hydrocarbons)	1135	10	4600	160	130	83	98	29	160	240	77	34000	41	560	5100	89000	86000	56	24	940	98	630	140
F4 (C34-C50 Hydrocarbons)	647	10	39	<10	12	<10	23	<10	10	20	<10	920	<10	<10	230	5200	4300	19	<10	16	<10	84	12
Reached Baseline	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes
F4SG (Heavy Hydrocarbons-Grav.)	-	500														110000	100000						

Sample ID	NWB WATER LICENCE CRITERIA	V09-MK7	V09-MK8	DUP2 (V09-MK8)	V09-Mi1	V09-Mi2	V09-Mi3	V09-Mi4	V09-Mi5	V09-Mi6	251	252	253	254	255	256	257	258	259	260	261	262	V09-B1
Area		Drum Area	Drum Area	Drum Area	Mill	Mill	Mill	Mill	Mill	Mill	Drum Area	Drum Area	Drum Area	Fuel Depot	Fuel Depot	Garage	Garage	Garage	Garage	Garage	Garage	Garage	Fuel Depot
Survey ID		**221**	**222**	**223**	**224**	**225**	**226**	**227**	**228**	**229**	**251**	**252**	**253**	**254**	**255**	**256**	**257**	**258**	**259**	**260**	**261**	**262**	**281**
Maxxam ID		Q18457	Q18458	Q18466	Q18459	Q18460	Q18461	Q18462	Q18463	Q18464	Q31185	Q31187	Q31188	Q31189	Q31190	Q31191	Q31192	Q31193	Q31194	Q31195	Q31196	Q31197	Q34801
Sample Date		9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	9-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	17-Aug-09	18-Aug-09
COC Number		80940	80940	80940	80940	80940	80940	80940	80940	80940	78330	78330	78330	78330	78330	78330	78330	78330	78330	78330	78330	78330	88124
Moisture (%)	-	13	16	11	7.8	5.4	4.3	4.2	35	5.1	10	11	10	9.1	13	9.1	9.4	9.8	18	18	16	14	20
F1 (C6-C10)- BTEX	245	<12	24	79	91	<12	<12	<12	<12	<12	<12	<12	<12	<12	<12	250	<12	<12	<12	<12	<12	<12	<12
F2 (C10-C16 Hydrocarbons)	700	96	8200	6900	11	<10	<10	<10	15	<10	<10	55	<10	<10	19	2700	<10	<10	21	25	<10	59	<10
F3 (C16-C34 Hydrocarbons)	1135	210	8700	6400	65	14	20	16	180	<10	<10	36	26	58	110	20000	<10	11	140	19	37	190	<10
F4 (C34-C50 Hydrocarbons)	647	20	1200	840	29	<10	<10	<10	49	<10	<10	<10	<10	13	31	990	<10	<10	16	<10	<10	12	19
Reached Baseline	-	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F4SG (Heavy Hydrocarbons-Grav.)	-		9300	5600												19000							

Sample ID	NWB WATER LICENCE CRITERIA	V09-G1	V09-G2	V09-G3	V09-G4		V09-SW1		300-GN1	301-GN2	302-GN2	303-GE1	304-GE2		305-GE3		307-GS1	308-GS2	309-GS3	310-GS4	311-TP1	312-TP2	313-TP3A
Area		Garage	Garage	Garage	Garage		ET1101		Garage	Garage	Garage	Garage	Garage		Garage		Garage	Garage	Garage	Garage	Garage	Garage	Garage
Survey ID		**282**	**283**	**284**	**285**	RDL	**280**	RDL	**300**	**301**	**302**	**303**	**304**	RDL	**305**	RDL	**307**	**308**	**309**	**310**	**311**	**312**	**313**
Maxxam ID		Q34802	Q34803	Q34804	Q34805		Q34800		Q38578	Q38579	Q38580	Q38581	Q38582		Q38583		Q38585	Q38586	Q38587	Q38588	Q38589	Q38590	Q38591
Sample Date		18-Aug-09	18-Aug-09	18-Aug-09	18-Aug-09		18-Aug-09		23-Aug-09	23-Aug-09	23-Aug-09	23-Aug-09	23-Aug-09		23-Aug-09		23-Aug-09	23-Aug-09	23-Aug-09	23-Aug-09	23-Aug-09	23-Aug-09	23-Aug-09
COC Number		88124	88124	88124	88124		88124		86425	86425	86425	86425	86425		86425		86425	86425	86425	86425	86425	86426	86426
Moisture (%)	-	8.2	13	7.2	9.7	0.3	61	0.3	6.8	14	7.2	22	23	0.3	66	0.3	26	13	15	23	25	13	19
F1 (C6-C10)- BTEX	245	<12	28	<12	64	31	<31	12	<12	<12	<12	640	19	36	210	12	<12	39	110	270	<12	<12	33
F2 (C10-C16 Hydrocarbons)	700	<10	750	14	430	10	27	10	<10	53	10	7900	250	10	6400	10	150	1600	4500	3900	11	20	110
F3 (C16-C34 Hydrocarbons)	1135	<10	190	<10	120	10	1600	10	<10	260	<10	3600	200	10	2300	10	160	1300	3500	1000	180	57	89
F4 (C34-C50 Hydrocarbons)	647	<10	<10	<10	<10	10	740	10	<10	28	<10	170	<10	10	65	10	18	110	400	34	40	12	19
Reached Baseline	-	Yes	Yes	Yes	Yes	-	Yes	-	Yes	Yes	Yes	Yes	Yes	-	Yes	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes
F4SG (Heavy Hydrocarbons-Grav.)	-					500																	

Sample ID	NWB WATER LICENCE CRITERIA	314-TP3B	315-TP4	321-GE2	322-GN1	323-GN2	324-GN3	325-TP31	326-TP32	327-GS1	328-GS2	RDL	320-GE1	RDL	400	401	402	403	404	405 (DUP of 404)	
Area		Garage	Garage	Garage	Garage	Garage	Garage	Garage	Garage	Garage	Garage		Garage		Garage	Garage	Garage	Garage	Garage	Garage	
Survey ID		**314**	**315**	**321**	**322**	**323**	**324**	**325**	**326**	**327**	**328**		**320**		**400**	**401**	**402**	**403**	**404**	**405**	
Maxxam ID		Q38592	Q38593	Q43275	Q43276	Q43277	Q43410	Q43279	Q43280	Q43281	Q43282		Q43089		Q47299	Q47300	Q47301	Q47302	Q47303	Q47304	
Sample Date		23-Aug-09	23-Aug-09	24-Aug-09	24-Aug-09	24-Aug-09	24-Aug-09	24-Aug-09	24-Aug-09	24-Aug-09	24-Aug-09		24-Aug-09		27-Aug-09	27-Aug-09	27-Aug-09	27-Aug-09	27-Aug-09	27-Aug-09	
COC Number		86426	86426	81106	81106	81106	81106	81106	81106	81106	81106		81106		81117	81117	81117	81117	81117	81117	
Moisture (%)	-	21	18	26	8.3	13	23	22	25	13	11	0.3	71	0.3	12	10	13	13	13	12	
F1 (C6-C10)- BTEX	245	640	31	24	<12	<12	<12	<12	<12	<12	<12	41	170	12	<12	<12	83	710	<12	<12	
F2 (C10-C16 Hydrocarbons)	700	3400	320	140	24	<10	<10	10	37	<10	69	10	17000	10	<10	<10	2500	10000	<10	<10	
F3 (C16-C34 Hydrocarbons)	1135	800	110	100	74	27	110	79	98	12	80	10	10000	10	<10	<10	1200	3700	14	<10	
F4 (C34-C50 Hydrocarbons)	647	<10	<10	41	54	<10	21	13	24	<10	19	10	860	10	<10	<10	35	89	<10	<10	
Reached Baseline	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	-	Yes	Yes	Yes	Yes	Yes	Yes	
F4SG (Heavy Hydrocarbons- Grav.)	-																				

Notes:

All units are in mg/kg unless otherwise specified

- Laboratory reported concentration exceeds NWB Water Licence Criteria for fine grained soils

<10 - Concentration of Contaminant was not detected in sample above the laboratory analytical method detection limit

Upon completion of the PHC remediation work a total of 319 m^3 of impacted soil was contained within 156 seacan containers and 7 Super Sacks. At the end of the 2009 field season these containers were prepared for demobilization to the Ida mine site in the Winter/Spring 2010 and subsequent barging and haulage to the disposal facility. In September 2010 these containers of impacted material were shipped to the receiving site. With the exception of 88 m^3 of material from three Seacan containers and four Super Sacks, all the material was received and treated. EnviroGreen will issue a letter confirming the treatment of the soil once the treatment has been completed. It is anticipated that the treatment process will be completed by July 2010. An addendum to this report will be prepared once the applicable documentation has been received.

3.4.3.4 Shoreline Waste Rock

As part of the remediation plan for the Ida Bay site there was a requirement to regrade the shoreline to removed waste rock from the inter-tidal zone. This remedial work was undertaken during the 2010 field program. The As-built for the work area is provided in Appendix A. Photographs of the shoreline work are also provided in Appendix A –QMLP Photo Log. The location of the remedial work is shown in plan on Figure 3 and 5.

The waste rock was recovered and relocated to the adit and trench on-site as part of the mine opening remedial works.

3.4.3.5 Landfill on Tailings Pond

The original scope of work, as outlined in the Remediation Plan, called for: the draining of the tailings pond; recovery of tailings spilled outside the limits of the tailings pond; expand the limits of the tailings pond to accommodate the non-hazardous waste debris; flattening the slope berms of the landfill to 3 horizontal to 1 vertical; cover the waste debris and interim fill with 2 m of waste rock to raise the level of the permafrost within the footprint of the tailings pond to an elevation above the existing level of the tailings; and cover the balance of the tailings pond with overburden.

At the outset of the 2009 field program a water sample from the TCA was procured and sent for analysis to confirm whether or not the ponded water could be discharged to the surrounding area.

The results of the analytical work reported that the water was impacted, with elevated inorganic parameter concentrations as compared to the allowable discharge criteria in the Water Licence. This resulted in a minor change in the design of the landfill. The As-built plan and sections for the tailings pond cap and SWMF (landfill) is shown on Figures 10 (Plan view) and 11 (Sections). The information for these plans was provided by the surveyor, with the survey plan outlined in Appendix A.

The minor variance in the design of the tailings cover entailed the construction of a wet and dry cell within the limits of the tailings pond. The dry cell was first constructed to receive all the debris generated during the demolition work on the site. Once all the waste material was placed

into the cell it was capped with 1 m of site derived borrow material to the grades shown in Figure 11. The dry cell was located outside the limits of the tailings and ponded water, at the north end of the former tailings pond. The wet cell, located south of the dry cell, was then pumped with water being transferred to the dry cell. This resulted in the tailings being exposed at the grades shown in Figure 11. These exposed tailings at the base of the tailings pond were then stabilized using waste rock and blast rock recovered from the area adjacent to the tailings pond. Prior to the placement of the waste/blast rock, the surface of the tailings were covered with the prescribed woven geotextile material. Once the covering of the tailings was completed the balance of the landfill was constructed to the elevations shown in Figures 10 and 11.

The construction of the landfill also included the re-grading of the area around the landfill to ensure that surface water runoff from the mine site area would migrate around the landfill. The final landfill contours are presented in Figures 10 and 11.

As part of the landfill construction, thermistors were installed within the footprint of the landfill as required under the terms of the site Water Licence. Three thermistors were installed to confirm the level of freezeback that would be taking place beneath the landfill. Monitoring of the freezeback data will be part of the on-going monitoring for the site as prescribed in the Roberts Bay and Ida Bay Site Monitoring Plan.

Photographs taken during the course of this work are presented in Photograph No. 58 to 73 located in Appendix D.

4.0 REGULATORY REQUIREMENTS

4.1 WATER LICENCE

As part of the preliminary restoration works INAC obtained a water licence for the project from the Nunavut Water Board (NWB). The licence number is 1BR-ROB0813 and is valid from August 8, 2008 to August 30, 2013. A copy of the licence along with the reporting requirements is included in Appendix C.

Pursuant to the NWB's letter of August 8, 2008, a Table of Required Submissions was provided therein which identified fifteen items. Table 10 below outlines the respective documents to be provided to the NWB and the dates when these submissions were due as well as when the document submissions were completed. Details of the remediation work completed to date has been provided in Section 3.4 of this report however for ease of review we have provided comments with respect to issues of concern identified in the Water Licence.

Mine Opening Remediation

In general the remediation of the mine openings at the Roberts Bay and Ida Bay Mine sites was completed as per the remediation specifications and the Remediation Plan prepared for the site. As noted in Table 10 the final design and construction drawings for the remediation of the mine openings was submitted to the NWB within sixty days of the Water Licence being issued.

Tailings Pond Remediation

The remediation of the tailings pond at Roberts Bay was completed in accordance with Revision D of the original design plan. Details of the work are presented in Section 3.4.3 of this report.

All licence submissions were made in accordance with the provisions (Part E Item 3) of the Water Licence.

Table 10: Required Submissions

No.	Document	Submission Date
1	Final Design and Construction Drawings for remediation of mine openings	9 February 2009
2	Final Design and Construction Drawings for remediation of Tailings Pond	9 February 2009
3	Final Design and Construction Drawings for remediation of the existing landfill	9 February 2009
4	Final Design and Construction Drawings for remediation of the Solid Waste Disposal Facility	9 February 2009
5	Tailings Freezeback Report	9 February 2009
6	Tailings Dewatering Plan	9 February 2009
7	Solid Waste Disposal Facility Management Plan	9 February 2009
8	Operations and Maintenance Plan for Sewage Disposal Facility	9 February 2009
9	Spill Contingency Plan	9 February 2009
10	Monitoring Plan	9 February 2009
11	Quality Assurance/Quality Control Plan	9 February 2009
12	Abandonment and Restoration Plan	9 February 2009
13	As-built drawings of the Mine Opening remediation, Solid Waste Disposal Facility and the existing landfill remediation	Included herein
14	Close-Out Report	Included herein

Quarrying and Borrowing

Quarry Permits for the site were issued in conjunction with the Land Use Permit for the site. Quarry Permits 2009 QP0059 to 2009 QP0065 were issued for the six potential borrow areas identified for use during the remediation program.

In general the recovery of borrow material was done in accordance with the operating conditions of these permits, however, in order to minimize the impact on the local environment the size of some of the borrow areas in close proximity to the site were expanded pursuant to discussions with the INAC Land Administrator. In addition the changes to the tailings cover design necessitated the use of over-blast material from the capping related works on the adjacent mine openings at the Roberts Bay site.

A total of 9312 m^3 of borrow and quarried material was recovered from the site. A summary of respective borrow sources is provided in Table 11 below.

Table 11: Summary of Borrow Material Volumes

Source	Volume Available (m^3)	Volume Used (m^3)
Borrow Area #1 (2009QP0059) – Sand/gravel Roberts Bay	300	0
Borrow Area #2 (2009QP0060) – Sand/gravel Roberts Bay	2520	1512
Borrow Area #3 (2009QP0061) – Sand/gravel Roberts Bay	2250	0
Borrow Area #4 (2009QP0062) – Sand/gravel Roberts Bay	1370	1188
Borrow Area #5 (2009QP0063) – Sand/gravel Roberts Bay	215	1068(1)
Borrow Area #6 (2009QP0064) – Sand/gravel Roberts Bay	2880	0
Borrow Area #1 (2009QP0065) – Sand/gravel Ida Bay	1200	0

Note (1) – prior to the recovery of material from the borrow area stockpiled waste rock was spread over this location to stabilize the ground during the mobilization to site and camp set up. This is the reason why the volume used exceeds the available volume. The waste rock imported into the Borrow Area #5 location was sourced from the adjacent waste rock stockpiles.

During the course of the remediation program concerns were raised regarding how outlying borrow source areas would be accessed. The primary issues of concern were; a) damage to the tundra and b) the need to construct access roads to these borrow pits. In order to mitigate these concerns the decision was made to recover additional rock material by of the over-blast in the vicinity of the tailings pond. A total of 5544 m^3 of rock was generated during the 2009 field season and all the material was used in the construction of the tailings cover/SWMF.

Waste Management - Tailings Pond Discharge Criteria

No water was discharged from the Tailings Pond as part of the Roberts Bay remediation works. This change to the original scope of work was necessary due to the presence of elevated metal parameters at concentrations above the limits allowed under the terms of the Water Licence.

Waste Management – Waste Rock

No additional analytical work was required for this program as sufficient data was collected during the assessment stage of the program.

Waste Management – Landfill

As previously noted the design and construction plans for the existing landfill and the non-hazardous Solid Waste Disposal Facility were submitted to the NWB by INAC. In addition to these drawings a Solid Waste Disposal Facility Management Plan was prepared, which included detailed plans for the management of surface runoff, and submitted to the NWB by INAC.

All solid waste generated from the demolition works was placed into the landfill in the month of August 2009. The SWDF was also capped during this month and as such the volume of debris placed into the SWDF (109 m^3) is both the monthly and annual volume.

Waste Management - Incineration

During the course of the remediation program, only wood free of paint and any other contamination, and combustible non-hazardous waste from the operation of the camp, were incinerated. No waste oil or hazardous materials were incinerated on-site. These waste materials were consolidated in to containers for subsequent off-site disposal.

Waste Management – Off-site Disposal

As part of the 2009 program a total of 176 Seacans and nine Super Sacks were staged for subsequent transfer from the Roberts Bay Mine site to the Ida Bay Mine site in the Winter of 2010. As part of the 2010 program, at the Ida Bay site, three additional Seacans were filled with impacted soil.

Of the 179 Seacans shipped off-site the majority of the Seacans were filled with petroleum hydrocarbon impacted soils with a small portion (19 Seacans) co-contaminated with elevated metal parameter concentrations, eleven Seacans contained the various hazardous materials as noted below and there was one Seacan of non-hazardous debris.

In addition to the Seacans and Super Sacks two flatbed floats of mine related equipment painted with lead amended paints (estimated mass 11,000 kg) were initially transferred from Roberts Bay to Ida Bay in April 2010 and subsequently shipped off site during the demobilization in August/September of 2010. An inventory of what is in each hazardous material Seacan is provided in Table 12. Copies of the manifests are provided in Appendix A.

Table 12 Summary of Containerized Hazardous Materials

Crate ID	Container ID	Material	Quantity
1	n/a	Asbestos Bags	3 bags
1	n/a	Empty cylinders	12
2	12	Xanthantes	1
2	8	Glycol	1
2	n/a	Waste Oil Filters	15 filters
3	1	Corrosive Liquids	1
3	2	Corrosive Liquids	1
3	6	PCB containing materials	1
3	17	PCB containing materials	1
4	5	Batteries (acid filled)	1
4	14	Batteries (acid filled)	1
4	15	Batteries (acid filled)	1
4	16	Batteries (acid filled)	1
5	3	Corrosive Liquids	1
5	10	Xanthantes	1
5	13	Toxic Solids	1
5	19	Xanthnate Solution	1
6	4	Batteries (acid filled)	1
6	11	Xanthantes	1
6	18	Calcium Carbonate	1
7	7	Pine Oil	1
7	9	Waste Dowthern 1012	1
7	9 of 11	Flammable Petroleum-based Liquids	1
8	5,6,7 and 8 of 11	Flammable Petroleum-based Liquids	4
9	1,2,3 and 4 of 11	Flammable Petroleum-based Liquids	4
10	22	Batteries (acid filled)	1
10	23P	Batteries (acid filled)	1
10	24P	Batteries (acid filled)	1
11	10 of 11	Flammable Petroleum-based Liquids	1
11	11 of 11	Flammable Petroleum-based Liquids	1
11	20	Used Oil	1
11	21	Used Oil	1

All materials were transferred off site in August 2010 and transferred to their respective disposal facilities.

Sewage Lagoon

The operation of the camp sewage system was done in accordance with the provisions of the GNWT document entitled *Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*. As outlined in the submission to the NWB, the NOMADIC™ portable sewage wastewater treatment plant was used on-site to manage both the grey and black water generated at the camp facility

during the 2009 field season. During the course of the 2009 field season approximately 150 to 200 m^3 of effluent was discharged from the system. An accurate number can not be provided as the flow meter on the system was not functioning correctly. The flow meter measured that 108,000 m^3 was discharged which would translate to over 20 m^3 per day in the field. Given the size of the camp and the volume of water taken from the Unnamed Lake (150 m^3 for the field season) it is readily apparent that the flow meter was not functioning correctly. The estimated volume of discharge from the sewage wastewater treatment plant can be estimated on the basis of the volume of water used on-site. On this basis on the order of 34 m^3 of sewage would have been generated during the month of July 2009 and 117 m^3 during the month of August.

No modifications or major maintenance work was completed on the treatment plant during the 2009 field season.

The treatment plant was not operated during the 2008 field season as no site work was completed other than the off-loading of equipment, materials and supplies. Similarly the work during the 2010 field season was short duration and all black and grey water waste was collected on-site and shipped off-site for disposal. There was no sewage lagoon used during the 2010 program.

Spill Contingency Plan

As prescribed in the Water Licence, a site specific Spill Contingency Plan was prepared by INAC and submitted to the NWB. The submission was prepared in accordance with the provisions of the Government of Nunavut *Spill Contingency Planning and Reporting Regulations* and the GNU document entitled *Contingency Planning and Reporting in Nunavut: a Guide to the New Regulations*. In addition, QMLP also prepared a site specific Spill Contingency Plan as part of their site specific Health and Safety Plan.

No spills were reported during the course of the 2008 field works.

During the mobilization program in April 2009 a small spill of diesel fuel did take place at the Ida Bay Mine site as a result of a drain valve having opened on the excavator when snow was being removed from the engine compartment. It was estimated that approximately 120 litres of fuel was spilled on to the snow underlying the excavator. The area of impact was immediately contained with an earthen berm once the excavator was relocated. Initially attempts were made to collect the spill using absorbent pads however due to the extreme cold this proved ineffective. Given the potential for the spill to migrate into the subsurface during the freshet a field decision was made to incinerate the fuel. This was effective in mitigating the potential concerns with the spill. Review of the spill location by the resident engineer did not identify any concerns at this location aside from some minor burn residue on the waste rock underlying the burn area. Further review of the area will take place in 2010 during the field program at Ida Bay. A copy of the spill report was submitted to Mr. Andrew Kiem, the Water Resources Officer for INAC Nunavut Regional Office on April 22, 2009.

Pursuant to the instructions provided by Mr. Kiem 23 April 2009, Ms. Melissa Joy of the INAC Kitikmeot office in Kugluktuk was to review the spill site during a 2009 site inspection. This

inspection did not take place. The area in question was excavated, and soil packaged and transported off-site for disposal. Confirmatory samples were taken by the Engineer and Quantum Murray LP was instructed by the Engineer that the area was clean based on the test results.

No spills were observed during the course of the spring and summer 2010 field programs.

Monitoring Program

Pursuant to the terms and conditions of the Water Licence a monitoring program, as summarized below, was developed for the Roberts Bay and Ida Bay site. A copy of the Roberts Bay and Ida Bay Long Term Monitoring Plan is provided in Appendix C.

Table 13 Summary of Water Monitoring

Monitoring	Station Description	Parameter	Frequency	Comment
ROB-1	Water Supply intake at unnamed Lake adjacent Camp	Volume	Daily	Information is appended in Appendix A
ROB-2	Water Supply intake at Roberts Lake	Volume	Daily	No water taken from this lake.
ROB-3	Sewage pumped to the Sewage Disposal Facility	Volume	Monthly and Annually	July – 34 m^3 August – 117 m^3 Annual – 150 m^3
ROB-4	Final Point Discharge from the Sewage Lagoon	Volume & Water Quality	Once upon commencement of discharge and at completion of remediation	150 m^3 discharged. Chemistry is appended in Appendix A
ROB-5	Discharge from Tailings Pond	Volume & Water Quality	During periods of flow	No water discharged from Tailings Pond.
ROB-6	The stream flowing south to Roberts Lake	Water Quality	Annually after spring melt	Moderate flow to stream.
ROB-7	The stream(s) flowing north and west around the bedrock ridge.	Water Quality	Annually after spring melt	Low flow of surface water north of former camp area.
ROB-8	Streams flowing W from former tailings pond area	Water Quality	Annually after spring melt	No evidence of surface water flow in the immediate vicinity of the area to the west of the SWDF.
ROB-9	Roberts Lake (background)	Water Quality	Annually after spring melt	Lake level consistent during remediation program.
ROB-10	Runoff leachate from SWMF	Water Quality	Annually after spring melt	No evidence of runoff or seepage from the Solid Waste Disposal Facility.
ROB-11	Runoff and leachate from the Landfill	Water Quality	Annually after spring melt	No evidence of runoff or seepage for the former domestic waste landfill area.
ROB-12	Tailings	Temperature	As determined	Not part of remediation program

The results of the 2010 water sampling at the above noted monitoring location are provided in Appendix C.

The implementation of the Long-term Monitoring Program will commence upon completion of the remediation program in 2010.

Abandonment and Restoration Plan

Pursuant to the terms and conditions of the Water Licence, an Abandonment and Restoration Plan was developed for the Roberts Bay and Ida Bay site and submitted to the NWB on February 9, 2009. A copy of the Roberts Bay and Ida Bay Abandonment and Restoration Plan is provided in Appendix C.

The implementation of this plan at the Roberts Bay site was undertaken during the 2009 field season while the work at Ida Bay was completed in 2010.

Additional Information - Summary of Water Consumption

In addition to the issues identified above, the Water Licence also restricted the quantity of water used daily to less than five (5) cubic metres.

QMLP used a body of water located northeast of the site, identified as Unnamed Lake, for their potable water source during the 2009 remediation program. This water was supplemented by bottled water which was typically used for drinking water.

The total volume of water recovered from Unnamed Lake for the duration of the 2009 field season was 150 m^3. During the two months of operation 33.974 m^3 of water was taken in July and 117.3 m^3 in August. The daily average for the duration of the work was 2.9 m^3/day.

No modifications or repairs to the water supply system were required during the course of the 2009 field season.

No water was recovered from the local water bodies as part of the 2010 field programs.

Summary

Under the General Conditions section of the NWB Licence, there is a requirement for the Licensee to prepare an Annual Report which is to be completed by the 31st March of the year following the calendar year being reported. Details on the information requested in this annual report are provided throughout this document and as such we have provided section references in the table below (Table 14). A separate annual report will be prepared by INAC as a separate stand-alone report.

Table 14 Summary of NWB Licence Information Requirements

Topic	Relevant Section of Report
a) Monthly and annual quantities of fresh water obtained from all sources (m^3)	Section 4.1
b) Monthly and annual quantities of Sewage generated (m^3)	Section 4.1
c) Monthly and annual quantities of material deposited in Waste Disposal Facilities	Section 3.4.3
d) Summary of all waste backhauled for disposal at approved facilities	Section 4.1
e) Summary of construction work, modifications and major maintenance work carried out on the Water Supply Facilities, Solid Waste Disposal Facilities and Sewage Disposal Facility	Section 4.1
f) Tabular Summary of all data collected during the Monitoring Program	Section 4.1 Appendix A
g) An analysis of data collected during Monitoring Program and a brief description of any future studies.	Section 4.1
h) Summary of remediation work undertaken during the year and an outline of work anticipated for the following year	Section 3.4
i) A summary of any studies requested by the Board	None requested
j) A list of unauthorized discharges and a summary of follow-up actions taken	Section 4.1
k) Any revision to the Remediation Plan	No revisions
l) Any revisions to: • Spill Contingency Plan • Tailings Dewatering Plan • Sewage Operations and Maintenance Plan • Solid Waste Disposal Facility Management Plan • Quarry Management Plan	 No revision Not required No revision No revision No revision
m) A public consultation report describing consultation with local organizations and the resident of nearby communities.	Section 2.1
n) A brief summary of work done to address concerns or deficiencies listed in the inspection reports and/or compliance reports prepared by the Inspector.	Section 4.1
o) Executive Summary in English, Inuktitut and Inuinnaqtun of all Plans, Reports or Studies.	See Executive Summary
p) Any other details on water use or waste disposal requested by the Board by 1st November of the year being reported.	No requests made.

4.2 LAND USE PERMIT

The INAC Land Administration group issued a Land Use Permit (LUP), Permit No. N2007X0006, for the Site Remediation of the Ida Bay and Roberts Bay Mine Sites. Kitimeot, Nunavut on April 2, 2007. This initial permit was valid from April 2, 2007 to April 1, 2009. The permit was extended twice: April 1, 2009 to April 1, 2010 and April 1, 2010 to April 1, 2011 to enable the completion of the site remediation works at Roberts Bay and Ida Bay.

Under the requirements of the Land Use Permit the proponent is to submit an annual report to provide information on the topics tabled below. Details on the information requested are provided throughout this document and as such we have provided section references in the table below. The annual report will be a separate stand-alone report to be issued by INAC.

Table 15 Summary of Land Use Permit Information Requirements

Topic	Report Section Reference
a) Summary of activities undertaken for the year including contaminated soil management	Section 3.4.3
b) A work plan for the following year	Section 3.4.4
c) An update on the extent of contamination on-site and supporting documentation	Section 3.4.3
d) Wildlife encounters and actions/mitigation taken	Section 3.3.4
e) A summary of local hires and initiatives	Sections 2.2, 2.3 and 2.4
f) A summary of community consultation undertaken and the results.	Section 2.1
g) A summary of site visits by inspectors with results and follow-up actions	Section 3.3
h) A summary of site visits with community members	None during 2009 or 2010
i) Site photos and updated site maps	See rear of report
j) The number of barges utilized	No barges used in 2009 and only one in 2010.
k) Issues related to monitoring including updates to the Plan	Section 4.1
l) A summary of how it has complied with all project Terms and Conditions and how the terms and conditions are achieving their purpose	Entire Report

4.3 QUARRY PERMIT

This issue is discussed in the context of the Water Licence as noted in Section 4.1.

4.4 BURN PERMIT

The Land Use Permit prescribed the use of a forced air fuel fired incinerator to incinerate all combustible garbage and debris. All combustible solid waste from the camp operations was incinerated in this manner. The ash residue was sampled and tested with the ash reported to be free of any contamination and as such the ash was placed in the on–site SWMF. The non-treated wood debris encountered on-site was also managed in a similar manner with designated burn pits established and the residual ash sampled and tested prior to relocation into the SWMF.

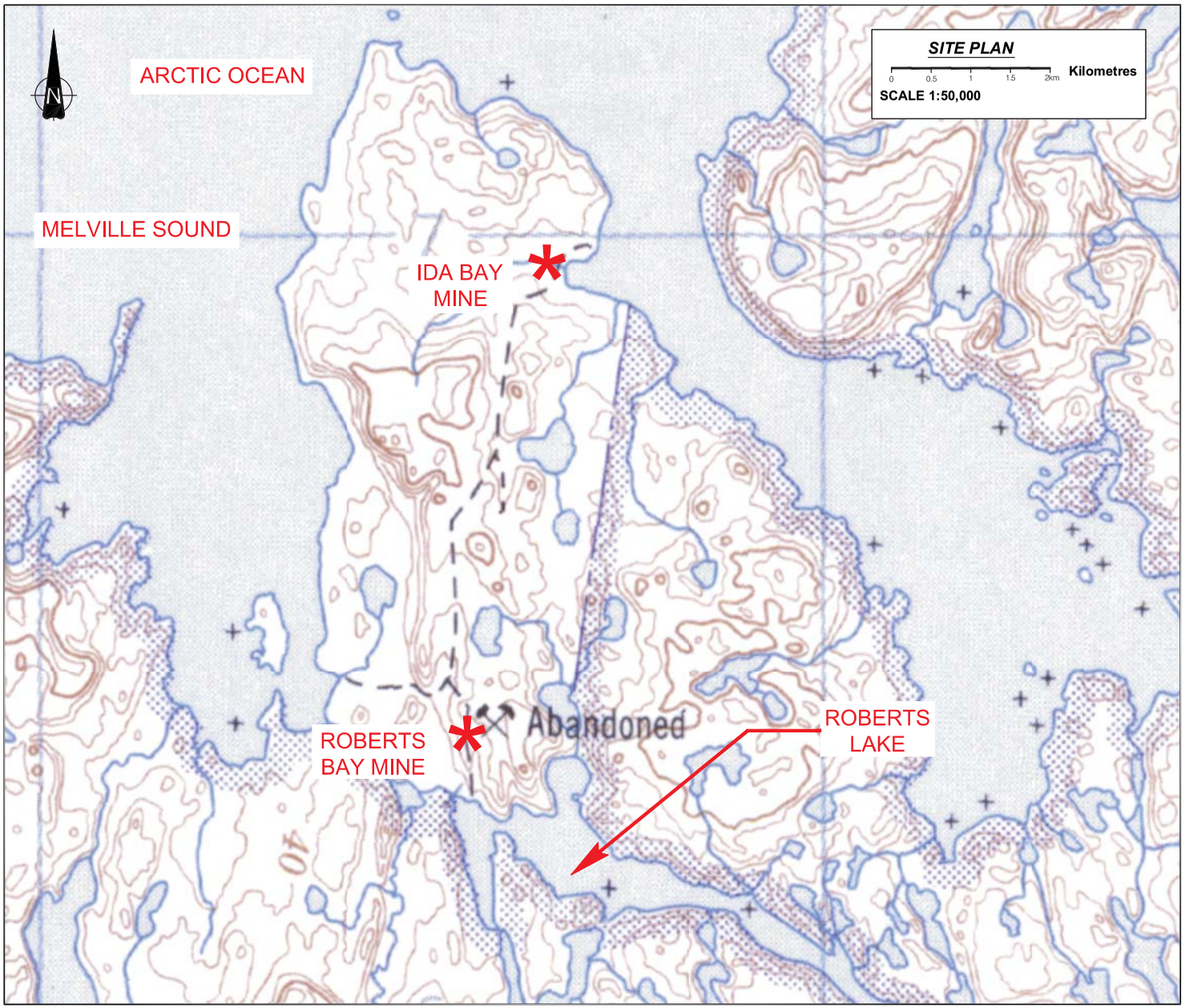
4.5 SPILL REPORTING

This issue is discussed in the context of the Water Licence as noted in Section 4.1.

5.0 SUMMARY

In general the remediation program at the former Roberts Bay and Ida Bay mine sites was completed in accordance with the provisions of the Remediation Plan and the NWB Licence. Over the period of two field seasons the residual debris was removed from site, the mine openings were sealed in accordance with the regulatory requirements, the metal and petroleum impacted soils were successfully removed from site, the areas of earthworks were graded to promote surficial drainage across the former work areas, the former domestic camp landfill was capped along with the former tailings pond, three thermistors were installed within the limits of the former tailings pond and a solid waste management facility was constructed in accordance with the remediation specifications.

As a whole the remediation program at the Roberts Bay and Ida Bay mine sites was successfully completed and only the long-term monitoring program remains to be implemented. The results of verification analysis on soil samples procured from the former areas of metals and/or petroleum hydrocarbon impacts reported that the soil at the final limits of the earthworks meet the clean-up criteria outline in the NWB Licence. All non-hazardous and hazardous debris was containerized and shipped off site for disposal along with all the impacted soils. No remediation work remains to be completed on-site.



KEY PLAN

NOT TO SCALE

REFERENCE:

1. Government of Canada, Natural Resources Canada, Centre for Topographic Information - TOPO-077A_1_1 Map, TOPO-077A03_1_0 Map & TOPO-077A06_1_0 Map

NOTE:

The coordinate system shown on this drawing is

UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

Public Works and Government Services Canada / **Travaux publics et Services gouvernementaux Canada**

Indian and Northern Affairs Canada / **Affaires indiennes et du Nord Canada**

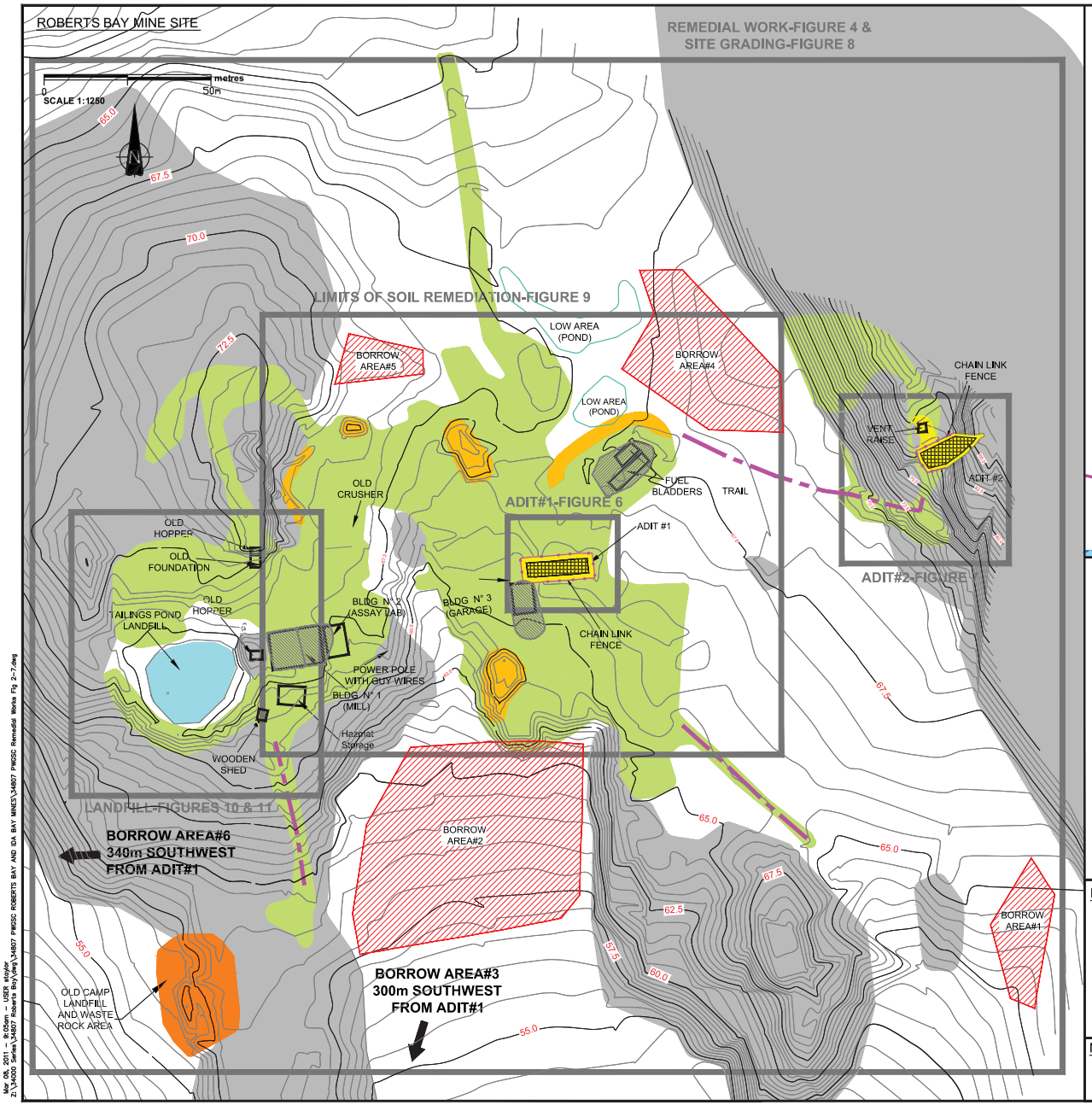
ROBERTS BAY AND IDA BAY MINE SITES
REMEDIATION PROGRAM

ROBERTS BAY AND IDA BAY OVERALL SITE

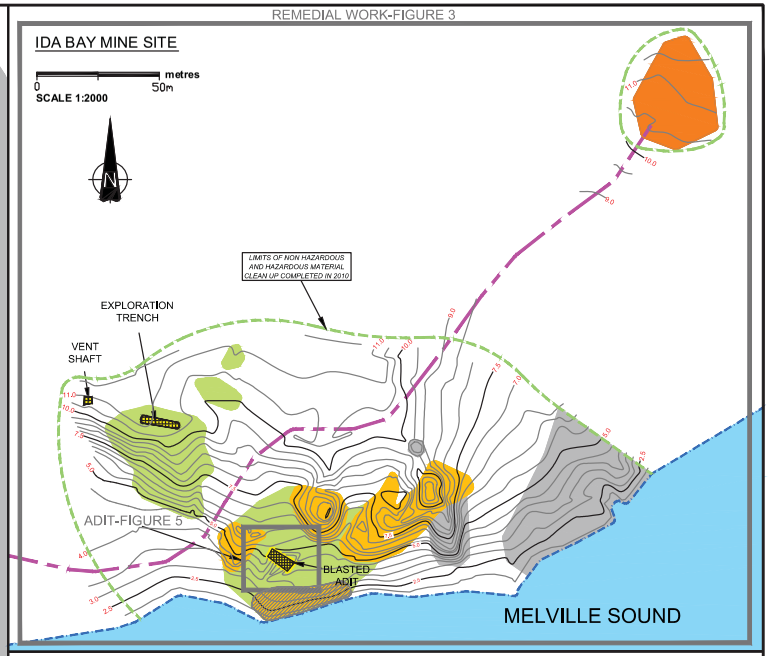
SENES Consultants

Project Number	Figure
34807	1

May 05, 2011 – 9:00am – USER display
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Overall Site Plan Fig 1.dwg



REMEDIAL WORK-FIGURE 3



LEGEND:

- LIMITS OF WASTE ROCK
- LIMITS OF WASTE ROCK PILE
- LIMITS OF MINE OPENING SEALS
- LIMITS OF OLD MINE CAMP AREA TO BE CAPPED
- CONSTRUCT SOLID WASTE MANAGEMENT FACILITY IN FORMER TAILINGS POND
- LIMITS OF BORROW AREA
- LIMITS OF ROCK OUTCROP
- LIMITS OF METAL AND PETROLEUM HYDROCARBON CONTAMINATION
- ORIGINAL MINE OPENINGS
- EXISTING STRUCTURES
- SHORELINE
- EXISTING TRAIL
- CHAIN LINK FENCE
- CONTOUR (MAJOR-2.5 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)
- LIMITS OF DEBRIS CLEAN UP

REFERENCE:

1. FOCUS CORPORATION, PROJECT N° : 010019242, DATED 2009-09-13.
2. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829 SHEET 1 of 2, DATED 2009-07-12.
3. AMEC LAND SURVEYS LIMITED, PROJECT N° : ALS050052, DWG N° : ALS050052-SITE, FIGURE 8, DATED 2005-09

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

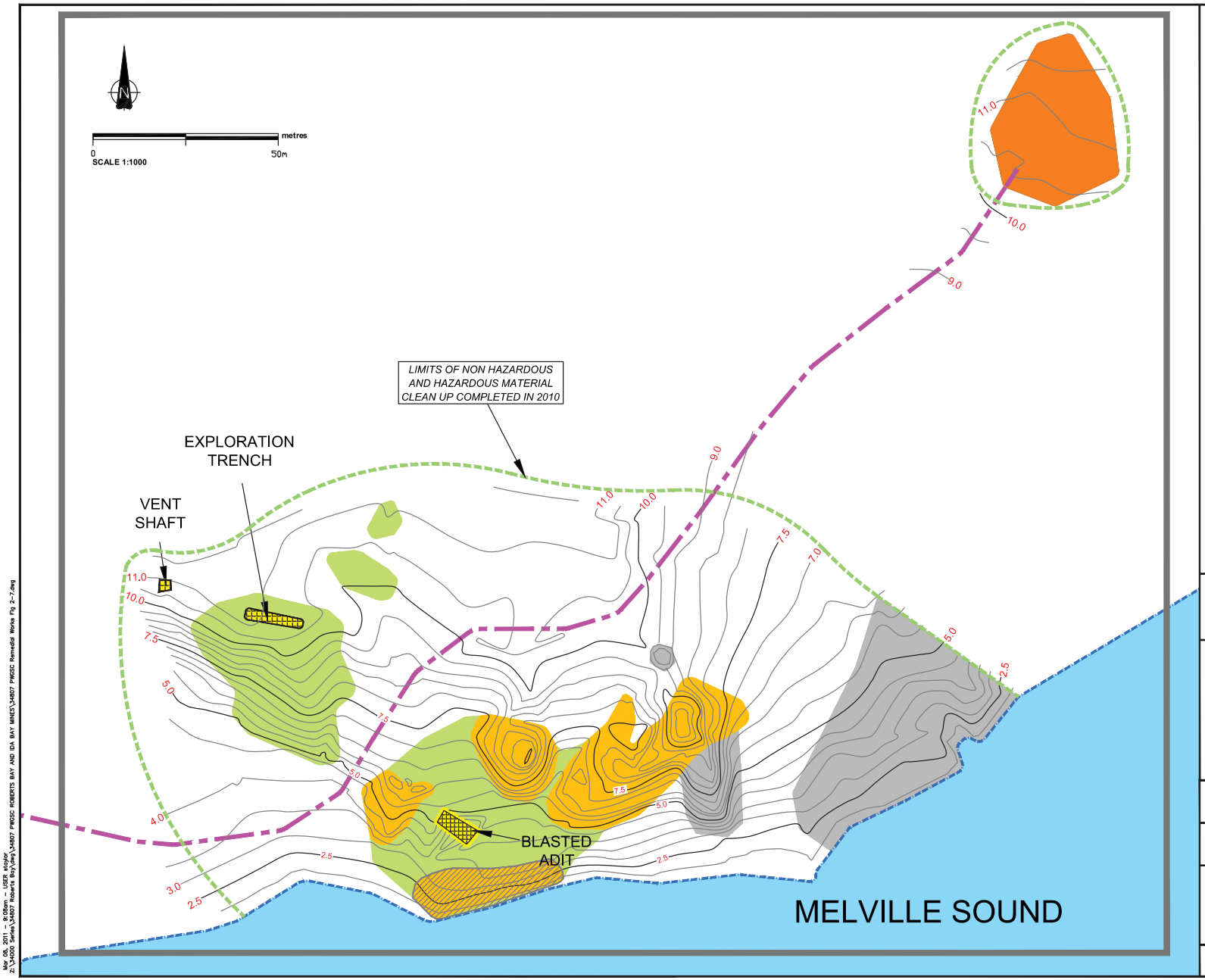
Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

ROBERTS BAY AND IDA BAY OVERALL REMEDIAL WORKS

SENES Consultants | Project Number 34807 | Figure 2

Mar 09, 2011 – 9:05am – USER dtaylor
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Remedial Works Fig 2-7.dwg



LEGEND:

- LIMITS OF WASTE ROCK
- LIMITS OF WASTE ROCK PILE
- LIMITS OF MINE OPENING SEALS
- LIMITS OF OLD MINE CAMP AREA
- LIMITS OF ROCK OUTCROP
- REGRADED WASTEROCK ALONG SHORELINE
- ORIGINAL MINE OPENINGS
- SHORELINE
- EXISTING TRAIL
- CONTOUR (MAJOR-2.5 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)
- LIMITS OF DEBRIS CLEAN UP

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

REFERENCE:

1. FOCUS CORPORATION, PROJECT N° : 010019242, DATED 2009-09-13.
2. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829 SHEET 1 of 2, DATED 2009-07-12.
3. AMEC LAND SURVEYS LIMITED, PROJECT N° : ALS050052, DWG N° : ALS050052-SITE, FIGURE 8, DATED 2005-09

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

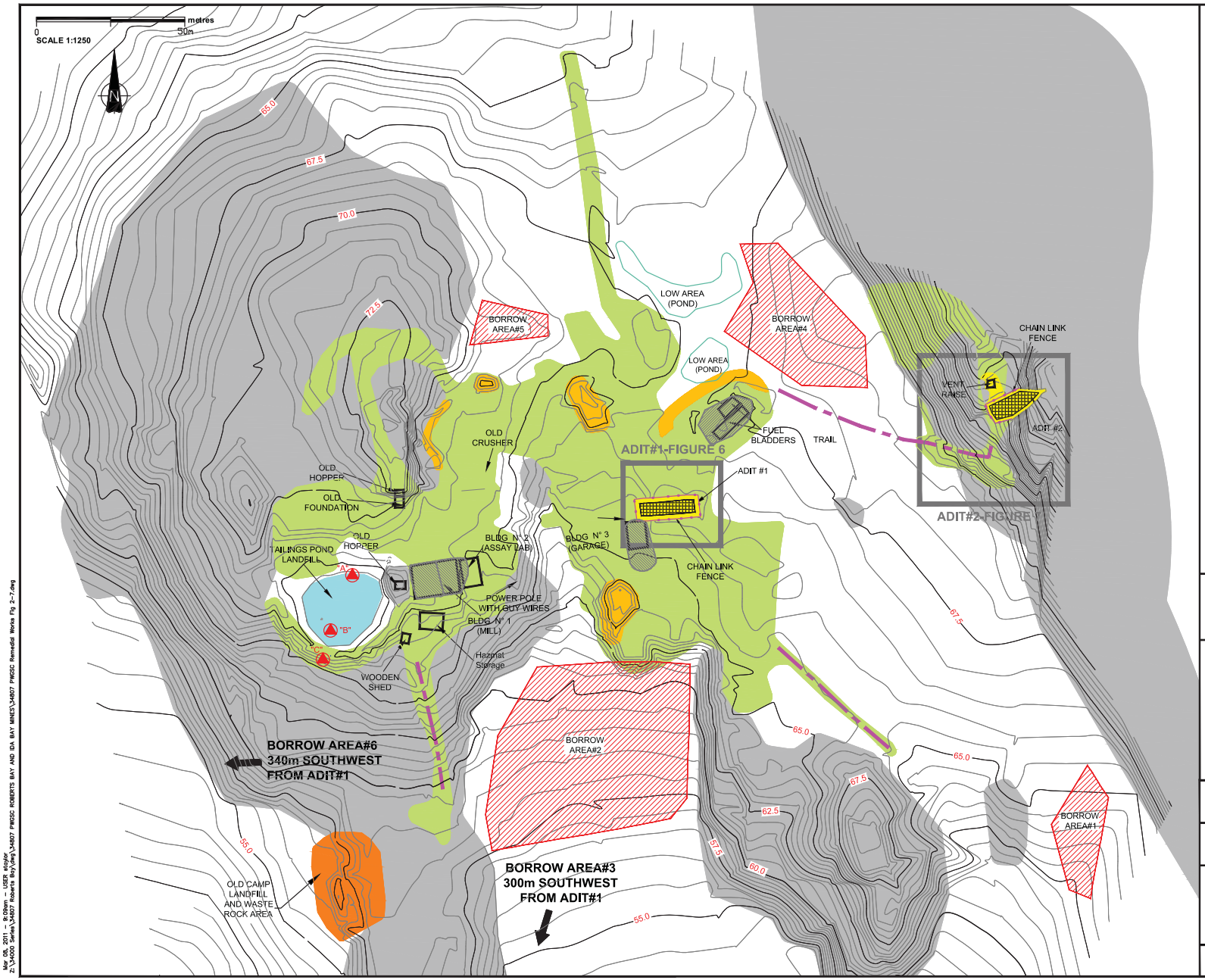
Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

IDA BAY REMEDIAL WORKS

SENES Consultants	Project Number	Figure
	34807	3

May 05, 2011 – 9:08am – USER dtaylor
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Remedial Works Fig 2-7.dwg



LEGEND:

- LIMITS OF WASTE ROCK *(FINAL LIMITS OF REGRADE SEE FIGURE 8)*
- LIMITS OF WASTE ROCK PILE *(REGARDED TO MATCH SURROUNDING GRADES SEE FIGURE 8)*
- LIMITS OF MINE OPENING SEALS
- CAP LIMITS OF OLD MINE CAMP AREA
- SOLID WASTE MANAGEMENT FACILITY (SWMF) CONSTRUCTED IN ORIGINAL TAILINGS POND
- LIMITS OF BORROW AREA
- LIMITS OF ROCK OUTCROP
- INITIALS LIMITS OF METAL AND PETROLEUM HYDROCARBON CONTAMINATION CLEAN UP *(SEE FIGURE 9 FOR FINAL LIMITS)*
- EXISTING STRUCTURES - DEMOLISHED AND PLACED INTO SWMF
- ORIGINAL MINE OPENINGS
- EXISTING TRAIL
- CHAIN LINK FENCE
- CONTOUR (MAJOR-2.5 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)
- "A" THERMISTERS INSTALLED AT SWMF

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

REFERENCE:

1. FOCUS CORPORATION, PROJECT N° : 010019242, DATED 2009-09-13.
2. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829 SHEET 1 of 2, DATED 2009-07-12.
3. AMEC LAND SURVEYS LIMITED, PROJECT N° : ALS050052, DWG N° : ALS050052-SITE, FIGURE 8, DATED 2005-09

Public Works and Government Services Canada / **Travaux publics et Services gouvernementaux Canada**

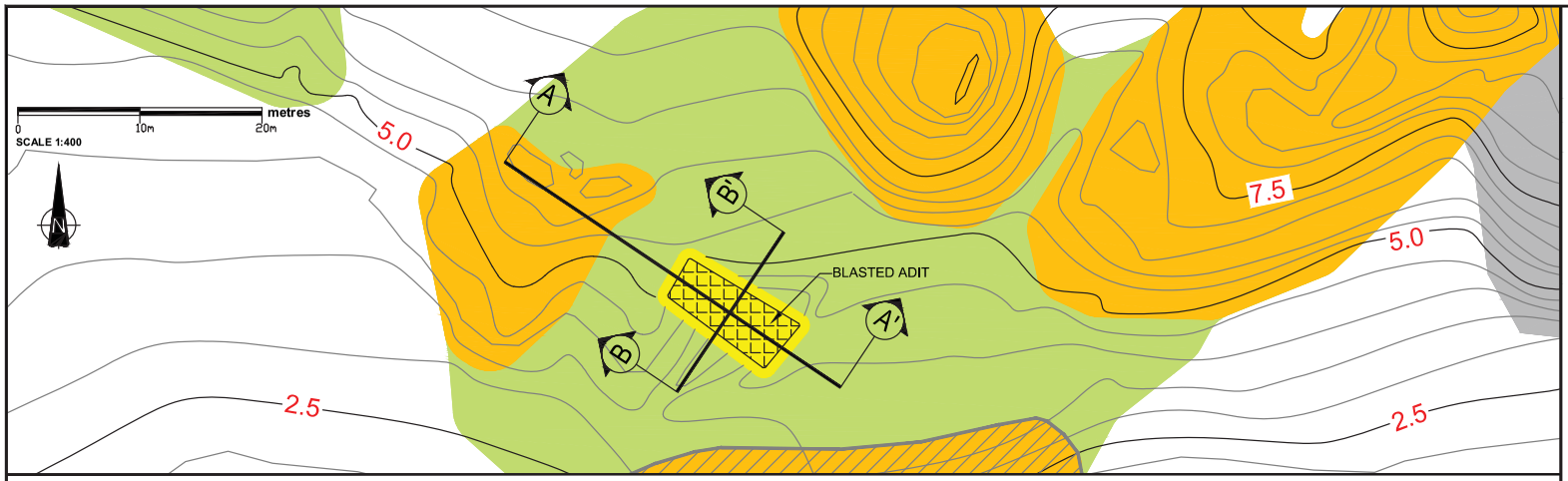
Indian and Northern Affairs Canada / **Affaires indiennes et du Nord Canada**

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

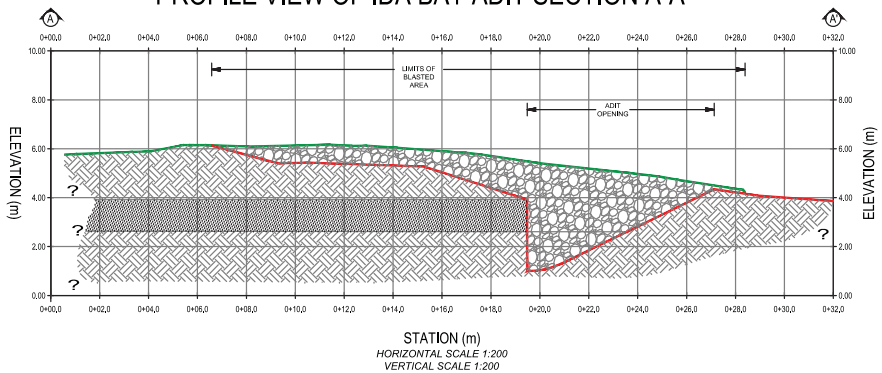
ROBERTS BAY REMEDIAL WORKS

SENES Consultants	Project Number	Figure
	34807	4

Mar. 05, 2011 – 9:09am – USER display
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Remedial Works Fig 2-7.dwg

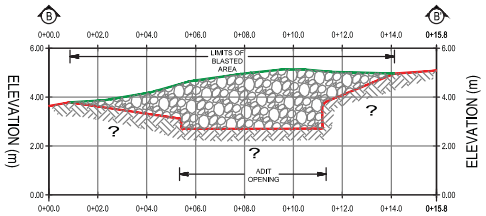


PROFILE VIEW OF IDA BAY ADIT SECTION A-A'



HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

PROFILE VIEW OF IDA BAY ADIT SECTION B-B'



HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

LEGEND:

- LIMITS OF WASTE ROCK
- LIMITS OF WASTE ROCK PILE
- LIMITS OF MINE OPENING SEAL
- LIMITS OF BLASTED ROCK COVER (INTERIM SURFACE)
- ORIGINAL BEDROCK SURFACE
- INFERRED ADIT TUNNEL
- ORIGINAL MINE OPENINGS
- CONTOUR (MAJOR-2.5 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)
- PRE REMEDIATION GRADES
- INTERIM GRADES OVER ADIT (FINAL GRADES TO BE SET IN 2010)
- CROSS SECTION

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

REFERENCE:

1. FOCUS CORPORATION, PROJECT N° : 010019242, DATED 2009-09-13.
2. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829 SHEET 1 of 2, DATED 2009-07-12.
3. AMEC LAND SURVEYS LIMITED, PROJECT N° : ALS050052, DWG N° : ALS050052-SITE, FIGURE 8, DATED 2005-09

Public Works and Government Services Canada / **Travaux publics et Services gouvernementaux Canada**

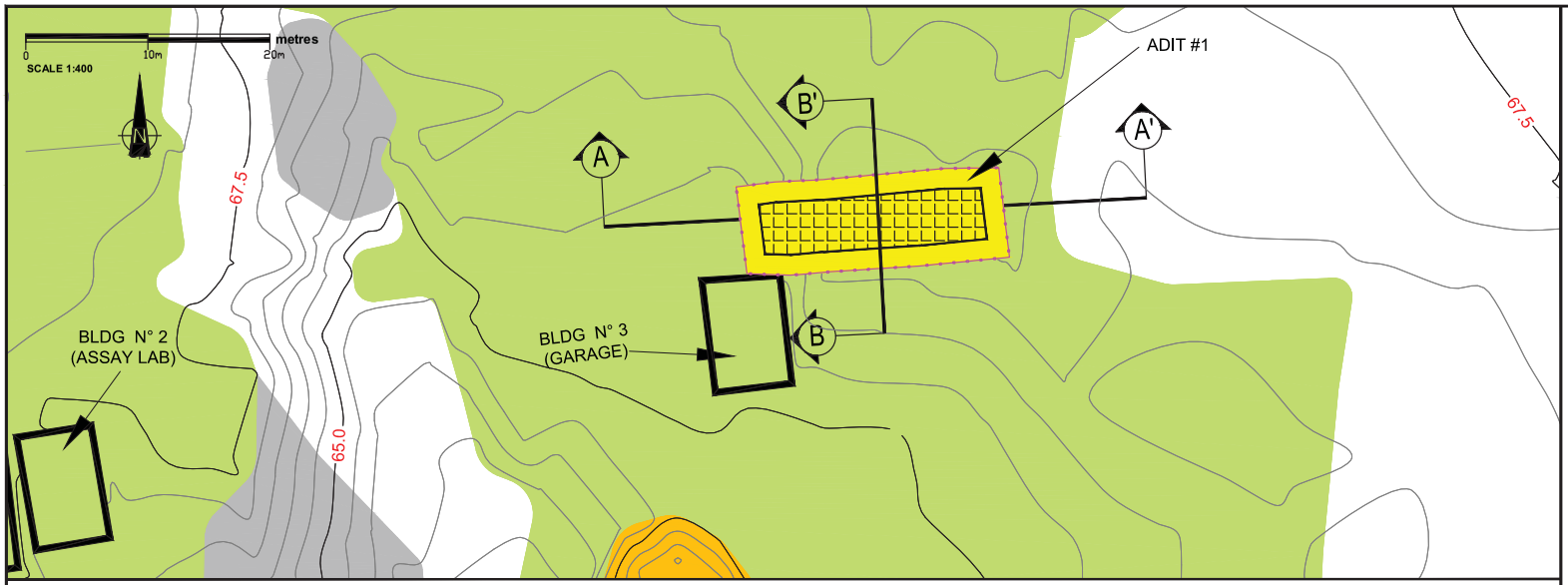
Indian and Northern Affairs Canada / **Affaires indiennes et du Nord Canada**

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

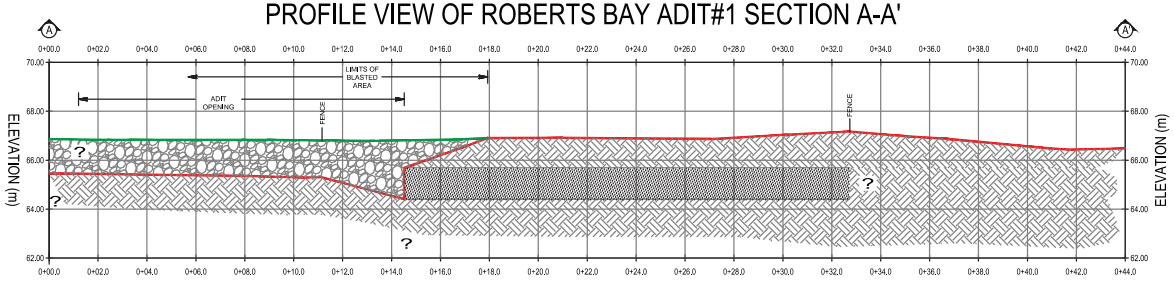
IDA BAY MINE OPENING ADIT AS-BUILT PLAN

SENES Consultants	Project Number	Figure
	34807	5

Mar 08, 2011 – 8:10am – USER: eloyko
Z:\34000 Series\34807 Roberts Bay\Dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Remedial Works Fig 2-7.dwg

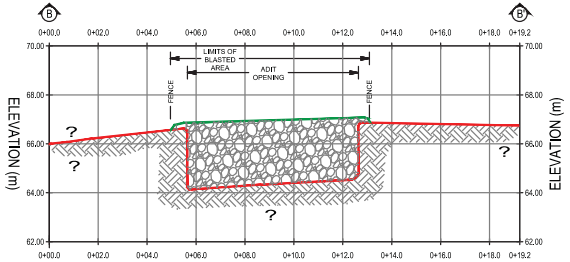


PROFILE VIEW OF ROBERTS BAY ADIT#1 SECTION A-A'



HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

PROFILE VIEW OF ROBERTS BAY ADIT#1 SECTION B-B'



HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

LEGEND:

- LIMITS OF WASTE ROCK
- LIMITS OF WASTE ROCK PILE
- LIMITS OF MINE OPENING SEAL
- LIMITS OF ROCK OUTCROP
- ORIGINAL MINE OPENINGS
- EXISTING STRUCTURES
- EXISTING GROUND SURFACE
- LIMITS OF BLASTED ROCK COVER
- ORIGINAL BEDROCK SURFACE
- INFERRED ADIT TUNNEL
- CONTOUR (MAJOR-2.5 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)
- PRE REMEDIATION GRADES
- FINAL GRADES OVER ADIT
- CHAIN LINK FENCE
- CROSS SECTION

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

REFERENCE:

1. FOCUS CORPORATION, PROJECT N° : 010019242, DATED 2009-09-13.
2. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829 SHEET 1 of 2, DATED 2009-07-12.
3. AMEC LAND SURVEYS LIMITED, PROJECT N° : ALS050052, DWG N° : ALS050052-SITE, FIGURE 8, DATED 2005-09

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

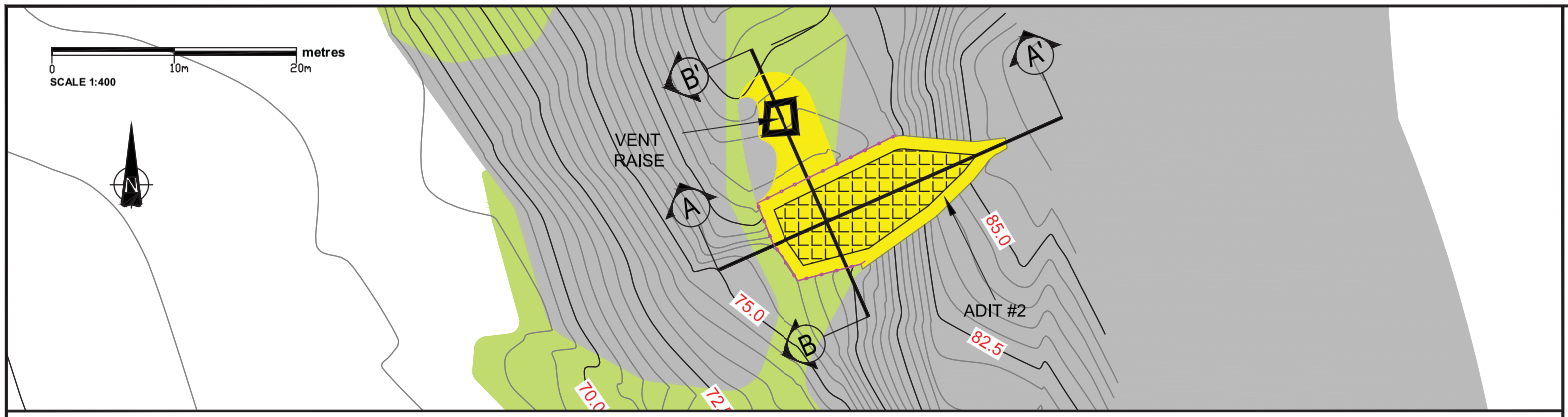
Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

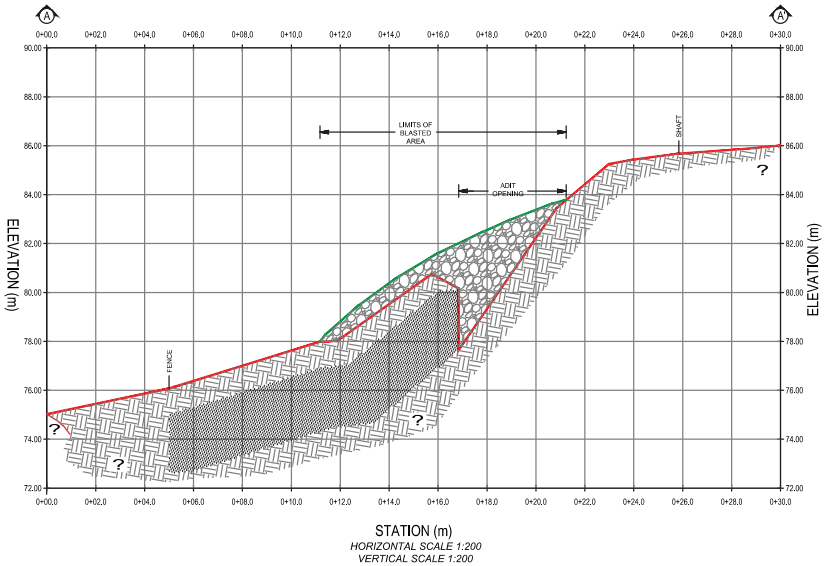
ROBERTS BAY MINE OPENING ADIT#1 AS-BUILT PLAN

SENES Consultants	Project Number	Figure
	34807	6

Mar 08, 2011 – 9:11am – USER stoykov
Z:\34000 Series\34807 Roberts Bay\Dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Remedial Works Fig 2-7.dwg

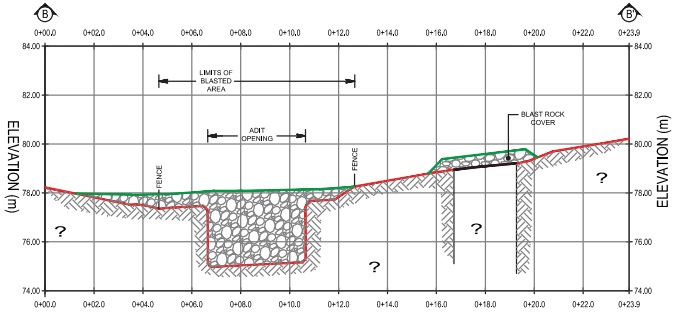


PROFILE VIEW OF ROBERTS BAY ADIT#2 SECTION A-A'



HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

PROFILE VIEW OF ROBERTS BAY ADIT#2 SECTION B-B'



HORIZONTAL SCALE 1:200
VERTICAL SCALE 1:200

LEGEND:

- LIMITS OF WASTE ROCK
- LIMITS OF WASTE ROCK PILE
- LIMITS OF MINE OPENING SEAL
- LIMITS OF ROCK OUTCROP
- ORIGINAL MINE OPENINGS
- EXISTING STRUCTURES
- EXISTING GROUND SURFACE
- LIMITS OF BLASTED ROCK COVER
- ORIGINAL BEDROCK SURFACE
- INFERRED ADIT TUNNEL
- CONTOUR (MAJOR-2.5 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)
- PRE REMEDIATION GRADES
- FINAL GRADES OVER ADIT
- CHAIN LINK FENCE
- CONCRETE VENT CAP (APPROXIMATELY 300mm)
- A A' CROSS SECTION

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

REFERENCE:

1. FOCUS CORPORATION, PROJECT N° : 010019242, DATED 2009-09-13.
2. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829 SHEET 1 of 2, DATED 2009-07-12.
3. AMEC LAND SURVEYS LIMITED, PROJECT N° : ALS050052, DWG N° : ALS050052-SITE, FIGURE 8, DATED 2005-09

Public Works and Government Services Canada | **Travaux publics et Services gouvernementaux Canada**

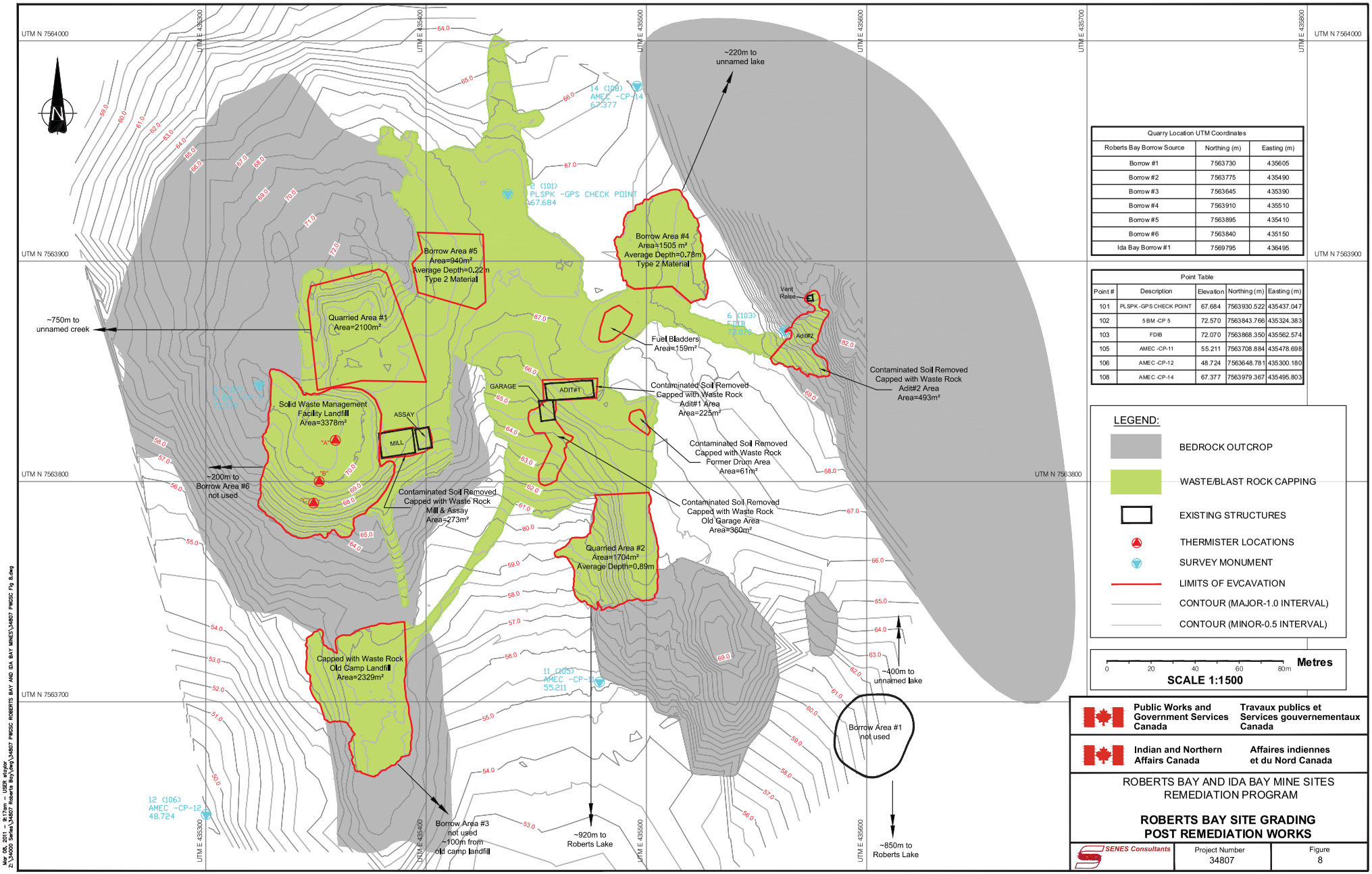
Indian and Northern Affairs Canada | **Affaires indiennes et du Nord Canada**

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

ROBERTS BAY MINE OPENING ADIT#2 AND VENT RAISE AS-BUILT PLAN

SENES Consultants | Project Number 34807 | Figure 7

Mar 08, 2011 – 9:12am – USER atoylor
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Remedial Works Fig 2-7.dwg



Quarry Location UTM Coordinates		
Roberts Bay Borrow Source	Northing (m)	Easting (m)
Borrow #1	7563730	435605
Borrow #2	7563775	435490
Borrow #3	7563645	435390
Borrow #4	7563910	435510
Borrow #5	7563895	435410
Borrow #6	7563840	435150
Ida Bay Borrow #1	7569795	436495

Point Table				
Point #	Description	Elevation	Northing (m)	Easting (m)
101	PLSPK -GPS CHECK POINT	67.684	7563930.522	435437.047
102	SBM -CP 5	72.570	7563843.766	435324.383
103	FDIB	72.070	7563868.350	435562.574
105	AMEC -CP-11	55.211	7563708.884	435478.698
106	AMEC -CP-12	48.724	7563648.781	435300.180
108	AMEC -CP-14	67.377	7563979.367	435495.803

LEGEND:

- BEDROCK OUTCROP
- WASTE/BLAST ROCK CAPPING
- EXISTING STRUCTURES
- THERMISTER LOCATIONS
- SURVEY MONUMENT
- LIMITS OF EVCAVATION
- CONTOUR (MAJOR-1.0 INTERVAL)
- CONTOUR (MINOR-0.5 INTERVAL)

0 20 40 60 80m Metres

SCALE 1:1500

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

ROBERTS BAY SITE GRADING POST REMEDIATION WORKS

SENES Consultants | Project Number 34807 | Figure 8

May 05, 2011 - 8:17am - USER stoyko
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Fig 8.dwg

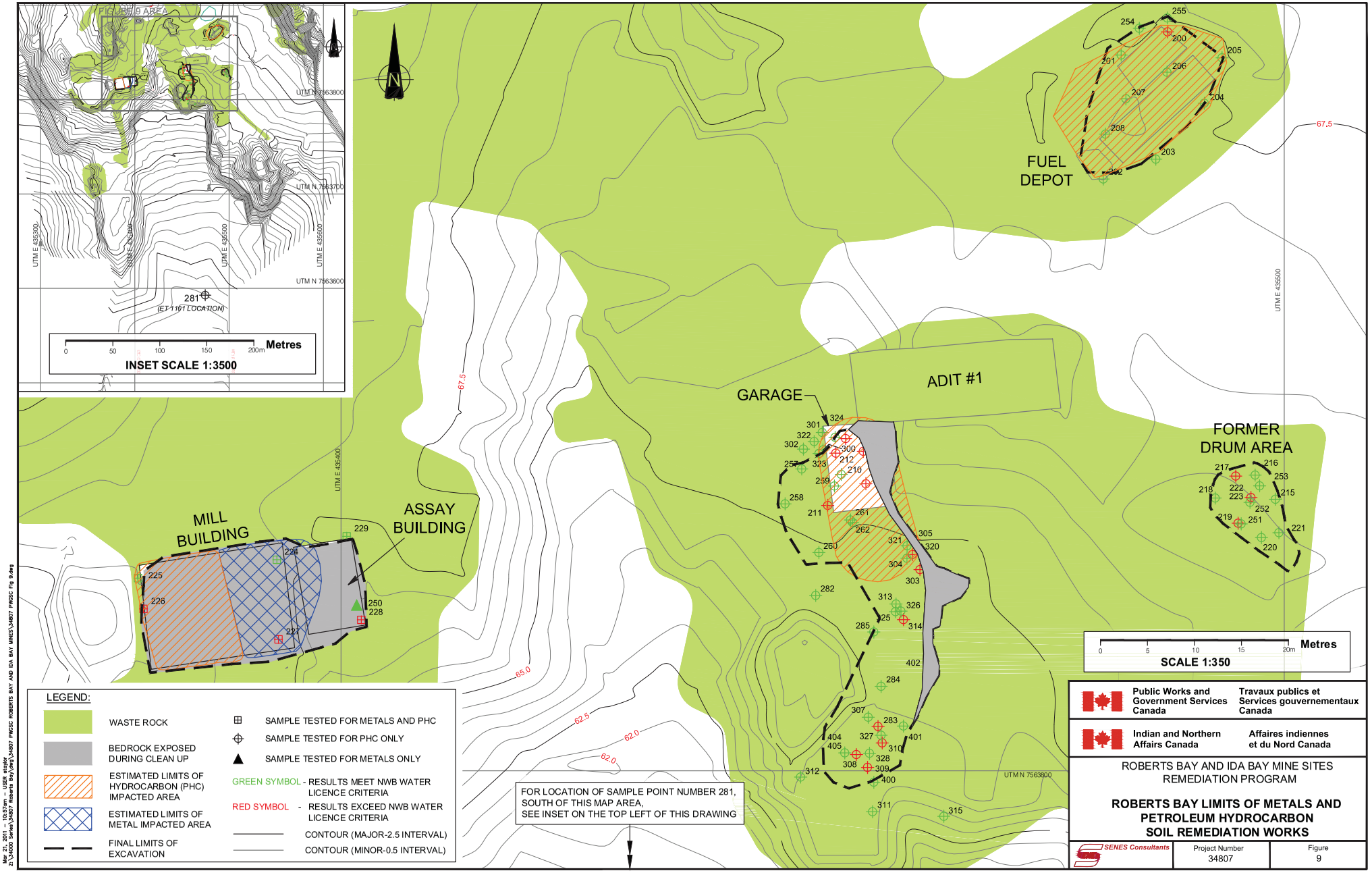
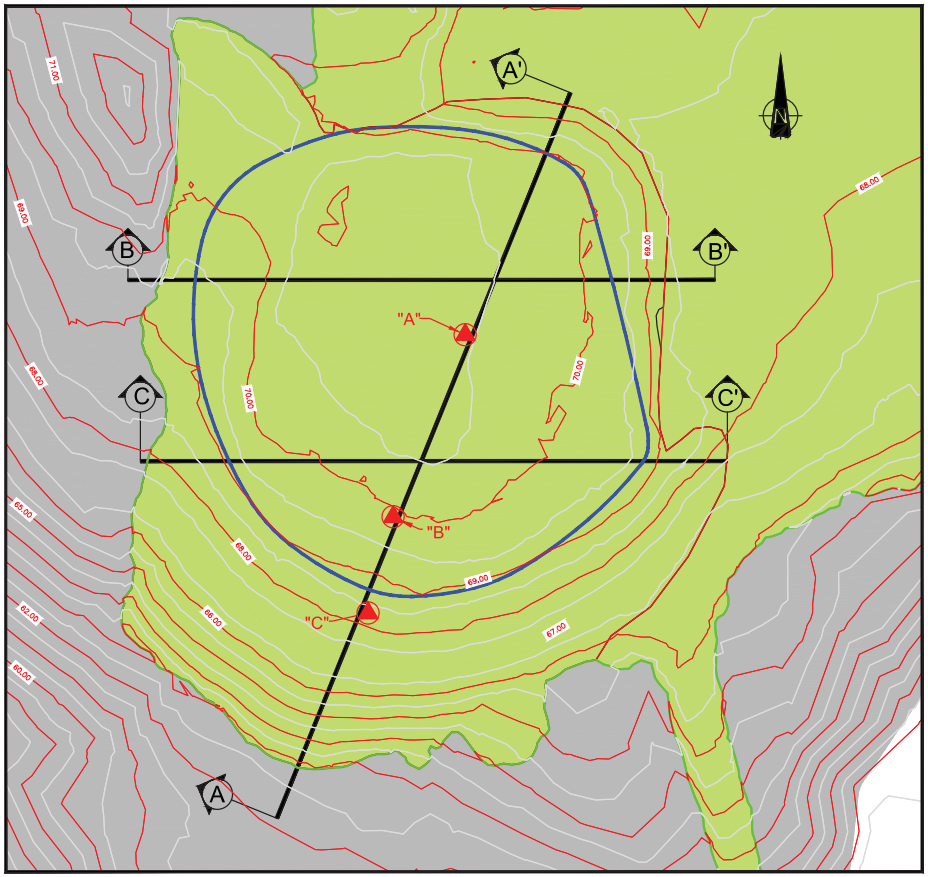
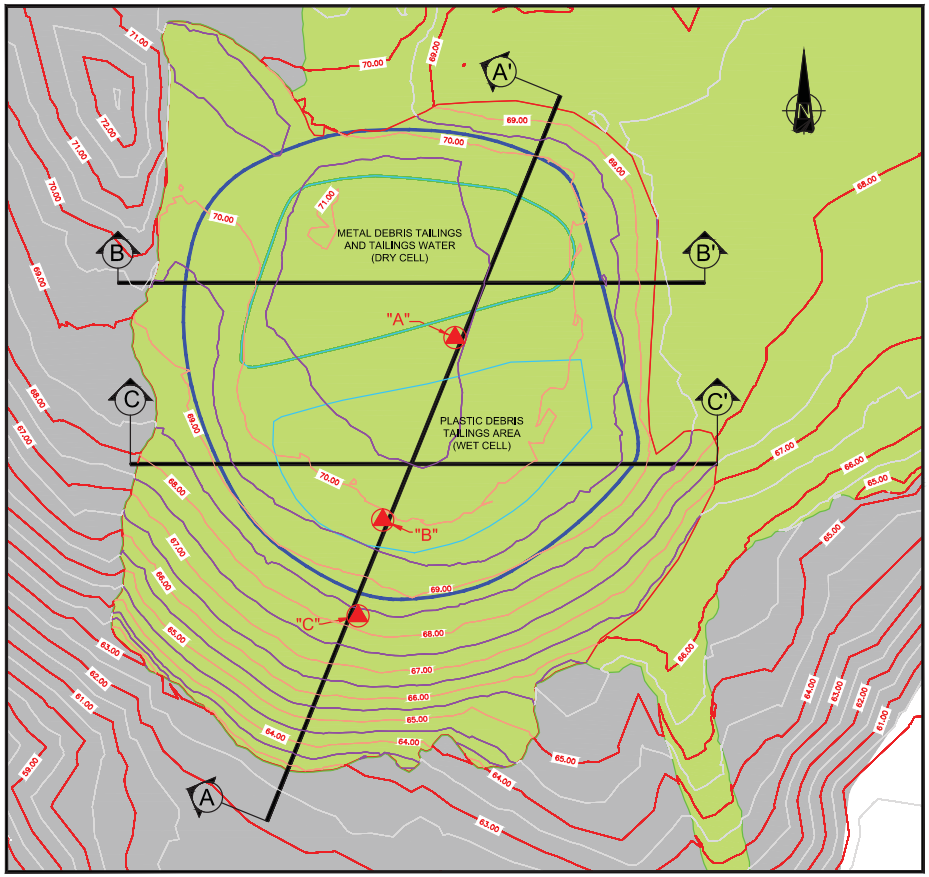


FIGURE 9 AREA
UTM N 7563800
UTM N 7563700
UTM N 7563600
UTM E 435300
UTM E 435400
UTM E 435500
UTM E 435600
281
(ET-1101 LOCATION)
0 50 100 150 200m Metres
INSET SCALE 1:3500
FUEL DEPOT
GARAGE
ADIT #1
FORMER DRUM AREA
MILL BUILDING
ASSAY BUILDING
67.5
65.0
62.5
62.0
62.0
0 5 10 15 20m Metres
SCALE 1:350
FOR LOCATION OF SAMPLE POINT NUMBER 281, SOUTH OF THIS MAP AREA, SEE INSET ON THE TOP LEFT OF THIS DRAWING
LEGEND:
WASTE ROCK
BEDROCK EXPOSED DURING CLEAN UP
ESTIMATED LIMITS OF HYDROCARBON (PHC) IMPACTED AREA
ESTIMATED LIMITS OF METAL IMPACTED AREA
FINAL LIMITS OF EXCAVATION
SAMPLE TESTED FOR METALS AND PHC
SAMPLE TESTED FOR PHC ONLY
SAMPLE TESTED FOR METALS ONLY
GREEN SYMBOL - RESULTS MEET NWB WATER LICENCE CRITERIA
RED SYMBOL - RESULTS EXCEED NWB WATER LICENCE CRITERIA
CONTOUR (MAJOR-2.5 INTERVAL)
CONTOUR (MINOR-0.5 INTERVAL)
Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada
Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada
ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM
ROBERTS BAY LIMITS OF METALS AND PETROLEUM HYDROCARBON SOIL REMEDIATION WORKS
SENES Consultants
Project Number 34807
Figure 9



PRE-REMEDIATION GRADES

0 20
Scale: 1: 500 (metres)



POST-REMEDIATION GRADES

0 20
Scale: 1: 500 (metres)

LEGEND

- EXISTING CONTOUR (MINOR-0.5m INTERVAL)
- EXISTING CONTOUR (MAJOR-1.0m INTERVAL)
- PROPOSED CONTOUR (MINOR-0.5m INTERVAL)
- PROPOSED CONTOUR (MAJOR-1.0m INTERVAL)
- LIMITS OF ORIGINAL TAILINGS POND
- THERMISTER
- CROSS-SECTION
- LIMITS OF DRY AND WET CELLS
- LIMITS OF WASTE ROCK
- LIMITS OF ROCK OUTCROP

REFERENCE:

1. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829, SHEET 2 of 2
2. FIGURE BASED ON AMEC LAND SURVEYS LIMITED DRAWINGS: ROBERTS BAY AND IDA BAY MINE SITE REMEDIATION, SHEETS 1-4, SEPTEMBER 2005

NOTE:

The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

Public Works and Government Services Canada / Travaux publics et Services gouvernementaux Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY MINE SITES REMEDIATION PROGRAM

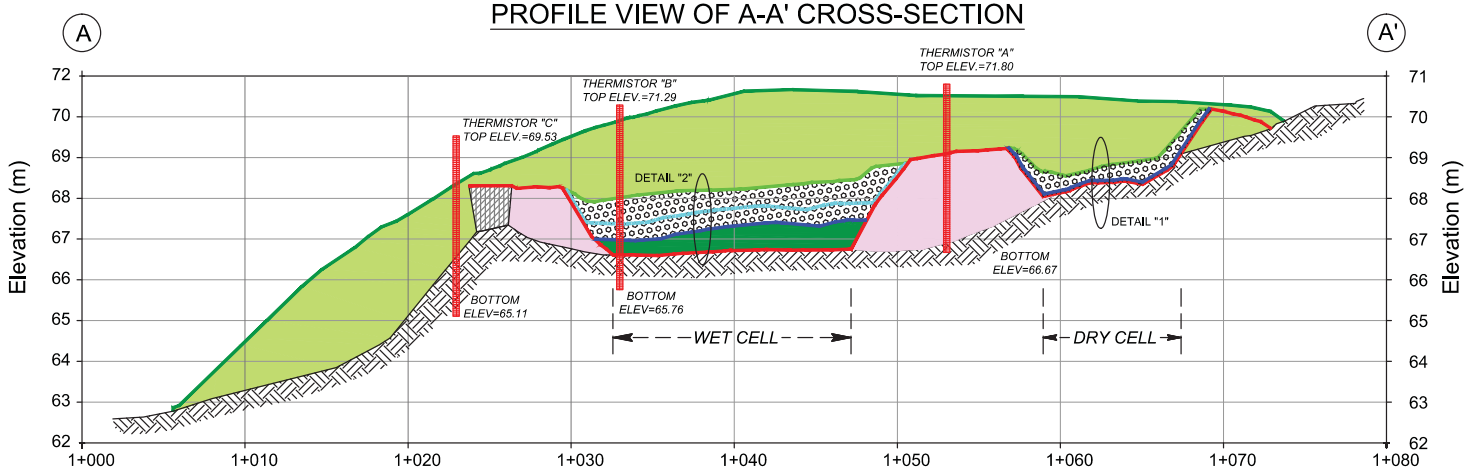
ROBERTS BAY TAILINGS POND LANDFILL AS-BUILT PLAN

SENES Consultants | Project Number 34807 | Figure 10

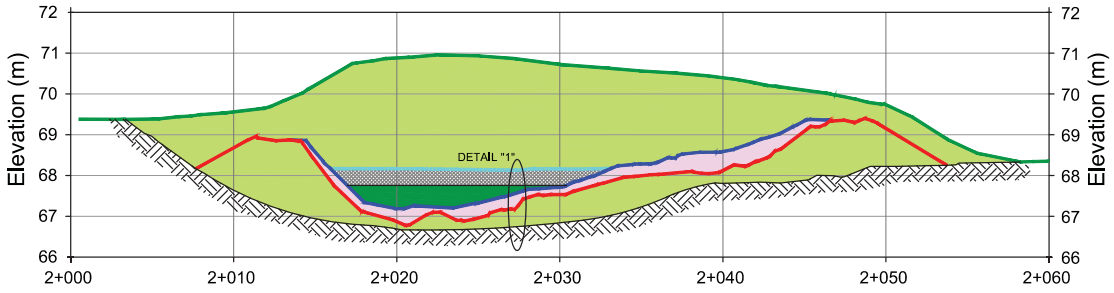
Mar 08, 2011 - 8:19am - USER stadler
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PMSS\ ROBERTS BAY AND IDA BAY MINES\34807 PMSS Fig 10 & 11.dwg

Mar 08, 2011 – 9:20am – USER stoylor
Z:\34000 Series\34807 Roberts Bay\dwg\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Fig 10 & 11.dwg

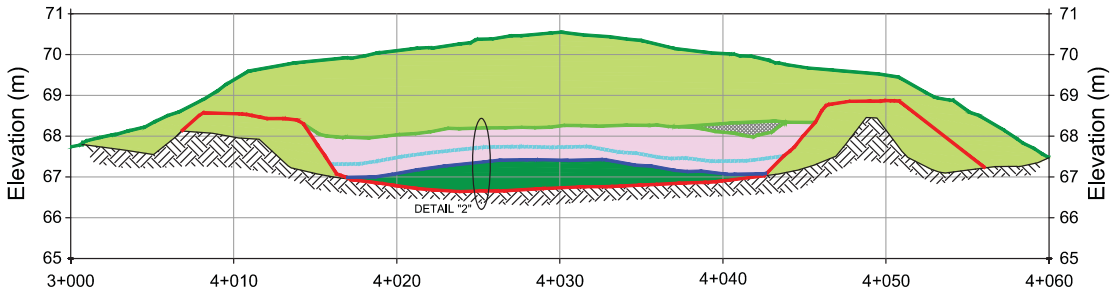
PROFILE VIEW OF A-A' CROSS-SECTION



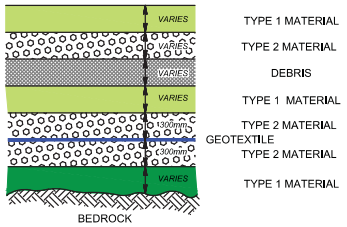
PROFILE VIEW OF B-B' CROSS-SECTION



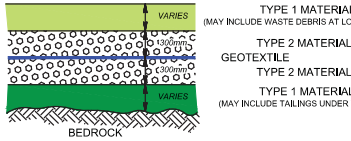
PROFILE VIEW OF C-C' CROSS-SECTION



DETAIL "1"
(NOT TO SCALE)



DETAIL "2"
(NOT TO SCALE)



LEGEND

- TYPE 1 WASTE ROCK
- TAILINGS MIXED WITH TYPE 1 MATERIAL
- TYPE 2 GRANULAR FILL
- INTERIM TYPE 2 GRANULAR FILL
- WASTE OR INTERMEDIATE COVER
- WOVEN GEOTEXTILE
- GEOTEXTILE LINER
- ORIGINAL BEDROCK SURFACE
- BENTONITE PLUG
- DEBRIS
- CONSTRUCTION OF INTERIM SURFACE
- TYPE 2 MATERIAL SURFACE
- FINAL CAP SURFACE
- THERMISTOR

metres
0 5 10 15 20
HORIZONTAL SCALE 1:300

metres
0 1 2 3 4 5m
VERTICAL SCALE 1:125

NOTE:
The coordinate system shown on this drawing is UTM with NAD83 datum, Zone 13, Meter; Central Meridian 105d W

REFERENCE:
1. PUBLIC WORKS AND GOVERNMENT SERVICES CANADA, PROJECT N° : 416829, SHEET 2 of 2
2. FIGURE BASED ON AMEC LAND SURVEYS LIMITED DRAWINGS: ROBERTS BAY AND IDA BAY MINE SITE REMEDIATION, SHEETS 1-4, SEPTEMBER 2005

Public Works and Government Services Canada | Travaux publics et Services gouvernementaux Canada

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY MINE SITES
REMEDIATION PROGRAM

ROBERTS BAY TAILINGS PONDLANDFILL
AS-BUILT CROSS-SECTION PLAN

SENES Consultants	Project Number	Figure
	34807	11

APPENDIX A

TECHNICAL SUPPORTING DOCUMENTS

- **QMLP Closure Report**
- **QMLP Photo Log**
- **QMLP As-Builts**
- **Hazardous Material and Debris Inventory**
- **Laboratory Certificates**
  - **Soil Chemistry**
  - **Water Chemistry**
  - **Incinerator Waste Chemistry**
  - **Letter from Maxxam on Peat Results (ET1101 Location)**

QMLP Closure Report

SENES

Project Record Documents

Roberts / Ida Bay Mine Site Remediation

Transportation and Disposal

Quantum Murray LP
100 – 3600 Viking Way
Richmond BC V6V 1N6

Table of Contents

Section 1: Summary Documentation
Section 2: Disposal of Hydrocarbon and Metals Contaminated Soil
Section 3: Disposal of Hydrocarbon Contaminated Soil
Section 4: Disposal of Hazardous Wastes
Section 5: Disposal of Lead Painted Mill Equipment

Quantum Murray LP
100 -3600 Viking Way
Richmond BC V6V 1N6

SECTION 1

Summary Documentation
Disposal Summary
NTCL Transport Records

Roberts Bay Offsite Disposal Summary

The contaminated soil, hazardous waste and mill equipment from this project was transported by NTCL barge from Ida Bay to Delta, BC followed by road transport to the respective treatment facilities. The table below provides a summary of material shipped followed by disposal facility details.

Colour indicates report tab

Origin (Excavation)	Contaminant	Crates	Super sacks	Cu.m	Disposal Facility
Mill and Assay Area	Hydrocarbon and Metals	19		38	Envirogreen
Garage Area	Hydrocarbon and Metals	55		110	Envirogreen
Extended Garage Area	Hydrocarbon and Metals	41	5	87	Envirogreen
Storage / Explosive Shed Area	Metals	22		44	Envirogreen
Tank Farm / Fuel Bladder Area	Haz Waste Hydrocarbons	39		78	QMLP
Ida Bay Fuel Spill	Hydrocarbons	3	4	10	QMLP
Misc Debris	Non- Haz Debris	1		n/a	QMLP
Roberts and Ida Bay	Haz Waste	11		n/a	Newalta
Mill and Assay Building	Lead Painted Mill Equipment				AMIX Salvage
	Total	**191**	**9**	**367**	

Disposal Facility Details

Disposal of Hydrocarbon and Metals Contaminated Soil
Envirogreen Technologies Ltd
LELA Lot 401 Similco Mine Site
Princeton BC V0X 1W0
Contact: Andrea Castellani (604)270-7388
Site Contact: Len Buchignani (250)295-6634
Facility Licence No: 13075

Disposal of Hydrocarbon Contaminated Soil
Quantum Murray Facilities (QMLP)
9356 River Road
Delta BC V4G 1B5
Contact: Andrea Castellani (604)270-7388
Facility Licence No: RS12106

Disposal of Hazardous Waste
Newalta
#9 – 7483 Progress Way, RS 8175
Delta BC V4G 1E7
Contact: Dave Ellwood (604)982-2308
Facility Licence No: RS 8175

Disposal of Lead Painted Mill Equipment
Amix Salvage and Sales Ltd
12301 Musqueam Drive
Surrey BC V3M 1B2
Contact: Glenn Rempel (604)580-0251
Facility Licence No: N/A

NTCL Transport of Contaminated Soil, Hazardous Waste and Mill Equipment Ida Bay to Delta, BC.

Below is the NTCL shipping list. Items were loaded on 20' or 40' flat rack containers, each identified with a tracking barcode. Total TDG Approved Containers of contaminated soil listed below included one container of miscellaneous, non-hazardous debris generated after the landfill was closed.

Transport manifests required for this shipment are included in this report by section (Contaminant Type/Disposal Facility)

Item		Barcode
Misc. Pces Mill Equipment - Lead Painted		13301
11 TDG Approved Containers of Hazardous Materials	**DG**	13302
12 TDG Approved Containers of contaminated soil		13303
9 TDG Approved Supersacks of contaminated soil		13304
12 TDG Approved Containers of contaminated soil		13305
12 TDG Approved Containers of contaminated soil		13306
12 TDG Approved Containers of contaminated soil		13307
12 TDG Approved Containers of contaminated soil		13308
12 TDG Approved Containers of contaminated soil		13309
12 TDG Approved Containers of contaminated soil		13310
12 TDG Approved Containers of contaminated soil		13311
12 TDG Approved Containers of contaminated soil		13312
12 TDG Approved Containers of contaminated soil		13313
12 TDG Approved Containers of contaminated soil		13314
12 TDG Approved Containers of contaminated soil		13315
12 TDG Approved Containers of contaminated soil		13316
12 TDG Approved Containers of contaminated soil		13317
Misc. Pces. Mill Equipment - Lead Painted		13318
Misc.Pces. Mill Equipment - Lead Painted (sgl. pc)		13319
Misc. Pce. Mill Equipment - Lead Painted (hose)		13320
12 TDG Approved Containers of contaminated soil		13321

SECTION 2

Disposal of Hydrocarbon and Metals Contaminated Soil

Envirogreen Technologies Ltd
LELA Lot 401 Similco Mine Site
Princeton BC V0X 1W0
Contact: Andrea Castellani (604)270-7388
Site Contact: Len Buchignani (250)295-6634

Envirogreen Technologies Ltd.

Certificate of Destruction and Recycling

Pursuant to the work order 10-2066 between Envirogreen Technologies Ltd. (ETL) and Quantum Murray LP (Client), ETL hereby represents and warrants to the Client that the soil described below has been remediated to the level of remediation required by the environmental laws and reuse standards acceptable for mine reclamation. The remediated soil has been placed on the Similco mine site for use in the reclamation of the disturbed lands.

Customer	Quantum Murray LP
Work Order No.	10-2066
Quantity Tonnes	363.67 Tonne (115 Seacans and 5 Super Sacks)
Soil Type	Metals and Hydrocarbon Impacted Soils
Date of processing completion	November 29, 2010

John J Cullen

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021127

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/18
Time In: 12:02
Time Out: 12:32

Truck: 113A TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N\A
Bill of Lading: 50097
Bin#: RT9

Gross: 31520 KG
Tare: 9180 KG
Net: 22340 KG

Remarks: BY DUAYNE

Signature Lynda English

MATERIAL DESIGNATION SLIP

JOB # SO70198 113A 50097

☑ Soil ☑ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other

Source Site Address: Roberts Bay.
Destination: Princeton Envirogreen

DISPOSAL CODE 10-2066

TRAILER

tkt# 21127
gross 31520
tare 9180
net. 22340

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality
☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons - METALS

03 | 2 30pm | Nov 17 2010
Project Load # | Time Shipped | Date

— | 20183C
Truck License | Trailer License

Signature Authorized Site Representative | Name | For

Trucker's signature | LT-Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☐ 4 Axle ☑ Other TRAILER

By signing this soil designation slip the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature | 10-11-18 Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021129

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/18
Time In: 13:35
Time Out: 14:20

Truck: 102 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N/A
Bill of Lading: 50098
Bin#: TR5

Gross: 60330 KG
Tare: 21600 KG
Net: 38730 KG

Remarks: IN FRONT OF BARRELS

Signature _____

MATERIAL DESIGNATION SLIP

JOB # S070198 102. 50098

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other _____

Source Site Address: Roberts Bay

Destination: Princeton Envirogreen

DISPOSAL CODE 10 - 2066

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ RL Quality ☑ Waste (CL/IL+) Quality
☐ CL / IL Quality ☐ HW Quality

Manifest # _____

Contaminants of Concern / Comments: Hydrocarbons - Metals H2O

04 | 730 am | Nov 18, 2010
Project Load # | Time Shipped | Date

7314 JM | 5405 FB
Truck License | Trailer License

Signature Authorized Site Representative | Name _____ For _____

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other _____

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Linda English | Nov 18/18
Receiver's Signature | Date

Tkt# 21129
gross 60330
tare 21600
net 38730

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021130

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/18
Time In: 13:43
Time Out: 14:42

Truck: 123 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N/A
Bill of Lading: 32408
Bin#: N/A

Gross: 60180 KG
Tare: 21650 KG
Net: 38530 KG

Remarks: FRONT OF BARRELS

Signature Lynda English

MATERIAL DESIGNATION SLIP

JOB # S070198 32408
123
10-2066

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other

Source Site Address: Roberts Bay
Destination: Princeton Envirogreen

DISPOSAL CODE

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality
☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons - Metals #2

07 | 7:35 | Nov 18 2010
Project Load # | Time Shipped | Date

3287 KN | 8639 IB
Truck License | Trailer License

Signature Authorized Site Representative | Name / For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

HKT 21130.
gross 60180
tare 21650
net 38530

Lynda English Nov 18/10.
Receiver's Signature Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021132

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/18
Time In: 13:46
Time Out: 14:27

Truck: 109 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N\A
Bill of Lading: 50099
Bin#: N/A

Gross: 60530 KG
Tare: 22030 KG
Net: 38500 KG

Remarks: FRONT OF BARRELS

Signature _____

MATERIAL DESIGNATION SLIP

JOB # S070198 #109
50099

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other _____

Source Site Address: Roberts Bay
Destination: Princeton Envirogreen

DISPOSAL CODE 10-2066

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality
☐ **CL / IL** Quality ☐ **HW** Quality

Manifest # _____

Contaminants of Concern / Comments: Hydrocarbons - Metals #2

05 | 730 | Nov 18 2010
Project Load # | Time Shipped | Date

4730 SK | 5404 6B
Truck License | Trailer License

Signature Authorized Site Representative | Name Quin For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other _____

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Hkt# 21132
gross 60530
tare 22030
net 38500 Kg.

Lynda English Nov 18/10
Receiver's Signature Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021134

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/18
Time In: 14:17
Time Out: 15:16

Truck: 100 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N\A
Bill of Lading: 50100
Bin#: N/A

Gross: 60210 KG
Tare: 21460 KG
Net: 38750 KG

Remarks: FRONT OF BARRELS

Signature: Lynda English

MATERIAL DESIGNATION SLIP

JOB # S070198
100. 50100

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other

Source Site Address: Roberts Bay
Destination: Prince Rupert Landfill

DISPOSAL CODE 10 - 2066

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ RL Quality ☑ Waste (CL/IL+) Quality
☐ CL / IL Quality ☐ HW Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons. - Metals. #2

06 Nov 18, 2010
Project Load # Time Shipped Date

CK 4018 5406 GB
Truck License Trailer License

Signature Authorized Site Representative Name For

Trucker's signature LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

tkt #21134
gross 60210
tare 21460
net 38750

Lynda English Nov 18/10
Receiver's Signature Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021140

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/22
Time In: 10:35
Time Out: 12:16

Truck: 102 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N/A
Bill of Lading: 39295
Bin#: TR5

Gross: 59960 KG
Tare: 21310 KG
Net: 38650 KG

Remarks: IN FRONT OF BARRELS

Signature Lynda English

MATERIAL DESIGNATION SLIP

JOB # S070198

102 39295

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Robert Bay

DISPOSAL CODE 10 - 2066

Destination: Director Envirogreen

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Nickel ore barge. - Metals. # 2

07 | 1200 AT | Nov 19, 2015

Project Load # | Time Shipped | Date

7341 SN | 5404 TB

Truck License | Trailer License

Signature Authorized Site Representative | Name Quinton For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☑ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Tkt# 21140
gross 59960
tare 21310
net 38650

Lynda English Nov 22/10

Receiver's Signature Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021141

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/22
Time In: 10:39
Time Out: 12:44

Truck: 123 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N/A
Bill of Lading: 39296
Bin#: N/A

Gross: 59680 KG
Tare: 21550 KG
Net: 38130 KG

Remarks: FRONT OF BARRELS

Signature _____

MATERIAL DESIGNATION SLIP

JOB # SO70198

39296

123

DISPOSAL CODE 10-2066

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other _____

Source Site Address: Roberts Bay.
Destination: Penticton Envirogreen.

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality
☑ **CL / IL** Quality ☐ **HW** Quality

Manifest # _____

Contaminants of Concern / Comments: Hydrocarbons - Metals. H2

08 | 12:00hr | Nov 19, 2010
Project Load # | Time Shipped | Date

3287 KN | 863818
Truck License | Trailer License

Signature Authorized Site Representative | Name / For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other _____

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

tkt# 21141
gross 59680
tare 21550
net 38130

Receiver's Signature Date Nov. 22/10

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021142

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/22
Time In: 10:41
Time Out: 12:51

Truck: 109 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N\A
Bill of Lading: 39297
Bin#: RT7

Gross: 59470 KG
Tare: 21470 KG
Net: 38000 KG

Remarks: FRONT OF BARRELS

Signature _____

MATERIAL DESIGNATION SLIP

JOB # SC70198 #109
39297

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt
☐ Other _____

Source Site Address: Roberts Bay

DISPOSAL CODE 10-2066

Destination: Envirogreen

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ RL Quality ☑ Waste (CL/IL+) Quality
☐ CL / IL Quality ☐ HW Quality

Manifest # _____

Contaminants of Concern / Comments: Hydrocarbons. - Metals. #2

09 | 1200pm | Nov 19, 2010
Project Load # | Time Shipped | Date

4730 JK | 5404 BB
Truck License | Trailer License

Signature Authorized Site Representative | Name / For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other _____

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Lynda English | Nov 22/10
Receiver's Signature | Date

HH#21142
gross 59470
tare 21470
net 38000

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021144

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/23
Time In: 22:36
Time Out: 00:19

Truck: 122 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N/A
Bill of Lading: 39298
Bin#: RT7

Gross: 59710 KG
Tare: 21200 KG
Net: 38510 KG

Remarks: FRONT OF BARRELS

Signature Lynda English

MATERIAL DESIGNATION SLIP

JOB # SQ70198

39298

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Roberts Bay

DISPOSAL CODE 10-2066

Destination: Pinter Envirogreen

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons.

tkt #21144
gross 59710
tare 21200
net 38510

#10 | 1000 hrs | Nov 19, 2010

Project Load # | Time Shipped | Date

3253 KN | 8673 7B

Truck License | Trailer License

Signature Authorized Site Representative | Name | For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☑ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Lynda English — Receiver's Signature

Nov 23/10 — Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021145

Customer: ROBERTS2
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, IN

Date: 10/11/24
Time In: 00:29
Time Out: 01:31

Truck: 123 TRIPPLE B TRUCKING
Work Order: 10-2066
Manifest: N/A
Bill of Lading: 39299
Bin#: RT7

Gross: 55030 KG
Tare: 21500 KG
Net: 33530 KG

Remarks: FRONT OF BARRELS

Signature Linda English

MATERIAL DESIGNATION SLIP

JOB # 5070198

39299

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Roberts Bay.

Destination: Pit - Envirogreen

DISPOSAL CODE 10-2066

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ RL Quality ☑ Waste (CL/IL+) Quality

☐ CL / IL Quality ☐ HW Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons - Metals

11 | 800 AM | Nov 23, 10

Project Load # | Time Shipped | Date

3287 KN | 8638 IB

Truck License | Trailer License

Signature Authorized Site Representative | Name Quik

Trucker's signature | For

LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☑ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Linda English — Nov 23/10

Receiver's Signature — Date

tkt# 21145
gross 55030
tare 21500
net 33530

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Certificate of Destruction and Recycling

Pursuant to the work order 10-2065 between Envirogreen Technologies Ltd. (ETL) and Quantum Murray LP (Client), ETL hereby represents and warrants to the Client that the soil described below has been remediated to the level of remediation required by the environmental laws and reuse standards acceptable for mine reclamation. The remediated soil has been placed on the Similco mine site for use in the reclamation of the disturbed lands.

Customer	Quantum Murray LP
Work Order No.	10-2065
Quantity Tonnes	52.4 Tonne (22 Seacans)
Soil Type	Metals Impacted Soils
Date of processing completion	November 29, 2010

John J Cullen

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021125

Customer: ROBERTS1
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, NU

Date: 10/11/18
Time In: 11:58
Time Out: 12:29

Truck: 114 TRIPPLE B TRUCKING
Work Order: 10-2065
Manifest: N/A
Bill of Lading: 50095
Bin#: OUT

Gross: 59890 KG
Tare: 21900 KG
Net: 37990 KG

Remarks: FOR TROMMEL

Signature: Lynda English

MATERIAL DESIGNATION SLIP

JOB # 5070198

50095

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Roberts Bay

DISPOSAL CODE 10-2065

Destination: Princeton - Envirogreen

114

tkt # 21125
gross 59890
tare 21900
net 37990

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality
☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: METALS
STORAGE #3

01 | Time Shipped | Nov 18, 2010
Project Load # | Date

5912 LP | 2682 SB
Truck License | Trailer License

Signature Authorized Site Representative | Name Quadrum
For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☑ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Lynda English — Nov 18/10
Receiver's Signature — Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

Envirogreen Technologies Ltd.

Phone (250) 295-6634 Permit# PA13075

Ticket#: 021126

Customer: ROBERTS1
INDIAN & NORTHERN AFFAIRS CAN.
ROBERTS BAY/IDA BAY, NU

Date: 10/11/18
Time In: 12:02
Time Out: 12:31

Truck: 113 TRIPPLE B TRUCKING
Work Order: 10-2065
Manifest: N/A
Bill of Lading: 50096
Bin#: OUT

Gross: 27650 KG
Tare: 13240 KG
Net: 14410 KG

Remarks: FOR TROMMEL

Signature Lynda English

MATERIAL DESIGNATION SLIP

JOB # S070198 113. 50096

☑ Soil ☐ Concrete ☑ Demo Debris ☐ Asphalt
☐ Other

Source/Site Address: Roberts Bay

DISPOSAL CODE 10-2065

Destination: Pinder Envirogreen

TRUCK
tkt 21126
gross 27650
tare 13240
net 14410

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ RL Quality ☑ Waste (CL/IL+) Quality
☐ CL / IL Quality ☐ HW Quality

Manifest #

Contaminants of Concern / Comments: METALS
STORAGE #3

02 Nov 17 2010
Project Load # Time Shipped Date

5910 LP
Truck License Trailer License

Name Quadra
Signature Authorized Site Representative For

Trucker's signature LT Licence / Other Truck Info

☑ Tandem ☐ T+P ☐ Enddump
☐ 3 Axle ☐ 4 Axle ☐ Other

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature 10-11-18.
Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

SECTION 3

Disposal of Hydrocarbon Contaminated Soil
Quantum Murray Facilities (QMLP)
9356 River Road
Delta BC V4G 1B5
Contact: Andrea Castellani (604)270-7388
Facility Licence No: RS12106

QUANTUM MURRAY
FACILITIES

Certificate of Acceptance

Pursuant to the work order DP-990-883 between Quantum Murray Facilities LP (QMFLP) and Quantum Murray LP (Client), QMFLP hereby certifies that we have received the below material under BC Environment Permit RS 12106. It is anticipated that the soil will be remediated late June 2011 – early July 2011. Contaminant concentrations in the soils received will be remediated to below the Commercial Land Use Standards outlined by the British Columbia Contaminated Sites Regulation. The remediated soil will be disposed of at an approved final management facility.

Customer	Quantum Murray LP
Work Order No.	DP-990-883
Quantity Tonnes	92.90 Tonnes (39 Seacans)
Soil Type	Hydrocarbon Impacted Soils (Hazardous Waste)
Date of Acceptance	November 10, 2010 and November 12, 2010

Andrea Castellani
Quantum Murray Facilities LP

Daily Inbound/Outbound Log

From 10/11/2010 to 10/11/2010

Date/Time In	TICKET	PAD	METER MARK	LOAD #	SLIP #	Gross Wt	Tare	Trailer	Net Wt
JOB ID: DP-990-883			**ROBERTS BAY + IDA BAY,**						
11/10/2010 1:07 PM	50	A	0-45	01	50055	36640	12870	0	23770
11/10/2010 1:07 PM	51	A	0-45	02	50054	33280	12910	0	20370
11/10/2010 1:08 PM	52	A	0-45	03	50056	36040	12890	0	23150
	3								67290

Void tickets have been excluded from report

MATERIAL DESIGNATION SLIP

JOB # Robert's Bay 50055

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: TANK Farm

DISPOSAL CODE DP-990-883

Destination: QF1 DeUn (COMLP)

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☐ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☑ **HW** Quality

Manifest # BF 16601-7

Contaminants of Concern / Comments: Hydrocarbons

10 BOXES DU

GROSS 36640 kg

TARE 12870 kg

NET 23770 kg

Project Load #	Time Shipped	Date
	7:30AM	Nov 10 2010

Truck License	Trailer License
BY 2462	203213

Signature Authorized Site Representative	For
	Name [illegible]

Trucker's signature	LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other T. TRAILER

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature

Nov 10 2010
Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	BF16601-7

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried		Shipping Locations		Carriers Signature
				Start (YY/MM/DD)	Finish (YY/MM/DD)	From	To	
Northern Transportation Company Limited	N/A	N/A	BC	10/08/24	10/11/07	Roberts Bay & Ida Bay, Nunavut	8081 River Road Delta BC	
City Transfer Inc	LT0073	A/2482/20327	BC	10/11/10	10/11/10	8081 River Road Delta BC	9340 River Road Delta BC	

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
PER INAC:		604-775-7388	604-775-7389	10/11/10

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

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.

BF16601-7

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

A Generator / consignor / Producteur / expéditeur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NUG100008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: P.O. Box 2200 | City / Ville: Iqaluit | Province: NU | Postal code / Code postal: X0A 0H0

E-mail / Courrier électronique | Tel. No. / N° de tél.

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay + Ida Bay

City / Ville: Nunavut | Province: NU | Postal code / Code postal

B Carrier / Transporteur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Company name / Nom de l'entreprise: See multiple carrier form

Mailing address / Adresse postale | City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only | Port of exit / Point de sortie — International use only

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor 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) | Tel. No. / N° de tél.

Year / Année | Month / Mois | Day / Jour | Signature

C Receiver / consignee / Réceptionnaire / destinataire

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés: BG411FFZ

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de destination

Intended Receiver / consignee / Réceptionnaire / destinataire prévu

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Quantum Facilities Inc RS1206

Mailing address / Adresse postale: 100-3600 Viking Way | City / Ville: Richmond | Province: BC | Postal code / Code postal: V6V 1K6

E-mail / Courrier électronique | Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de l'expédition: 9350 River Road

City / Ville: Delta | Province: BC | Postal code / Code postal

Date received / Date de réception — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 10 | Time / Heure: 8:00 ☑ A.M. ☐ 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

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage/ de risque	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités	Packaging/Contenant No. / N°	Packaging/Contenant Codes Int – ext	Phys. state / État phys.	Quantity received / Quantité reçue	Units / L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. Cont	Decont. Veh. Véh.
(i)		Waste Oil	NA	NA	NA	30,000	kg	1	07	S	23770	kg						
(ii)																		
(iii)																		
(iv)																		

	Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment / Envoi	Of / De	D or R code / Code D 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	National code in country of / Code du pays Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)												
(ii)	International use only											
(iii)												
(iv)												

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

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 (caractère d'imprimerie)

Signature | Tel. No. / N° de tél.: 604 270 7348

Special handling / Manutention spéciale
☐ Attached / Ci-joint: ☑ As follows / Ci-contre: Call Quantum 24hr No 1-866-333-6376

Generator / consignor 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 (caractère d'imprimerie): A. Castellan | Signature | Tel. No. / N° de tél.: 270 388

Date shipped / Date d'expédition — Year / Année: 10 | Month / Mois: 09 | Day / Jour: 24 | Time / Heure: 5:30 ☐ A.M. ☐ P.M.

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 10

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay / 50054

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: TANK FARM

DISPOSAL CODE DP-940-883

Destination: QFI DUNCAN (CRLS)

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☐ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☑ **HW** Quality

Manifest # BF16600-9

Contaminants of Concern / Comments: Hydrocarbons.

8 BOXES #1

GROSS 33280 Kg

TARE 12910 Kg

NET 20370 Kg

Project Load #	Time Shipped	Date
01	1500 hrs	Nov 10 2011

Truck License	Trailer License
AY 2452	20322 B

Signature Authorized Site Representative — Name — For

Trucker's signature — LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other 1 TRAILER

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature — Date Nov 10, 2011

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	BF166000-9

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried Start (YY/MM/DD)	Date Carried Finish (YY/MM/DD)	Shipping Locations From	Shipping Locations To	Carriers Signature
Northern Transportation Company Limited	N/A	N/A	BC	10/08/24	10/11/07	Roberts Bay / Cadillac Bay Nunavut	8081 River Rd Delta BC	
City Transfer Inc.	LT0073	A14282 / 203223	BC	10/11/10	10/11/10	8081 River Rd Delta BC	9356 River Rd Delta BC	Mike

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
FE INAC A. Castellani		604-270-7388	604-270-7389	10/11/10

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

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.

BF16600-9

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 1: NU6100008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: PO Box 2200, Iqaluit, NU X0A 0H0

City / Ville:

Province:

Postal code / Code postal:

E-mail / Courrier électronique:

Tel. No. / N° de tél.: ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay + Ida Bay

City / Ville: Nunavut

Province: NU

Postal code / Code postal:

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2 — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RS12106

Company name / Nom de l'entreprise: Quantum Facilities Inc

Mailing address / Adresse postale: 100-3600 Viking Way

City / Ville: Richmond

Province: BC

Postal code / Code postal: V6V1N

E-mail / Courrier électronique:

Tel. No. / N° de tél.: ( )

Receiving site address / Adresse du lieu de l'expédition: 9356 River Road

City / Ville: Delta

Province: BC

Postal code / Code postal:

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 23: See multiple carrier form

Company name / Nom de l'entreprise:

Mailing address / Adresse postale:

City / Ville:

Province:

Postal code / Code postal:

E-mail / Courrier électronique:

Tel. No. / N° de tél.: ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only

Port of exit / Point de sortie — International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor 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.* 26

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie):

Tel. No. / N° de tél.: ( )

Signature:

Year / Année | Month / Mois | Day / Jour

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27: BG41179-2

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A

☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville

Province

Postal code / Code postal

E-mail / Courrier électronique

Tel. No. / N° de tél.: ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception 29: Year / Année 10 | Month / Mois 11 | Day / Jour 10

Time / Heure: 900 ☑ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire 30

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

(i) Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5: Sub. class(es) / Classe(s) sub.	UN No. / N° NU 6	Packing / risk gr. / Gr. d'emballage/ de risque 7	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités 8	Packaging/Contenant 9: No. / N°	Codes	Int. – ext.	Phys. state / État phys. 10
(i)	Waste 01	N/A	N/A	N/A	32,000	kg	08	07	S	
(ii)										
(iii)										
(iv)										

Quantity received / Quantité reçue	Units / L or / ou kg / Unités 31	Comments / Commentaires 32	Handling Code / Code de manutention 33	Shipment / Envoi 34: Accepted / Accepté	Refused / Refusé	Decont. 35: Pack. Cont.	Veh. Véh.
20370	kg						

Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays: Export / Exportation 18	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)											
(ii)											
(iii)											
(iv)											

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

Generator / consignor 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 (caractère d'imprimerie): A Costelnini

Signature

Tel. No. / N° de tél. 20: 270-7388

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 (caractère d'imprimerie) 37

Signature

Tel. No. / N° de tél.: 604 270 7388

Special handling / Manutention spéciale 22

☐ Attached /Ci-joint: ☑ As follows/ Ci-contre: Call Quantum 24hr No - Reda 333 6376

Date shipped / Date d'expédition 21: Year / Année 10 | Month / Mois 08 | Day / Jour 24

Time / Heure: 1200 ☐ A.M. ☐ P.M

Scheduled arrival date / Date d'arrivée prévue: Year / Année 10 | Month / Mois 11 | Day / Jour 10

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay 50056

☐ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: TANK FARM

DISPOSAL CODE DP-990-883

Destination: GFT Delta (CMLP)

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☐ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☑ **HW** Quality

Manifest # BF 16602-5

Contaminants of Concern / Comments: Hydrocarbons

10 Box's @ 1

GROSS 36040 kg

TARE 12890 kg

NET: 23150 kg

1700 Nov 10, 2010

Project Load # HY 2482 | Time Shipped | Date

Truck License 20328 B | Trailer License

Signature Authorized Site Representative | Name | For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other T: TRAILER

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature | Nov 12 2010 Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	BG911d602-5

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried		Shipping Locations		Carriers Signature
				Start (YY/MM/DD)	Finish (YY/MM/DD)	From	To	
Northern Transportation Company Limited	N/A	N/A	NL	10/08/24	10/11/DD	Roberts Bay/ Ida Bay/ Nunavut NL	BOB/ RMV Base/ Seltaqx	
City Transfer Inc	LT0073	A1287/20320	BC	10/11/10	10/11/16	BOB/ Rankin Inlet NL	93A/ Dist Road Delta NL	

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
FM INAC		1(867)707388	1(867)707389	10/11/10

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

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.

BF16602-5

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

A Generator / consignor — Producteur / expéditeur

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: NUG100008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: P.O. Box 2200 — City / Ville: Iqaluit — Province: NU — Postal code / Code postal: X0A 0H0

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay / Bba Bay

City / Ville: Hurawut — Province: NU — Postal code / Code postal

B Carrier — Transporteur

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: see multiple carrier form

Company name / Nom de l'entreprise

Mailing address / Adresse postale — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only

Port of exit / Point de sortie — International use only

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor 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): — Tel. No. / N° de tél. ( )

Year / Année — Month / Mois — Day / Jour — Signature:

C Receiver / consignee — Réceptionnaire / destinataire

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés: BGH1179-2

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☒ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 10

Time / Heure: 12 est ☐ A.M. ☒ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire

Registration No./Provincial ID No. — N° d'immatriculation/d'id provincial

Intended Receiver / consignee — Réceptionnaire / destinataire prévu

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: NC RS12400

Quantum Facilities

Mailing address / Adresse postale: 102-3002 Viking Way — City / Ville: Richmond — Province: BC — Postal code / Code postal: V6V 1X7

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de l'expédition: 9356 River Road

City / Ville: Delta — Province: BC — Postal code / Code postal

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités	Packaging / Contenant No. / N°	Codes	Phys. state / État phys.	Quantity received / Quantité reçue	Units / L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. / Cont.	Decont. Veh. / Véh.
(i)		Waste Oil	NA	NA	N/A	30,000	Kg	10	07	S	23150	Kg						
(ii)																		
(iii)																		
(iv)																		

	Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	Shipment Envoi	Of / De	D or R code / Code D 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	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

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 (caractère d'imprimerie)

Signature — Tel. No. / N° de tél.: 604 270 7389

Special handling / Manutention spéciale

☐ Attached / Ci-joint: ☐ As follows / Ci-contre: Call Quantum 24hr 1 (866) 335-6376

Date shipped / Date d'expédition — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 10 — Time / Heure: ☐ A.M. ☒ P.M. 12:00

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 10

Generator / consignor 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 (caractère d'imprimerie): Heather Callihan — Signature — Tel. No. / N° de tél.: 270-7388

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

Daily Inbound/Outbound Log

From 12/11/2010 to 12/11/2010

Date/Time In	TICKET	PAD	METER MARK	LOAD #	SLIP #	Gross Wt	Tare	Trailer	Net Wt
JOB ID: DP-990-883			**ROBERTS BAY + IDA BAY,**						
11/12/2010 1:09 PM	53	A	0-45	04	50057	36060	13010	0	23050
11/12/2010 1:10 PM	54	A	0-45	05	50049	6960	4400	0	2560
	2								**25610**
	24								**351300**

Void tickets have been excluded from report

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay 50057

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: TANK FARM

DISPOSAL CODE DP-940-883

Destination: QFI Delta CVLP

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☐ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☑ **HW** Quality

Manifest # BF 16604-1

Contaminants of Concern / Comments: Diesel Fuel

10 BOXS OIL

GROSS 36060 kg

TARE 13010 kg

NET = 23050 kg

Project Load #	Time Shipped	Date
A-1 2-162	1330	Nov 18 2016

Truck License	Trailer License
	7032203

Name

Signature Authorized Site Representative — For

Trucker's signature — LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other T. TRUCK

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature — Date Nov 17 2016

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	bF11d004-1

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried		Shipping Locations		Carriers Signature
				Start (YY/MM/DD)	Finish (YY/MM/DD)	From	To	
Northern Transportation Company Limited	N/A	N/A	BC	10/08/24	10/11/07	Peats Bay to Aklavik 8681 River Rd Nunavut, NU	Delta BC	
				10/11/10	10/11/10	8681 River Rd Delta BC	9350 River Road Delta BC	
City Transfer Inc	LT0073	A42482 / 2032207 BC						

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
TG INAC A (Gstetter		604 270 7388	604 270 7389	10/11/10

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

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.

BF16604-1

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

A Generator / consignor — Producteur / expéditeur

1 Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: XNG100208

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: Box 2200 | City / Ville: Iqaluit | Province: NU | Postal code / Code postal: X0A 0H0

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay + Ida Bay

City / Ville: Nunavut | Province: NU | Postal code / Code postal

B Carrier — Transporteur

23 Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial

Company name / Nom de l'entreprise: See manifest for carrier firm

Mailing address / Adresse postale | City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only | Port of exit / Point de sortie — International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.* 26
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) : | Tel. No. / N° de tél. ( )

Year / Année | Month / Mois | Day / Jour | Signature

Intended Receiver / consignee — Réceptionnaire / destinataire prévu

2 Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: Quantum Facilities Inc BS17406

Mailing address / Adresse postale: 10-3600 Viking Way | City / Ville: Richmond | Province: BC | Postal code / Code postal: V6V 1N6

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de l'expédition: 4356 River Rd

City / Ville: Delta | Province: BC | Postal code / Code postal

C Receiver / consignee — Réceptionnaire / destinataire

28 Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial

Référence Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés: BG41179-2

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

29 Date received / Date de réception — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 12 | Time / Heure: 8 00 ☑ A.M. ☐ P.M.

30 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

	3 Prov. code / Code prov.	4 Shipping name / Appellation réglementaire	5 Class / Classe Sub. class(es) / Classe(s) sub.	6 UN No. / N° NU	7 Packing / risk gr. / Gr. d'emballage / de risque	8 Quantity shipped / Quantité expédiée	8 Units / L or / ou Kg / Unités	9 Packaging/Contenant No. / N°	9 Codes Int.– ext.	10 Phys. state / État phys.
(i)		Waste Oil	NA	NA	N/A	30,000	L	19	10	A S
(ii)										
(iii)										
(iv)										

	31 Quantity received / Quantité reçue	31 Units / L or / ou kg / Unités	32 Comments / Commentaires	33 Handling Code / Code de manutention	34 Shipment / Envoi Accepted / Accepté	34 Refused / Refusé	35 Decont. Pack. Cont.	35 Veh. Véh.
(i)	23050	Kg						
(ii)								
(iii)								
(iv)								

	11 Notice No. / N° de notification	11 Notice Line No. / N° de ligne de la notification	12 Shipment / Envoi	12 Of / De	13 D or R code / Code D ou R	14 C code / Code C	15 Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	16 H code / Code H	17 Y code / Code Y	18 National code in country of / Code du pays Export / Exportation	18 Import / Importation	19 Customs code(s) / Code(s) de douanes
(i)												
(ii)												
(iii)												
(iv)												

International use only

36 If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

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.* 37

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature | Tel. No. / N° de tél. 604 2707349

22 Special handling / Manutention spéciale
☑ Attached / Ci-joint ☐ As follows / Ci-contre: Call Quantum 24hr No. 1-866 333-6S

Generator / consignor certification: *I certify that the information contained in Part A is correct and complete.* / **Attestation du producteur / expéditeur:** *J'atteste que tous les renseignements de la partie A sont exacts et complets.*

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie) | Signature | 20 Tel. No. / N° de tél. 2707388

21 Date shipped / Date d'expédition — Year / Année: 10 | Month / Mois: 08 | Day / Jour: 24 | Time / Heure: 7 30 ☐ A.M. ☐ P.M.

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 12

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay 50049

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: TANK FARM (4)

DISPOSAL CODE DP-990-883

Destination: GFL Delta (Q.M.L.P)

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☐ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☑ **HW** Quality

Manifest # BF16603-3

Contaminants of Concern / Comments: Hydrocarbons

1-BOX #1

GROSS - 6960 kg

TARE - 4400 kg

NET : 2560 kg

Project Load #	Time Shipped	Date
01	13:30	Nov. 13 2018

Truck License	Trailer License
AN 1108	

Signature Authorized Site Representative	Name / For
	Q.M.L.P

Trucker's signature	LT Licence / Other Truck Info

☑ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other Flat Deck

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature

Nov 13 2018
Date

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	BF166603-3

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried Start (YY/MM/DD)	Date Carried Finish (YY/MM/DD)	Shipping Locations From	Shipping Locations To	Carriers Signature
Northern Transport Company Limited	N/A	N/A	BC	10/08/24	10/11/07	Hoarfrost River Iqaluit Nunavut, NU	6081 Burns Rd. Delta BC	
Quantum Murray LP	LT1185	AN1708	BC	10/11/12	10/11/12	6081 Burns Rd Delta BC	Delta BC	

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
TH INAC A Castellarin		270-7388	270-7389	10/11/12

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	BF166003-3

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried		Shipping Locations		Carriers Signature
				Start (YY/MM/DD)	Finish (YY/MM/DD)	From	To	
Northern Transport Company Limited	N/A	N/A	BC	10/08/24	10/11/07	Yellowknife NT / Iqaluit Nunavut NU	6081 Rivermill Rd. Delta BC	
Quantem Muskeg	LT1185	AN1708	BC	10/11/12	10/11/12	604 Kuhl Rd Kelowna BC	Delta BC	

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
TH INAC A Castellarin		2707388	270-3589	10/11/12

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

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.

BF16603-3

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

A Generator / consignor — Producteur / expéditeur

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: NUN 100008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: 40 Box 2200 | City / Ville: Iqaluit | Province: NU | Postal code / Code postal: X0A 0H0

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay & Hoare Bay

City / Ville: Nunavut | Province: NU | Postal code / Code postal

Intended Receiver / consignee — Réceptionnaire / destinataire prévu 2

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: 451206

Company name: Quantem Facilities Inc

Mailing address / Adresse postale: 102-3500 Viking Way | City / Ville: Richmond | Province: BC | Postal code / Code postal: V6V 1N6

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de l'expédition: 9350 River Rd

City / Ville: Delta | Province: BC | Postal code / Code postal

B Carrier — Transporteur

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial 23

Company name / Nom de l'entreprise: See multiple carrier form

Mailing address / Adresse postale | City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée | International use only

Port of exit / Point de sortie | International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor 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.* 26

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie) | Tel. No. / N° de tél. ( )

Year / Année | Month / Mois | Day / Jour | Signature :

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés: DG411 71-2

C Receiver / consignee — Réceptionnaire / destinataire

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial 28

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 12

Time / Heure 29: 12:30 ☐ A.M. ☑ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire 30

Registration No./Provincial ID No. — N° d'immatriculation/d'id provincial

(i)	Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe Sub. class(es) / Classe(s) sub. 5	UN No. / N° NU 6	Packing / risk gr. / Gr. d'emballage/ de risque 7	Quantity shipped / Quantité expédiée 8	Units / L or / ou Kg / Unités 8	Packaging / Contenant No. / N° 9	Codes	Phys. state / État phys. 10
(i)		Waste Oil	NA	NA	NA	3,000	kg	01	09	S
(ii)										
(iii)										
(iv)										

	Quantity received / Quantité reçue	Units / L or / ou kg / Unités 31	Comments / Commentaires 32	Handling Code / Code de manutention 33	Shipment / Envoi Accepted / Accepté 34	Shipment / Envoi Refused / Refusé 34	Decont. Pack. Cont. 35	Decont. Veh. Véh. 35
(i)	2560	kg						
(ii)								
(iii)								
(iv)								

	Notice No. / N° de notification 11	Notice Line No. / N° de ligne de la notification 11	Shipment / Envoi 12	Of / De 12	D or R code / Code É ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays: Export / Exportation 18	Import / Importation 18	Customs code(s) / Code(s) de douanes 19
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

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 (caractère d'imprimerie) 37

Signature | Tel. No. / N° de tél. 604 319-7164

Special handling / Manutention spéciale 22

☐ Attached / Ci-joint: ☒ As follows / Ci-contre: call Quantem 24hr # 1-866333-6376

Date shipped / Date d'expédition 21 — Year / Année: 10 | Month / Mois: 08 | Day / Jour: 24 | Time / Heure: ☐ A.M. ☑ P.M. 17:30

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 19

Generator / consignor 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 (caractère d'imprimerie) | Signature

Tel. No. / N° de tél. 20: 778-389-8102

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

QUANTUM MURRAY
FACILITIES

Certificate of Acceptance

Pursuant to the work order DP-990-884 between Quantum Murray Facilities LP (QMFLP) and Quantum Murray LP (Client), QMFLP hereby certifies that we have received the below material under BC Environment Permit No. RS 12106. It is anticipated that the soil will be remediated late June 2011 – early July 2011. Contaminant concentrations in the soils received will be remediated to below the Commercial Land Use Standards outlined by the British Columbia Contaminated Sites Regulation. The remediated soil will be disposed of at an approved final management facility.

Customer	Quantum Murray LP
Work Order No.	DP-990-884
Quantity Tonnes	14.56 Tonnes (3 Seacans and 4 super sacs)
Soil Type	Hydrocarbon Impacted Soils
Date of Acceptance	November 12, 2010

Andrea Castellani
Quantum Murray Facilities LP

Daily Inbound/Outbound Log

From 12/11/2010 to 12/11/2010

Date/Time In	TICKET	PAD	METER MARK	LOAD #	SLIP #	Gross Wt	Tare	Trailer	Net Wt
JOB ID: DP-990-884			**IDA BAY FUEL SPILL**						
11/12/2010 1:38 PM	55	A	0-45	01	50053	23850	19370	0	4480
11/12/2010 1:40 PM	56	A	0-45	02	50052	7000	4290	0	2710
11/12/2010 1:41 PM	57	A	0-45	03	50051	8050	4290	0	3760
11/12/2010 1:42 PM	58	A	0-45	04	50050	7900	4290	0	3610
	4								14560
	28								

Void tickets have been excluded from report

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay 50050

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Tide Bay Fuel spill

DISPOSAL CODE DP-990-884

Destination: GFL Delta (CMLP)

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons

1 Box #4

GROSS 7900 kg
TARE 4290 kg
NET: 3610 kg

AN 1706 | 1000 | Nov 12 2008

Project Load # | Time Shipped | Date

02

Truck License | Trailer License

Name MCMLP

Signature Authorized Site Representative | For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other Flat Deck

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature | Date Nov 12 2008

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay. 50051

☐ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Tide Bay Fuel spill

DISPOSAL CODE DP 990-884

Destination: GFL Delta (CMLP)

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Hydrocarbons.

1 Box #4

GROSS 8050 kg
TARE 4290 kg
NET: 3760 kg

03 | 1415 | Nov 12 2008

Project Load # | Time Shipped | Date

AN 1908

Truck License | Trailer License

Name Cardinal

Signature Authorized Site Representative | For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other Flat Deck

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature | Date Nov 12 2008

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay / 50052

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Rob. Bay Fuel Spill

DISPOSAL CODE DP-990-884

Destination: QFI Delta Landfill

GROSS 7000 kg
TARE 4290 kg
NET 2710 kg

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Diesel contam. soil

1 Box #4

04 | 2:30 pm | Nov 12 2010

Project Load # | Time Shipped | Date

AN 1902

Truck License | Trailer License

Name

Signature Authorized Site Representative | For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other Flat Deck

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature | Date: Nov 12 2010

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

MATERIAL DESIGNATION SLIP

JOB # Roberts Bay / 50053

☑ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address: Rob. Bay Fuel Spill

DISPOSAL CODE DP-990-884

Destination: QFI Delta

GROSS 23850 kg
TARE 19370 kg
NET 4480 kg

SOIL CLASSIFICATION AND CARRIER IDENTIFICATION

Soil in this truck meets the British Columbia Contaminated Sites Regulations Soil Standards for:

☐ **RL** Quality ☑ **Waste** (CL/IL+) Quality

☐ **CL / IL** Quality ☐ **HW** Quality

Manifest #

Contaminants of Concern / Comments: Diesel contam. soil

4 Super Sacs #4

05 | 2:30 pm | Nov 12 2010

Project Load # | Time Shipped | Date

AA 8414 | 20321 B

Truck License | Trailer License

Name

Signature Authorized Site Representative | For

Trucker's signature | LT Licence / Other Truck Info

☐ Tandem ☐ T+P ☐ Enddump

☐ 3 Axle ☐ 4 Axle ☑ Other Flat Deck

By signing this soil designation slip, the carrier acknowledges possession of information regarding hazardous materials as described above.

Receiver's Signature | Date: Nov 12 2010

WHITE – Consignor (Generator) CANARY – Carrier (Transporter) PINK – Consignee (Receiver) GOLD – Invoicing Copy / Consignee (Receiver) GREEN – Office

SECTION 4

Disposal of Hazardous Waste
Newalta
#9 – 7483 Progress Way, RS 8175
Delta BC V4G 1E7
Contact: Dave Ellwood (604)982-2308
Facility Licence No: RS 8175

NEWALTA

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41180-0/ BG41186-7/ Bg41185-9/BG41182-6 Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
912 kg	Batteries, wet filled with acid...	Recycled into raw materials – all recycled	BH26475-2	Metalex - Richmond BC
1500 kg	Empty Cylinders	Recycled into raw materials – all recycled	Shipped as non regulated scrap metal – no manifest	Allied Steel – Richmond BC
200 kg	Asbestos, white	Landfill	BG 80302-2	Vancouver Landfill, Delta BC
200 L	Ethylene Glycol	Recycled into new products	BG 10826-5	MR Environmental, Burnaby BC

Name: Susan Wu

Title: Operations Supervisor

Signature: for

Date: March 14/11

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

BH26475-2

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.

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ~~BCG 04156~~ JV 1

Company name / Nom de l'entreprise: Newalta Corp.
Mailing address / Adresse postale: 9-7483 Progress Way City / Ville: Delta Province: B.C. Postal code / Code postal: V4G 1E7
E-mail / Courrier électronique: Tel. No. / N° de tél.: 604 952-1220
Shipping site address / Adresse du lieu de l'expédition: Same
City / Ville: Province: Postal code / Code postal:

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: LT 0859 23
Company name / Nom de l'entreprise: Newalta Corp.
Mailing address / Adresse postale: 9-7483 Progress Way City / Ville: Delta Province: B.C. Postal code / Code postal: V4G 1E7
E-mail / Courrier électronique: Tel. No. / N° de tél.: 604 952-1220

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon	1594 KS	B.C.
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: Port of exit / Point de sortie: 25

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Metalex 2
Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: BCG04156
Mailing address / Adresse postale: 2511 #5 Rd. City / Ville: Richmond Province: B.C. Postal code / Code postal: V4G 1E7
E-mail / Courrier électronique: Tel. No. / N° de tél.: 604 952-1220 273-5487
Receiving site address / Adresse du lieu de l'expédition: Same
City / Ville: Province: Postal code / Code postal:

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor 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.* 26

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): James VanBuekenhout
Tel. No. / N° de tél.: 604 952-1220
Year / Année: 11 Month / Mois: 03 Day / Jour: 04 Signature: JV 4

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise
Mailing address / Adresse postale
City / Ville: Province: Postal code / Code postal:
E-mail / Courrier électronique: Tel. No. / N° de tél.: ( )
Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année: Month / Mois: Day / Jour: Time / Heure: ☐ A.M. ☐ P.M. 29

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 30
Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

(i)	Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° NU 5	Packing / risk gr. / Gr. d'emballage/ de risque 7	Quantity shipped / Quantité expédiée	Unit / L or / ou Kg / Unités 8	Packaging / Contenant No. / N°	Packaging / Contenant Codes	Phys. state / État phys. 10
(i)		BATTERIES, WET, FILLED WITH ACID	8	UN2794	III	1328	Kg	4	01	S
(ii)										
(iii)		BATTERIES, WET, FILLED WITH ACID	8	UN2794	III	1380	Kg	3	07	S
(iv)										

	Quantity received / Quantité reçue	Units / L or / ou kg / Unités 31	Comments / Commentaires 32	Handling / Code / Code de manutention 33	Shipment / Envoi Accepted / Accepté 34	Shipment / Envoi Refused / Refusé 34	Decont. Pack. / Cont. 35	Decont. Veh. / Véh. 35
(i)								
(ii)								
(iii)								
(iv)								

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

	Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays: Export / Exportation 18	Import / Importation	Customs code(s) / Code(s) de douane 19
(i)												
(ii)												
(iii)												
(iv)												

international use only

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.* 37
Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)
Signature
Tel. No. / N° de tél.: ( )

Special handling / Manutention spéciale 22: CLASS-8
☐ Attached / Ci-joint ☑ As follows / Ci-contre : 24 Hour #1-800-567-7455

Generator / consignor 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.* 20
Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie): J. VanBuekenhout
Signature: JV
Tel. No. / N° de tél.: 604 952-1220

Date shipped / Date d'expédition 21 — Year / Année: 11 Month / Mois: 03 Day / Jour: 03 Time / Heure: ☐ A.M. ☑ P.M. 1433
Scheduled arrival date / Date d'arrivée prévue — Year / Année: 11 Month / Mois: 03 Day / Jour: 04

MOE 04-1917 (07/07)

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 1 (white / blanche)

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

BG80302-2

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.

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 1: BCG00119

Company name / Nom de l'entreprise: Nasalta Corporation

Mailing address / Adresse postale: #19-7483 Progress Way | City / Ville: Delta | Province: BC | Postal code / Code postal: V4G 1E7

E-mail / Courrier électronique | Tel. No. / N° de tél.: 6049521220

Shipping site address / Adresse du lieu de l'expédition: #19-7483 Progress Way | City / Ville: Delta | Province: BC | Postal code / Code postal: V4G 1E7

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 23: LT0859

Company name / Nom de l'entreprise: Nasalta Corporation

Mailing address / Adresse postale: #19-7483 | City / Ville: Progress Way, Delta | Province: BC | Postal code / Code postal: V4G 1E7

E-mail / Courrier électronique | Tel. No. / N° de tél.: ( )

Vehicle / Véhicule — Registration No. / N° d'immatriculation — Prov. 24:
Trailer - Rail car No. 1 / 1e remorque - wagon: BT 11111 | BC
Trailer - Rail car No. 2 / 2e remorque - wagon:

Port of entry / Point d'entrée: International use only
Port of exit / Point de sortie: International use only 25

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28: BCG03161

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise: Vancouver Island Industrial
Mailing address / Adresse postale: 5460 - 124 Street
City / Ville: Surrey | Province: BC | Postal code / Code postal: V3X 1W4
E-mail / Courrier électronique | Tel. No. / N° de tél.: 6049320232
Receiving site address / Adresse du lieu de destination: 5460 - 124 Street

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2 — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: BCG03161
Mailing address / Adresse postale: 5460 - 124 Street | City / Ville: Delta | Province: BC | Postal code / Code postal:
E-mail / Courrier électronique | Tel. No. / N° de tél.: ( )
Receiving site address / Adresse du lieu de l'expédition: 5460 - 124 Street
City / Ville: Delta | Province: BC | Postal code / Code postal: V3X 1W4

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor 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. 26

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): Mas Mirabedini | Tel. No. / N° de tél.: 6049320232
Signature:
Year / Année: 11 | Month / Mois: 02 | Day / Jour: 07

Date received / Date de réception: Year / Année: 11 | Month / Mois: 02 | Day / Jour: 08
Time / Heure 29: 09:35 ☑ A.M. ☐ 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 30 | Registration No. / Provincial ID No. / N° d'immatriculation / d'id provincial

(i)	Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe Sub. class(es) / Classe(s) sub. 5	UN No. / N° NU 6	Packing / risk gr. / Gr. d'emballage / de risque 7	Quantity shipped / Quantité expédiée	Units / Unités 8	Packaging / Contenant No. / N°	Codes	Phys. state / État phys. 10
(i)		Asbestos, waste	9	2590	III	3200	Kg		05	S
(ii)										
(iii)										

	Quantity received / Quantité reçue	Units / Unités 31	Comments / Commentaires 32	Handling Code / Code de manutention 33	Shipment / Envoi Accepted / Accepté 34	Shipment / Envoi Refused / Refusé 34	Decont. Pack. / Cont 35	Decont. Veh. / Véh. 35
		Kg	2550	1A6				

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

	Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code É ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays: Export / Exportation 18	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)												
(ii)												
(iii)												
(iv)												

International use only

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 (caractère d'imprimerie) 37
Signature
Tel. No. / N° de tél.: 6049321760

Special handling / Manutention spéciale 22
☐ Attached / Ci-joint: ☑ As follows / Ci-contre: 24 hr # 1500567 7457

Generator / consignor 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 (caractère d'imprimerie): Raj Chhabra
Signature
Tel. No. / N° de tél. 20: 6049521220

Date shipped / Date d'expédition 21: Year / Année: 11 | Month / Mois: 02 | Day / Jour: 06 | Time / Heure: ☐ A.M. ☐ P.M.
Scheduled arrival date / Date d'arrivée prévue: Year / Année: 11 | Month / Mois: 02 | Day / Jour: 06

MOE.04-1917 (07/07)

Retained by Carrier - Gardée par le transporteur

Copy / Copie 4 (pink / rose)

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.

BG10826-5

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

A Generator / consignor
Producteur / expéditeur

Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial 1: BCG-00119

NEWALTA (DELTA)

Company name / Nom de l'entreprise: 8-7483 PROGRESS WAY DELTA B.C. V4G-1E7

Mailing address / Adresse postale | City / Ville | Province | Postal code / Code postal: 604-952-1220

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: 8-7483 PROGRESS WAY

Ville: DELTA | Province: B.C. | Postal code / Code postal: V4G-1E7

Intended Receiver / consignee
Réceptionnaire / destinataire prévu: M&R Environmental Ltd.

Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial 2: BCG-20128/RS

Mailing address / Adresse postale: 4629 Byrne Rd. | City / Ville: Burnaby | Province: BC | Postal code / Code postal: V5J 3H8

E-mail / Courrier électronique | Tel. No. / N° de tél. 876-0606 ( )

Receiving site address / Adresse du lieu de l'expédition: 4629 Byrne Road

City / Ville: Burnaby | Province: BC | Postal code / Code postal: V5J 3H8

B Carrier
Transporteur

Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial 23: LT-1074

Company name / Nom de l'entreprise: M&R Environmental Ltd.

Mailing address / Adresse postale: 4629 Byrne Road | City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. 604-876-0606 ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon	8211 - JT	BC
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only | Port of exit / Point de sortie: International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor 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.* 26

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): BARRY BILD

Tel. No. / N° de tél. 604-876-0606 ( )

Year / Année: 12 | Month / Mois: 12 | Day / Jour: 21 | Signature:

C Receiver / consignee
Réceptionnaire / destinataire

Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial: BCG-20128/RS-17820

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année | Month / Mois | Day / Jour

Time / Heure 2: ☐ A.M. ☐ 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 30

Registration No./Provincial ID No. N° d'immatriculation/d'id provincial

	Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5 Sub. class(es) / Classe(s) sub.	UN No. / N°NU 6	Packing / risk gr. / Gr. d'emballage/ de risque 7	Quantity shipped / Quantité expédiée	Units / Unités 8	Packaging/Contenant No. / N°	Codes Int. – ext. 9	Phys. state / État phys. 10
(i)	BC	Waste Oil Filters (Non-TDG Regulated)	NA	NA	NA	0	KG	0	01	S
(ii)	BC	Petroleum Distillates, N.O.S.	3	1268	III	0	L	0	01	L
(iii)	BC	Leachable Trace Waste (Cadmium) (Waste Antifreeze)	NA	NA	NA	10,039	L	01	83	L
	BC									

	Quantity received / Quantité reçue	Units / Unités 31	Comments / Commentaires 32	Handling Code / Code de manutention 33	Shipment / Envoi 34 Accepted / Accepté	Refused / Refusé	Decont Pack. / Cont	Vi V

	Notice No. / N° de notification 11	Notice Line No. / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code É ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays 18 Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify)
Si code de manutention « autre » (spécifier)

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 (caractère d'imprimerie)

Signature | Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale
☐ Attached /Ci-joint: ☐ As follows/ Ci-contre:
24 hour number- 1-866-864-0051

Generator / consignor 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 (caractère d'imprimerie): KEN CHOW

Signature | Tel. No. / N° de tél. 604 952 1220 20

Date shipped / Date d'expédition 21: Year / Année: 12 | Month / Mois: 12 | Day / Jour: 21

Time / Heure: ☐ A.M. ☐ P.M. 03:30

Scheduled arrival date / Date d'arrivée prévu: Year / Année: 12 | Month / Mois: 12 | Day / Jo: 22

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / ver

NEWALTA

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41185-9 / BG41181-8 / BG41186-7.

Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
50 L	Pine Oil	Reuse as industrial fuel	BG 80298-2	Newalta, Surrey BC
2100 L	Flammable Liquids (weathered fuel)	Recycled into industrial fuel products @ Newalta Surrey	BG 80331-1	Newalta, Surrey BC
150 L	Snow White (Calcium Carbonate in water)	Water treatment, solids incinerated	BG 80298-2	Newalta, Surrey BC

Name: Andy Hatton

Title: Operations Supervisor

Signature:

Date: MARCH 14 - 2011.

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.

BG80298-2

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 1

Company name / Nom de l'entreprise

Mailing address / Adresse postale — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.

Shipping site address / Adresse du lieu de l'expédition

City / Ville — Province — Postal code / Code postal

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 23

Company name / Nom de l'entreprise

Mailing address / Adresse postale — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only — Port of exit / Point de sortie — International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct.* 26
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) — Tel. No. / N° de tél. — Signature

Year / Année — Month / Mois — Day / Jour

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2 — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Mailing address / Adresse postale — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de l'expédition

City / Ville — Province — Postal code / Code postal

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année — Month / Mois — Day / Jour — Time / Heure 29 — ☐ A.M. ☑ 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 30 — Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5 Sub. class(es) / Classe(s) sub.	UN No. / N° NU 6	Packing / risk gr. / Gr. d'emballage/ de risque 7	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités 8	Packaging / Contenant 9 No. / N°	Codes Int. – ext.	Phys. state / État phys. 10	Quantity received / Quantité reçue	Units / L or / ou kg / Unités 31	Comments / Commentaires 32	Handling / Code / Code de manutention 33	Shipment / Envoi 34 Accepted / Accepté	Refused / Refusé	Decont. 35 Pack. / Cont.	Veh. / Véh.
(i)					4510	L	02	01	L	4510	L		09	—		—	
(ii)	(comingled)				1000	L	01	09	L	1000	L		09	—		—	
(iii)					2050	L	10	01	L	2050	L		09	—		—	

Pump out → Show united mix.

Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays 18 Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)											
(ii)	International use only										
(iii)											
(iv)											

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

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 (caractère d'imprimerie) 37

Signature — Tel. No. / N° de tél.

Special handling / Manutention spéciale 22
☑ Attached / Ci-joint: ☐ As follows / Ci-contre :

Generator / consignor 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 (caractère d'imprimerie) — Signature — Tel. No. / N° de tél. 20

Date shipped / Date d'expédition 21 — Year / Année — Month / Mois — Day / Jour — Time / Heure — ☑ A.M. ☐ P.M.

Scheduled arrival date / Date d'arrivée prévue — Year / Année — Month / Mois — Day / Jour

MOE 04-1917 (07/07)

Mailed by Consignee to Consignor - Postée par le destinataire à l'expéditeur

Copy / Copie 6 (brown / brun)

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.

BG80331-1

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 1: BCG #00119

Company name / Nom de l'entreprise: NEWALTA CORPORATION

Mailing address / Adresse postale: #9-7485 PROGRESSWAY DELTA, B.C. V4G 1A7

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.: (604) 952-1220

Shipping site address / Adresse du lieu de l'expédition: SAME AS ABOVE

City / Ville | Province | Postal code / Code postal

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 23: LT0029

Company name / Nom de l'entreprise: Mc Rae's Environmental SERVICES LTD.

Mailing address / Adresse postale: 7783 PROGRESS WAY DELTA, B.C. V4G 1A3

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.: (604) 940-6200

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer 1 / Rail car No. 1 / 1re remorque - wagon	1681-KF	B.C.
Trailer 2 / Rail car No. 2 / 2e remorque - wagon	1015-3B	B.C.

Port of entry / Point d'entrée — International use only | Port of exit / Point de sortie — International use only 25

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année | Month / Mois | Day / Jour — Time / Heure ☐ A.M. ☐ P.M. 29

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 30 | Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2 — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: 25144453

Mailing address / Adresse postale: 7720 ANVIL WAY, SURREY, B.C. V4W 4H7

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.: (604) 952-1220

Receiving site address / Adresse du lieu de l'expédition: SAME AS ABOVE

City / Ville | Province | Postal code / Code postal

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. 26
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): JOAN VOGEL | Tel. No. / N° de tél.: (604) 940-6280

Year / Année | Month / Mois | Day / Jour: 10 | 1 | 25 | Signature:

Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5 — Sub. class(es) / Classe(s) sub.	UN No. / N° NU 6	Packing / risk gr. / Gr. d'emballage / de risque 7	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités 8	Packaging / No. / N°	Contenant / Codes / Int. – ext. 9	Phys. state / État phys. 10
(i)	WASTE FLAMMABLE LIQUID, N.O.S. (TOLUENE)	3	UN1993	II	4,600	L	01	03	L
(ii)									
(iii)									
(iv)									

Quantity received / Quantité reçue	Units / L or / ou Kg / Unités 31	Comments / Commentaires 32	Handling / Code / Code de manutention 33	Shipment / Envoi — Accepted / Accepté 34	Shipment / Envoi — Refused / Refusé 34	Decont. / Pack. / Cont. 35	Decont. / Veh. / Véh. 35

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification 11	Shipment / Envoi 12	Of / De 12	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays — Export / Exportation 18	Import / Importation 18	Customs code(s) / Code(s) de douanes 19
(i)											
(ii)											
(iii)											
(iv)											

International use only

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. 37

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature | Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale 22
☐ Attached / Ci-joint ☑ As follows / Ci-contre: 24 HR. # 1-800-56 (SPILL) (7-7455)

Generator / consignor certification: I certify that the information contained in Part A is correct and complete. 20
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 (caractère d'imprimerie): DENNIS J. SHERRY | Signature | Tel. No. / N° de tél.: (604) 952-1220

Date shipped / Date d'expédition 21: Year / Année | Month / Mois | Day / Jour: 10 | 1 | 25 — Time / Heure ☐ A.M. ☑ P.M.: 1400

Scheduled arrival date / Date d'arrivée prévue: Year / Année | Month / Mois | Day / Jour: 10 | 1 | 25

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte)

NEWALTA

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41180-0

Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
400 L	Used Oil	Re-refined into new lubricants products	BG 80299-0	Newalta, North Vancouver

Name: Chris Parent

Title: Plant Manager

Signature: Alex Chang for C. Parent

Date: March 16/2011

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.

BG80299-0

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

A Generator / consignor / Producteur / expéditeur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 1: BCG-00119

Company name / Nom de l'entreprise: NEWACTA CORPORATION

Mailing address / Adresse postale: 9-7483 PROGRESS WAY | City / Ville: DELTA | Province: V4G-1E7 | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.: (604) 952-1770

Shipping site address / Adresse du lieu de l'expédition: 9-7483 PROGRESS WAY. | City / Ville: DELTA | Province: B.C. | Postal code / Code postal

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2: NEWACTA | Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RSO85711

Mailing address / Adresse postale: AS BELOW | City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.: ( )

Receiving site address / Adresse du lieu de l'expédition: 130 FORESTEE ST. | City / Ville: N. VAN | Province | Postal code / Code postal: V7H-2M9

B Carrier / Transporteur

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 23: LT 08509

Company name / Nom de l'entreprise: NEWACTA

Mailing address / Adresse postale: 130 FORESTEE ST. N. VAN. BC. | City / Ville | Province | Postal code / Code postal: V7H 2M9

E-mail / Courrier électronique | Tel. No. / N° de tél.: ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon	AM8947	BC
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée | International use only | Port of exit / Point de sortie | International use only 25

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor 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.* 26

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): K LaBonte | Tel. No. / N° de tél.: 604 929-1281

Year / Année: 10 | Month / Mois: 12 | Day / Jour: 17 | Signature:

C Receiver / consignee / Réceptionnaire / destinataire

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél.: ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année | Month / Mois | Day / Jour

Time / Heure 29 ☐ A.M. ☐ 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 30

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

	Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5 Sub. class(es) / Classe(s) sub.	UN No. / N°NU 6	Packing / risk gr. / Gr. d'emballage / de risque 7	Quantity shipped / Quantité expédiée	Units / 8 L or / ou Kg Unités	Packaging / Contenant 9 No. / N°	Codes Int. – ext.	Phys. state / État phys. 10
(i)		WASTE OIL (BCH002)	WR	NA	NA	12,880	L	01	03	L
(ii)										
(iii)										

	Quantity received / Quantité reçue	Units / 31 L or / ou kg Unités	Comments / 32 Commentaires	Handling / 33 Code / Code de manutention	Shipment / Envoi 34 Accepted / Accepté	Refused / Refusé	Decont. 35 Pack. / Cont.	Veh. / Véh.
(i)								
(ii)								
(iii)								

	Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays 18 Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)												
(ii)												
(iii)												
(iv)												

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

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 (caractère d'imprimerie) 3

Signature | Tel. No. / N° de tél.: ( )

Special handling / Manutention spéciale 22
☐ Attached / Ci-joint: ☐ As follows / Ci-contre: NEWACTA 1-800-567-7456

Generator / consignor 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 (caractère d'imprimerie): STANLEY | Signature | Tel. No. / N° de tél.: (604) 952-1770 20

21 Date shipped / Date d'expédition — Year / Année: 10 | Month / Mois: 12 | Day / Jour: 17 | Time / Heure ☐ A.M. ☐ P.M. | Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 | Month / Mois: 12 | Day / Jour: 17

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

NEWALTA

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41185-9

Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
150 kg	Waste Oil Filters	Recycled into raw materials – all recycled	Processed at Newalta Delta	Newalta, Delta BC

Name: Susan Wu

Title: Operations Supervisor

Signature: for

Date: March 14/11

SECTION 4

Disposal of Hazardous Waste
Newalta
#9 – 7483 Progress Way, RS 8175
Delta BC V4G 1E7
Contact: Dave Ellwood (604)982-2308
Facility Licence No: RS 8175

Pending Certificates of Destruction

NEWALTA

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41182-6/ BG41185-9

Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
55 kg	Toxic Solids, Inorganic	Incineration	BG80300-6	Earth Tech Canada Inc., Swan Hills, AB
200 L	Toxic Liquids, Flammables	Incineration	BG80328-7	Earth Tech Canada Inc., Swan Hills, AB
268 kg	Dowtherm (contained H2S)	Incineration	BG80328-7	Earth Tech Canada Inc., Swan Hills, AB

Name: Susan Wu

Title: Operations Supervisor

Signature: _____

Date: _____

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41180-0/ BG41181-8

Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
492 kg	Xanthates	Incineration	BG80328-7	Earth Tech Canada Inc., Swan Hills, AB
199 kg	Articles containing PCB (lamp ballasts and capacitors)	Incineration	BG80328-7	Earth Tech Canada Inc., Swan Hills, AB

Name: Susan Wu

Title: Operations Supervisor

Signature: _____

Date: _____

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.

BG80300-6

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

A Generator / consignor / Producteur / expéditeur

1 Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: BCG00119

Company name / Nom de l'entreprise: Neutralex Corporation

Mailing address / Adresse postale: #9-7483 Progress Way, City / Ville: Delta, Province: BC, Postal code / Code postal: V4G1E7

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 6049521220

Shipping site address / Adresse du lieu de l'expédition: #9-7483 Progress Way

City / Ville: Delta, Province: BC, Postal code / Code postal: V4G1E7

B Carrier / Transporteur

23 Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: LT 0928

Company name / Nom de l'entreprise: Alchemist Transport Inc.

Mailing address / Adresse postale: 23720-72 Ave, City / Ville: Langley, Province: BC, Postal code / Code postal:

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 604 882 1518

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon	29627 48	BC
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only

Port of exit / Point de sortie: International use only 25

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. 26
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): DAVID GELOWITZ

Tel. No. / N° de tél.: 604 882 1518

Year / Année: 11 | Month / Mois: 01 | Day / Jour: 20 | Signature:

C Receiver / consignee / Réceptionnaire / destinataire

27 Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

28 Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville | Province | Postal code / Code postal

E-mail / Courrier électronique | Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année | Month / Mois | Day / Jour

29 Time / Heure ☐ A.M. ☐ P.M.

Intended Receiver / consignee / Réceptionnaire / destinataire prévu

2 Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ABR10147

Earthtech / AECOM

Mailing address / Adresse postale: PO Box 1500, City / Ville: Sirdar Hills, Province: AB, Postal code / Code postal: T0G 2C0

E-mail / Courrier électronique:

Tel. No. / N° de tél.: 780 333 4197

Receiving site address / Adresse du lieu de l'expédition: Sirdar Hills Treatment Centre

City / Ville: Sirdar Hills, Province: AB, Postal code / Code postal: T0G 2C0

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 30

Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

	3 Prov. code / Code prov.	4 Shipping name / Appellation réglementaire	5 Class / Classe; Sub. class(es) / Classe(s) sub.	6 UN No. / N° NU	7 Packing / risk gr. / Gr. d'emballage / de risque	8 Quantity shipped / Quantité expédiée	8 Units / L or / ou Kg / Unités	9 Packaging/Contenant No. / N°	9 Codes Int.–ext.	10 Phys. state / État phys.
(i)		Waste Toxic Solid, Inorganic, N.O.S. (Lidocaine Hydrochloride)	6.1	~~3288~~ 1851	III	205	L	01	01	S
(ii)										
(iii)		See Manifest Supplements								

31 Quantity received / Quantité reçue	Units / L or / ou kg / Unités	32 Comments / Commentaires	33 Handling Code / Code de manutention	34 Shipment / Envoi: Accepted / Accepté	Refused / Refusé	35 Decont.: Pack. Cont	Veh. Véh.

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

11 Notice No. / N° de notification	Notice Line No / N° de ligne de la notification	12 Shipment / Envoi	Of / De	13 D or R code / Code É ou R	14 C code / Code C	15 Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE	16 H code / Code H	17 Y code / Code Y	18 National code in country of / Code du pays: Export / Exportation	Import / Importation	19 Customs code(s) / Code(s) de douanes
(i)											
(ii)											
(iii)		International use only									
(iv)											

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 (caractère d'imprimerie) 37

Signature | Tel. No. / N° de tél. ( )

Generator / consignor 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 (caractère d'imprimerie): Poe, Chloe

Signature

20 Tel. No. / N° de tél.: 6049521220

Special handling / Manutention spéciale 22

☐ Attached / Ci-joint: ☑ As follows / Ci-contre: 24 Hr # 1-800-567-8911 (7-7455)

21 Date shipped / Date d'expédition: Year / Année: 11 | Month / Mois: 01 | Day / Jour: 20

Time / Heure ☐ A.M. ☐ P.M. 1230

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 11 | Month / Mois: 01 | Day / Jour: 24

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte)

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Environment

Manifest Supplement - Multiple Different Wastes

Form 6
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.2

CONDITIONS:

This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

a) There is only one consignor (Generator) and only one Consignee (Receiver) for all of the waste listed on the referenced manifest and on this form.
b) There are no additions or deletions of waste from the consignment after the shipment leaves the cosignor's site.
c) The form must be attached to the reference manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR:	NEWALTA CORPORATION	REFERENCE MANIFEST NUMBER:	BG 80328-7

Physical State	Shipping Name of Waste	TDGA/PIN	Quantity Shipped	Units L/KG	Class	Packing Group	Packaging No.	Packaging Codes	Quantity Received	Units L/KG	Shipment Discrepancy*	Handling Code	Decontamination Packaging/Container YES	Decontamination Packaging/Container NO	Decontamination Vehicle YES	Decontamination Vehicle NO
S	WASTE TOXIC SOLID, ORGANIC, N.O.S. (PHENOL, LEAD ACETATE)	UN2811	205	L	6.1	II	1	01								
L	WASTE TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL, NITROBENZENE)	UN2810	1,230	L	6.1	II	6	01								
S	WASTE SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (PHENOL, LEAD ACETATE)	UN3175	1,025	L	4.1	II	5	01								
L	WASTE ETHANOLAMINE CONTAMINATED WITH H_2S	UN2491	205	L	8	II	1	01								
L	WASTE TOXIC LIQUID, ORGANIC, N.O.S. (PHENOL, LEAD ACETATE)	UN2810	205	L	6.1	II	1	01								
L	WASTE HYDROXIDE, AQUEOUS	UN2014	410	L	5.1(8)	II	2	01								
S	WASTE TOXIC SOLID, ORGANIC, N.O.S. (PHENOL, LEAD ACETATE)	UN2811	400	L	6.1	II	1	07								
S	WASTE ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLIDS, N.O.S. (DEBRIS)	NA/R	1,200	L	NA	NA	3	07								

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

DENNIS J. SHERRY	Dennis J. Sherry	604 952-1220	604 940-0576	10/12/10
Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)

INSTRUCTION: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where Consignee is located.
- Attaches Copy B to Copy 4 of Manifest and returns to Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

Identify any shipment discrepancy. Attach Addendum if necessary.

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.

BG80328-7

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 1

BCG# 00119

Company name / Nom de l'entreprise: NEWALTA CORPORATION

Mailing address / Adresse postale: #9-7483 PROGRESS WAY — City / Ville: DELTA — Province: B.C. — Postal code / Code postal: V4G 1E7

E-mail / Courrier électronique — Tel. No. / N° de tél.: (604) 952-1220

Shipping site address / Adresse du lieu de l'expédition: SAME AS ABOVE

City / Ville — Province — Postal code / Code postal

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 23: LT028

Company name / Nom de l'entreprise: A.A.C. HAMMS TRANS

Mailing address / Adresse postale — City / Ville: LANGLEY — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.: (604) 532-1578

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov. 24
Trailer - Rail car No. 1 / 1re remorque - wagon	SXR 665	BC
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only

Port of exit / Point de sortie — International use only — 25

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial 28

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Intended Receiver / consignee / Réceptionnaire / destinataire prévu 2 — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: ABR 10147

EARTH TECH. CANADA INC.

Mailing address / Adresse postale: P.O. BOX 1500 — City / Ville: SWAN HILLS — Province: AB — Postal code / Code postal: T0G 2C0

E-mail / Courrier électronique — Tel. No. / N° de tél.: 780-333-8338

Receiving site address / Adresse du lieu de l'expédition: SAME AS ABOVE

City / Ville — Province — Postal code / Code postal

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor 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.* 26

Name of authorized person (print) / Nom de l'agent autorisé (caractères d'imprimerie): K MASON — Tel. No. / N° de tél. ( )

Year / Année: 10 — Month / Mois: 12 — Day / Jour: 10 — Signature:

Date received / Date de réception: Year / Année — Month / Mois — Day / Jour — Time / Heure — ☐ A.M. ☐ P.M. 29

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 30 — Registration No./Provincial ID No. / N° d'immatriculation/d'id provincial

Prov. code / Code prov. 3	Shipping name / Appellation réglementaire 4	Class / Classe 5 Sub. class(es) / Classe(s) sub.	UN No. / N° NU 6	Packing / risk gr. 7 / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units 8 L or / ou Kg Unités	Packaging / Contenant 9 No. / N°	Codes Int. – ext.	Phys. state / État phys. 10
(i)	SEE MANIFEST SUPPLEMENT FORM 6 ATTACHED:								
(ii)	WASTE SOLIDS CONTAINING FLAMMABLE LIQUID, N.O.S. (RAGS, FLM)	4.1	UN3175	II	2,050	L	10	01	S
(iii)	WASTE PESTICIDES, SOLID, TOXIC, N.O.S. (DIAZINON)	6.1	UN2588	II	1,025	L	5	01	S
	WASTE PESTICIDES, LIQUID, TOXIC, N.O.S. (CHLORDANE 2-4-D)	6.1	UN2902	II	2,460	L	12	01	L

Quantity received / Quantité reçue	Units 31 L or / ou kg Unités	Comments / Commentaires 32	Handling 33 Code / Code de manutention	Shipment / Envoi 34 Accepted / Accepté	Refused / Refusé	Decont. 35 Pack. Cont.	Veh. Véh.

Notice No. / N° de notification 11	Notice Line No / N° de ligne de la notification	Shipment / Envoi 12	Of / De	D or R code / Code D ou R 13	C code / Code C 14	Basel Annex VIII or OECD Code / Annexe VIII de Bâle ou Code OCDE 15	H code / Code H 16	Y code / Code Y 17	National code in country of / Code du pays 18 Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes 19
(i)											
(ii)											
(iii)											
(iv)											

International use only

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier) 36

Generator / consignor 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 (caractère d'imprimerie): K MASON — Signature — Tel. No. / N° de tél.: (604) 952-1220 — 20

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.* 37

Name of authorized person (print) / Nom de l'agent autorisé (caractère d'imprimerie)

Signature — Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale 22

☐ Attached / Ci-joint: ☒ As follows / Ci-contre: 24 hr # 1-800-567-7455

21 Date shipped / Date d'expédition: Year / Année: 10 — Month / Mois: 12 — Day / Jour: 10 — Time / Heure: ☐ A.M. ☒ P.M. 1530

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 10 — Month / Mois: 12 — Day / Jour: 15

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte

BRITISH COLUMBIA
The Best Place on Earth

Ministry of Environment

Manifest Supplement - Multiple Different Wastes

Form 6
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.2

CONDITIONS:

This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one consignor (Generator) and only one Consignee (Receiver) for all of the waste listed on the referenced manifest and on this form.
(b) There are no additions or deletions of waste from the consignment after the shipment leaves the cosignor's site.
(c) The form must be attached to the reference manifest and must be in the vehicle when the shipment is being transported.

CONSIGNOR: Neralta Corporation | **REFERENCE MANIFEST NUMBER:** BG80328-7

Physical State	Shipping Name of Waste	TDGA/PIN	Quantity Shipped	Units L/KG	Class	Packing Group	Packaging No.	Packaging Codes	Quantity Received	Units L/KG	Shipment Discrepancy*	Handling Code	Decontamination Packaging/Container YES	Decontamination Packaging/Container NO	Decontamination Vehicle YES	Decontamination Vehicle NO
S	Xanthates	UN3342	615	L	4.2	II	63	01								
S	Articles Containing PCB (Debris)	UN2315	1025	L	9	II	05	01								
	Polychlorinated Biphenyls															
L	Waste Carbon Disulphide	~~3(6.1)~~	205	L	3(6.1)	II	01	01								
~~L~~	~~Waste Ammonium Nitrate~~	UN1131														
L	Waste Ammonium Nitrate	UN1942	2460	L	5.1	II	01	01								
S	Solids Containing Flammable Liquids NOS (Debris w/solvent)	UN3175	2255	L	4.1	II	11	01								

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
Roy Choo		6049521220	6049521230	Dec 10/10

INSTRUCTION: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where Consignee is located.
- Attaches Copy B to Copy 4 of Manifest and returns to Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

*Identify any shipment discrepancy. Attach Addendum if necessary.

Certificate of Treatment, Recycling and/or Disposal

This is to certify that the following waste material was received, managed and treated in compliance with all Federal and Provincial laws and regulations.

Consignee/Receiver: Newalta Corp.
#9 – 7483 Progress Way
Delta, BC V4G 1E7

Consignor/Generator: Quantum Murray L.P.
100 – 3600 Viking Way
Richmond, BC V6V 1N6

Receiver Reg.#: RS8175

Generator Reg.#: NUG100008

Manifest #: BG41180-0

Service Date: November 15, 2010

Quantity	Material Description	Treatment/Disposal Method	Outgoing Manifest	Final Treatment/Disposal Facility
98 L	Corrosive Liquids HCL	Neutralization	BG89064-0	PSC – Kent Washington, USA

Name: Susan Wu

Title: Operations Supervisor

Signature: _____

Date: _____

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.

BF89064-0

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

A Generator / consignor — Producteur / expéditeur

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: BCG 00119

Company name / Nom de l'entreprise: NEWALTA CORPORATION

Mailing address / Adresse postale: #9-7482-PROGRESS WAY — City / Ville: DELTA (B.C.) — Province — Postal code / Code postal: V4G 1E7

E-mail / Courrier électronique — Tel. No. / N° de tél.: (604) 952 1220

Shipping site address / Adresse du lieu de l'expédition: SAME AS GENERATOR ABOVE

City / Ville: DELTA — Province: (BC) — Postal code / Code postal: V4G 1E7

B Carrier — Transporteur

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: T 0859

Company name / Nom de l'entreprise: NEWALTA CORPORATION

Mailing address / Adresse postale: #9-7482-PROGRESS WAY — City / Ville: DELTA (B.C.) — Province — Postal code / Code postal: V4G 1E7

E-mail / Courrier électronique — Tel. No. / N° de tél.: (604) 952 1220

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon	P 10991	BC
Trailer - Rail car No. 2 / 2e remorque - wagon	602715	BC

Port of entry / Point d'entrée — International use only

Port of exit / Point de sortie — International use only

Carrier Certification : I certify that I have received waste or recyclable material from the generator / consignor 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): DARIN ROSS (MONTGOMERY) — Tel. No. / N° de tél.: (604) 501 2350

Year / Année: 10 — Month / Mois: 11 — Day / Jour: 18 — Signature:

Intended Receiver / consignee — Réceptionnaire / destinataire prévu

BURLINGTON ENVIRONMENTAL SERVICE

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: (WA) 991281767

Mailing address / Adresse postale: 20245-77TH AVE SOUTH — City / Ville: KENT (WA) — Province — Postal code / Code postal: 98032

E-mail / Courrier électronique — Tel. No. / N° de tél.: 253 872 8030

Receiving site address / Adresse du lieu de l'expédition: SAME AS ABOVE RECEIVER

City / Ville: KENT — Province: WA — Postal code / Code postal: 98032

C Receiver / consignee — Réceptionnaire / destinataire

Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☐ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année — Month / Mois — Day / Jour

Time / Heure ☐ A.M. ☐ P.M.

If waste or recyclable material to be transferred, specify intended company name/ Si les dechets ou matières recyclables doivent être transférés, préciser le nom du destinataire

Registration No./Provincial ID No. N° d'immatriculation/d'id provincial

Prov. code Code prov.	Shipping name Appellation réglementaire	Class / Classe Sub. class(es) Classe(s) sub.	UN No. N°NU	Packing / risk gr. Gr. d'emballage/ de risque	Quantity shipped Quantité expédiée	Units L or / ou Kg Unités	Packaging/Contenant No. / N°	Codes Int– ext.	Phys. state État phys.
(i) 5	WASTE CORROSIVE SOLIDS NOS (HYDROCHLORIC ACID, PHOSPHORIC ACID)	8	UN1760	II	1000	L	1	07	L
(ii) 6	WASTE CORROSIVE LIQUIDS NOS SODIUM HYDROXIDE, POTASSIUM HYDROXIDE	8	UN1760	II	400	L	2	01	L
(iii) 7	WASTE ENVIRONMENTALLY HAZARDOUS LIQUIDS NOS (LEAD, CHROMIUM)	9	UN3077	III	1000	L	1	07	L
8	WASTE ENVIRONMENTALLY HAZARDOUS SOLIDS NOS (LEAD, CHROMIUM)	9	UN3077	III	5000	K	5	07	S

Quantity received Quantité reçue	Units L or / ou kg Unités	Comments Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted Accepté	Shipment / Envoi Refused Refusé	Decont. Pack. Cont.	Decont. Veh. Véh.

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Notice No. N° de notification	Notice Line No N° de ligne de la notification	Shipment Envoi	Of / De	D or R code Code D 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	National code in country of / Code du pays Export Exportation	National code in country of / Code du pays Import Importation	Customs code(s) Code(s) de douanes
(i) 521816	5	12	104	D-09	C-18 +22	A-1020	H-8	Y-31 +34			3825.90.00.00
(ii) 521816	6	12	104	D-09	C-24	A-4090	H-8	Y-35			3825.90.00.00
(iii) 521816	7	12	104	D-09	C-08 +11	A-1020	H-13	Y-31 +34			3825.90.00.00
8 521816	1	12	104	D-09	C-08 +11	A-1020	H-13	Y-31 +34			3825.90.00.00

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 (caractère d'imprimerie)

Signature — Tel. No. / N° de tél. ( )

Special handling / Manutention spéciale

☐ Attached /Ci-joint: ☒ As follows/ Ci-contre: 24 HRS # 1 800 567 7455

Generator / consignor 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 (caractère d'imprimerie): SURJIT S. SETHI — Signature — Tel. No. / N° de tél.: (604) 952 1220

Date shipped / Date d'expédition: Year / Année: 10 — Month / Mois: 11 — Day / Jour: 18 — Time / Heure: 15:30 ☐ A.M. ☒ P.M.

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 10 — Month / Mois: 11 — Day / Jour: 18

MOE 04-1917 (07/07)

Retained by Consignor (Generator) - Gardée par l'expéditeur

Copy / Copie 2 (green / verte)

SECTION 4

Disposal of Hazardous Waste
Newalta
#9 – 7483 Progress Way, RS 8175
Delta BC V4G 1E7
Contact: Dave Ellwood (604)982-2308
Facility Licence No: RS 8175

Incoming Manifests Site to Newalta

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

BG41180-0

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.

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

A Generator / consignor — Producteur / expéditeur — Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: NUG1000008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: Po box 2200 Iqaluit NU X0A 0H0

E-mail / Courier électronique:

Tel. No. / N° de tél.: ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay and Ioa Bay

City / Ville: Nunavut — Province: NU — Postal code / Code postal:

Intended Receiver / consignee — Réceptionnaire / destinataire prévu: Newalta Corporation — Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: RS8175

Mailing address / Adresse postale: 9-7483 Progress Way, Delta BC V4G 1E7

E-mail / Courier électronique:

Tel. No. / N° de tél.: 604 952-1220

Receiving site address / Adresse du lieu de l'expédition: 7483 Progress Way

City / Ville: Delta — Province: BC — Postal code / Code postal: V4G 1E7

B Carrier — Transporteur — Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: N/A

Company name / Nom de l'entreprise: Northern Transportation Company Limited

Mailing address / Adresse postale: 9450 River Rd. Delta BC V4G 1B5

E-mail / Courier électronique:

Tel. No. / N° de tél.: ( )

Vehicle / Véhicule — Registration No. / N° d'immatriculation — Prov.

Trailer - Rail car No. 1 / 1re remorque - wagon:

Trailer - Rail car No. 2 / 2e remorque - wagon:

Port of entry / Point d'entrée — International use only

Port of exit / Point de sortie — International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor 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): Norm de l'agent autorisé (caractères d'imprimerie): D. J. [illegible] SHERRY — Tel. No. / N° de tél.: 867-874-5100

Signature:

Year / Année: 10 — Month / Mois: 01 — Day / Jour: 24

C Receiver / consignee — Réceptionnaire / destinataire — Registration No. / Provincial ID No. — N° d'immatriculation - d'id. provincial: NEWALTA CORP. — RS8175

Receiver / consignee information same as in Part A
Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise:

Mailing address / Adresse postale:

City / Ville: — Province: — Postal code / Code postal:

E-mail / Courier électronique: — Tel. No. / N° de tél.: ( )

Receiving site address / Adresse du lieu de destination:

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Date received / Date de réception — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 10

Time / Heure: 12:30 ☐ A.M. ☑ 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:

	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe — Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units / Lor / ou Kg / Unités	Packaging / Contenant — No. / N°	Codes	Phys. state / État phys.
(i)		Xanthates	4.2	UN3342	II	450	KG	03	01	S
(ii)		Corrosive Liquids N.O.S.	8	UN 1760	II	98	L	03	01	L
(iii)		Batteries wet, filled with acid, electric storage	8	UN 2794	III	900	KG	08	01	S
(iv)		USED OIL	N/A	N/A	N/A	400	L	01	01	L

	Quantity received / Quantité reçue	Units / Lor / ou Kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi — Accepted / Accepté	Shipment / Envoi — Refused / Refusé	Decont. — Pack. Cont.	Decont. — Veh. Véh.
(i)	450	KG		01	✓		N	N
(ii)	98	L		01	✓		N	N
(iii)	900	KG		01	✓		N	N
(iv)	400	L		01	✓		N	N

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier):

	Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment Envoi	Of / 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	National code in country of / Code du pays — Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)												
(ii)												
(iii)												
(iv)												

International use only

Generator / consignor 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): Norm de l'agent autorisé (caractères d'imprimerie): GAVIN DOWLITTER / Alberta Mgr NWT — Tel. No. / N° de tél.: 604-314-4629

Signature:

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): Norm de l'agent autorisé (caractères d'imprimerie): DENNIS J. SHERRY

Signature: Dennis J. Sherry — Tel. No. / N° de tél.: 604 952-1220

Special handling / Manutention spéciale:
☐ Attached / Ci-joint ☑ As follows / Ci-contre: Call Quantum 24 Hr NWT 1-800-333-6376

Date shipped / Date d'expédition — Year / Année: 10 — Month / Mois: 08 — Day / Jour: 24 — Time / Heure: ☐ A.M. ☐ P.M. 9:00

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 15

DST.

MOE 04-1917 (07/07)

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 3 (yellow / jaune)

(Page 8 of 10)

MOVEMENT DOCUMENT / MANIFEST
DOCUMENT DE MOUVEMENT / MANIFESTE

BG41181-8

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.

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NUG1000008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: PO Box 2200, City / Ville: Iqaluit, Province: NU, Postal code / Code postal: X0A 0H0

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay and Ida Bay

City / Ville: Nunavut, Province: NU, Postal code / Code postal

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Newalta Corporation — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RS8175

Mailing address / Adresse postale: 9-7483 Progress Way, City / Ville: Delta, Province: BC, Postal code / Code postal: V4G 1E7

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de l'expédition: 7483 Progress Way

City / Ville: Delta, Province: BC, Postal code / Code postal: V4G 1E7

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: N/A

Company name / Nom de l'entreprise: Northern Transportation Company Limited

Mailing address / Adresse postale: 9450 River Rd, City / Ville: Delta, Province: BC, Postal code / Code postal: V4G 1B5

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only

Port of exit / Point de sortie — International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor 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): WAYNE SERVANT — Tel. No. / N° de tél. 604 946 5110

Year / Année: 10 — Month / Mois: 08 — Day / Jour: 24 — Signature: Wayne Servant

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NEWALTA CORP. RS8175

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception — Year / Année: 10 — Month / Mois: 08 — Day / Jour: 10 — Time / Heure: 12:26 ☐ A.M. ☑ 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

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° ONU	Packing / risk gr. / Gr. d'emballage/ de risque	Quantity shipped / Quantité expédiée	Units / Lor / au Kg / Unités	Packaging/Contenant No. / N°	Packaging/Contenant Codes / Int. - ext.	Phys. state / État phys.
(i)	Flammable liquids, N.O.S.	3	UN 1993	II	2100	L	KD	01	L
(ii)	(diesel gas, jetfuel, water mixed)								
(iii)	Articles Containing								
(iv)	Polychlorinated biphenyls	9	UN 3315	II	145	KG	CO	01	KG

Quantity received / Quantité reçue	Units / Lor / au kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. Cont.	Decont. Veh. Véh.
2100	L		01	✓		N	N
145	KG		01	✓		N	N

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment Envoi	Of / De	D or R code / Code D 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	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)	International use only										
(iii)											
(iv)											

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): DENNIS J. SHERRY

Signature: Dennis J. Sherry — Tel. No. / N° de tél. 780 955-1220

Special handling / Manutention spéciale

☐ Attached / Ci-joint ☑ As follows / Ci-contre: Call Quantum Dynamics No. 1-866-333-6396

Generator / consignor 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): GAVIN DOMITTER

Signature: (ON BEHALF OF INA) — Tel. No. / N° de tél. 604-314-4629

Date shipped / Date d'expédition — Year / Année: 10 — Month / Mois: 08 — Day / Jour: 24 — Time / Heure: 9:00 ☐ A.M. ☑ P.M. PST

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 15 EST

MOE 04-1917 (07/07)

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 3 (yellow / jaune)

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.

BG41182-6

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NUG100008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada
Mailing address / Adresse postale: PO Box 2200, Iqaluit, NU X0A 0H0
E-mail / Courrier électronique:
Tel. No. / N° de tél.: ( )
Shipping site address / Adresse du lieu de l'expédition: Roberts Bay and Ioa Bay
City / Ville: Nunavut, NU
Province:
Postal code / Code postal:

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: Newalta Corporation
Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RS8175
Mailing address / Adresse postale: 9-7483 Progess Way, Delta, BC V4G 1E7
City / Ville:
Province:
Postal code / Code postal:
E-mail / Courrier électronique:
Tel. No. / N° de tél.: 604-952-1220
Receiving site address / Adresse du lieu de l'expédition: 9-7483 Progess Way
City / Ville: Delta, BC V4G 1E7
Province:
Postal code / Code postal:

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: n/a

Company name / Nom de l'entreprise: Northern Transportation Company Limited
Mailing address / Adresse postale: 9450 River Road, Delta, BC V4G 1B5
City / Ville:
Province:
Postal code / Code postal:
E-mail / Courrier électronique:
Tel. No. / N° de tél.: ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1e remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée: International use only
Port of exit / Point de sortie: International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor 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): WAYNE BENNETT
Tel. No. / N° de tél.: 867-924-7100
Signature:
Year / Année: 10 | Month / Mois: 01 | Day / Jour: 24

C Receiver / consignee / Réceptionnaire / destinataire — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RS8175

NEWALTA CORP.

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise:
Mailing address / Adresse postale:
City / Ville:
Province:
Postal code / Code postal:
E-mail / Courrier électronique:
Tel. No. / N° de tél.: ( )
Receiving site address / Adresse du lieu de destination:

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés:

Date received / Date de réception — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 10
Time / Heure: 12218 ☐ A.M. ☑ 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:

(i)	Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe: Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités	Packaging/Container No. / N°	Packaging/Container Codes Int – ext.	Phys. state / État phys.
(i)		Toxic Solids, N.O.S	6.1	UN 3288	II	55	kg	01	01	S
(ii)		Toxic Liquid, Flammable, Organic, N.O.S.	6.1 (3)	UN 2929	II	200	L	01	01	L
(iii)										
(iv)		N/R (ETHYLENE GLYCOL)	N/A	N/A	N/A	200	L	01	01	L

Quantity received / Quantité reçue	Units / L or / ou kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi: Accepted / Accepté	Shipment / Envoi: Refused / Refusé	Decont. Pack. Cont.	Decont. Véh.
55	kg		01	✓		N	N
200	L		01	✓		N	N
		24 Hour Emergency No.:					
200	L		01	✓		N	N

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier):

Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment / Envoi	Or / De	D or R code / Code É 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	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)											
(iii)											
(iv)											

International use only

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 (caractère d'imprimerie): DENNIS J. SHERRY
Signature: Dennis Sherry
Tel. No. / N° de tél.: 604-952-1220

Special handling / Manutention spéciale:
☐ Attached / Ci-joint ☑ As follows / Ci-contre: Call Contact 24hr NU 1-866-333-6370

Generator / consignor 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 (caractère d'imprimerie): GAVIN DOMITTER (ON BEHALF OF NNK)
Signature:
Tel. No. / N° de tél.: 604-314-4129

Date shipped / Date d'expédition — Year / Année: 10 | Month / Mois: 01 | Day / Jour: 24
Time / Heure: 19:30 ☐ A.M. ☑ P.M.
Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 | Month / Mois: 11 | Day / Jour: 15
EST

MOE 04-1917 (07/07)

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 3 (yellow / jaune)

(Page 6 of 10)

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.

BG41185-9

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: **NUG100008**

Company name / Nom de l'entreprise: **Indian and Northern Affairs Canada**

Mailing address / Adresse postale: **PO Box 2200, Iqaluit, NU X0A 0H0**

E-mail / Courrier électronique — Tel. No. / N° de tél.: ( )

Shipping site address / Adresse du lieu de l'expédition: **Roberts Bay and Ioa Bay**

City / Ville: **Nunavut, NU** — Province — Postal code / Code postal

Intended Receiver / consignee / Réceptionnaire / destinataire prévu: **Newalta Corporation** — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: **R58175**

Mailing address / Adresse postale: **9-7483 Progress Way, Delta, BC V4G 1E7**

E-mail / Courrier électronique — Tel. No. / N° de tél.: **604-952-1220**

Receiving site address / Adresse du lieu de l'expédition: **9-7483 Progess Way**

City / Ville: **Delta, BC V4G 1E7** — Province — Postal code / Code postal

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: **n/a**

Company name / Nom de l'entreprise: **Northern Transportation Company Limited**

Mailing address / Adresse postale: **9450 River Road, Delta, BC V4G 1B5**

E-mail / Courrier électronique — Tel. No. / N° de tél.: ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1e remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only — Port of exit / Point de sortie — International use only

Carrier Certification: I certify that I have received waste or recyclable material from the generator / consignor 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): WAYNE ROBINET — Tel. No. / N° de tél.: 867-777-5140

Signature — Year / Année: 10 — Month / Mois: 01 — Day / Jour: 04

C Receiver / consignee / Réceptionnaire / destinataire: NEWALTA CORP. — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: **R58175**

Receiver / consignee information same as in Part A / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.: ( )

Receiving site address / Adresse du lieu de destination

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Date received / Date de réception — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 10 — Time / Heure: 12:27 ☐ A.M. ☑ 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

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units / Unités	Packaging/Container No. / N°	Packaging/Container Codes Int. - est.	Phys. state / Etat phys.
(i)	Pine Oil	3	UN 1272	III	50	L	01	01	L
(ii)	Asbestos, White	9	UN 2590	III	200	KG	03	05	S
(iii)	Waste Oil filters	N/A	N/A	N/A	150	KG	45	07	S
(iv)	Wast Downhein	N/A	N/A	N/A	70	L	01	01	L

Quantity received / Quantité reçue	Units / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi Accepted / Accepté	Shipment / Envoi Refused / Refusé	Decont. Pack. Cont.	Decont. Veh.
50	L		01	✓		N	N
200	KG		01	✓		N	N
150	KG		04	✓		N	N
70	L		01	✓		N	N

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment Envoi	O / Oe	D or R code / Code D 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	National code in country of / Code du pays: Export / Exportation	Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)	International use only										
(iii)											
(iv)											

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): DENNIS J. SHERRY

Signature: Dennis J. Sherry — Tel. No. / N° de tél.: 604952-1220

Special handling / Manutention spéciale: ☐ Attached / Ci-joint ☐ As follows / Ci-contre:

24 Hour Emergency No.: 1-866-333-6376

Generator / consignor 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): GAVIN DOMITTER (ON BEHALF OF INAC) — Signature — Tel. No. / N° de tél.: (604) 311-4629

Date shipped / Date d'expédition — Year / Année: 10 — Month / Mois: 01 — Day / Jour: 24 — Time / Heure: 9:50 ☐ A.M. ☐ P.M.

Scheduled arrival date / Date d'arrivée prévue — Year / Année: 10 — Month / Mois: 11 — Day / Jour: 15

ESI

MOE 04-1917 (07/07)

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 3 (yellow / jaune)

(Page 7 of 10)

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 provinciales sur l'environnement et le transport.

BG41186-7

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

A Generator / consignor / Producteur / expéditeur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: NUG100008

Company name / Nom de l'entreprise: Indian and Northern Affairs Canada

Mailing address / Adresse postale: PO Box 2200, Iqaluit, NU X0A 0H0 — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Shipping site address / Adresse du lieu de l'expédition: Roberts Bay and Ioa Bay

City / Ville: Nunavut, NU — Province — Postal code / Code postal

Intended Receiver / consignee / Récipiendaire / destinataire prévu: Newalta Corporation — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RS8175

Mailing address / Adresse postale: 9-7483 Progress Way, Delta, BC V4G 1E7 — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél.: 604-952-1220

Shipping site address / Adresse du lieu de l'expédition: 9-7483 Progress Way

Delta, BC V4G 1E7 — Province — Postal code / Code postal

B Carrier / Transporteur — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: n/a

Company name / Nom de l'entreprise: Northern Transportation Company Limited

Mailing address / Adresse postale: 9450 River Road, Delta, BC V4G 1B5 — City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Vehicle / Véhicule	Registration No. / N° d'immatriculation	Prov.
Trailer - Rail car No. 1 / 1re remorque - wagon		
Trailer - Rail car No. 2 / 2e remorque - wagon		

Port of entry / Point d'entrée — International use only — Port of exit / Point de sortie — International use only

Carrier Certification : *I certify that I have received waste or recyclable material from the generator / consignor 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): DAVID SWETT — Tel. No. / N° de tél.: 867-874-5100

Year / Année: 10 — Month / Mois: 01 — Day / Jour: 14 — Signature:

C Receiver / consignee / Réceptionnaire / destinataire: NEWALTA CORP. — Registration No. / Provincial ID No. / N° d'immatriculation - d'id. provincial: RS8175

Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés

Receiver / consignee information same as in Part A. / Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A.
☑ Yes / Oui ☐ No, complete the box below / Non, remplir la case ci-dessous

Company name / Nom de l'entreprise

Mailing address / Adresse postale

City / Ville — Province — Postal code / Code postal

E-mail / Courrier électronique — Tel. No. / N° de tél. ( )

Receiving site address / Adresse du lieu de destination

Date received / Date de réception: Year / Année: 10 — Month / Mois: 11 — Day / Jour: 10 — Time / Heure: 12:25 ☐ A.M. ☑ 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

Prov. code / Code prov.	Shipping name / Appellation réglementaire	Class / Classe: Sub. class(es) / Classe(s) sub.	UN No. / N° NU	Packing / risk gr. / Gr. d'emballage / de risque	Quantity shipped / Quantité expédiée	Units / L or / ou Kg / Unités	Packaging / Contenant: No. / N°	Codes	Phys. state / État phys.	Quantity received / Quantité reçue	Units / L or / ou Kg / Unités	Comments / Commentaires	Handling Code / Code de manutention	Shipment / Envoi: Accepted / Accepté	Shipment / Envoi: Refused / Refusé	Decont.: Pack. Cont.	Decont.: Veh. Véh.
(i)	Empty cylinders	N/A	N/A	N/A	1500	KG	~~07~~ 12	07	S	1,500	KG		01	✓		N	N
(ii)																	
(iii)	"Snow White" calcium	N/A	N/A	N/A	150	L	01	01	L	150	L		01	✓		N	N
(iv)	Carbonate in water																

If handling code "Other" (specify) / Si code de manutention « autre » (spécifier)

Notice No. / N° de notification	Notice Line No. / N° de ligne de la notification	Shipment Envoi	Or / Ou	D or R code / Code D 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	National code in country of / Code du pays: Export / Exportation	National code in country of / Code du pays: Import / Importation	Customs code(s) / Code(s) de douanes
(i)											
(ii)	International use only										
(iii)											
(iv)											

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): DENNIS J. SHERRY

Signature: Dennis J. Sherry — Tel. No. / N° de tél.: 604 952-1220

Special handling / Manutention spéciale: ☐ Attached / Ci-joint ☐ As follows / Ci-contre:

24 Hour Emergency No.: 1-866-333-6376

Generator / consignor 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): GAVIN DOMITTER (ON BEHALF OF INAC) — Signature — Tel. No. / N° de tél.: (604) 314-1629

Date shipped / Date d'expédition: Year / Année: 10 — Month / Mois: 01 — Day / Jour: 24 — Time / Heure: 19:30 ☐ A.M. ☐ P.M. EST

Scheduled arrival date / Date d'arrivée prévue: Year / Année: 10 — Month / Mois: 11 — Day / Jour: 15

MOE 04-1917 (07/07)

Instructions for completion and distribution on reverse / Instructions pour compléter et distribuer au verso

Copy / Copie 3 (yellow / jaune)

(Page 9 of 10)

BRITISH COLUMBIA

Ministry of Environment

Manifest Supplement - Multiple Carriers

Form 5
Under the authority of the
Hazardous Waste Regulation
Schedule 5, Section 47.1

CONDITIONS: This form can only be used as an attachment to a HAZARDOUS WASTE MANIFEST under the following conditions:

(a) There is only one Consignor (Generator) and only one Consignee (Receiver) for the shipment described on the referenced manifest.
(b) There are no additions to or deletions of waste from the consignment after the shipment leaves the consignor's site.
(c) This form must be attached to the Reference Manifest and must be in the vehicle when the shipment is being transported.

BG411881-8

CONSIGNOR	Indian and Northern Affairs Canada (INAC)	REFERENCE MANIFEST NO	BG411886 + BG411885 BG411880-0 BG411824

Carrier Name	Carrier LT#	Vehicle Registration (Lic. Plate No.)	Province or State	Date Carried Start (YY/MM/DD)	Date Carried Finish (YY/MM/DD)	Shipping Locations From	Shipping Locations To	Carriers Signature
Northern Transportation Company Limited NA		N/A	BC	10/08/24	10/11/07	Robert Bay Nunavut, NU	8881 Rivard Delta, BC	
Alchemist Transport ~~Logistics Inc~~	410728	886778 R757-86	BC	10/11/10	10/11/10	8881 Rivard Delta BC	9-7483 Progressway Delta BC	

I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.

Consignor Contact Name (Please Print)	Signature	Telephone Number	FAX Number	Date (YY/MM/DD)
For INAC A Castelkain		604-770-7388	270-7389	10/11/10

INSTRUCTIONS: When the shipment has been completed the Consignee (Receiver):

- Attaches Copy A to Copy 3 of Manifest and mails to the appropriate authority in the jurisdiction where consignee is located.
- Attaches copies of Copy B to copies of Copy 4 of Manifest and returns to each Carrier.
- Attaches Copy C to Copy 5 of Manifest and retains for 2 years.
- Attaches Copy D to Copy 6 of Manifest and mails to Consignor.

SECTION 5

Disposal of Lead Painted Mill Equipment
Amix Salvage and Sales Ltd
12301 Musqueam Drive
Surrey BC V3M 1B2
Contact: Glenn Rempel (604)580-0251
Facility Licence No: N/A

AMIX
SALVAGE & SALES LTD.
12301 Musqueam Drive, Surrey, BC V3M-1B2

January 24, 2011

Mr. Gavin Domitter
Project Coordinator
Northern & Special Projects
Quantum Murray LP
100 - 3600 Viking Way
Richmond BC V6V 1N6

Dear Mr. Domitter:

Re: Amix Salvage and Sales Ltd. - Handling of Lead-based paint Mill Equipment

Further to your telephone and e-mail correspondence with Mr. Glenn Rempel on January 18th, 2011, this is to advise Amix Salvage and Sales Ltd. (Amix) processed the lead-based paint mill equipment in accordance with its Environmental Management Plan (EMP), and Health and Safety Policy. Specifically, the equipment was inspected for any residual oils and then cut into smaller pieces with our stationary shear. The cut-up mill equipment was then sent to an authorized steel manufacturer to be smelted.

If you require further information or clarification, please do not hesitate to contact Brian Ross, Amix's Environmental Coordinator and/or me.

Sincerely,

Nures Kara
Amix Salvage and Sales Ltd.

Cc: Glenn Rempel, Sales Manager, Amix Chilliwack Surplus Steel Sales Ltd.
Brian Ross, Environmental Coordinator, Amix Salvage and Sales Ltd.

AMIX Scale Ticket for Mill Equipment

SCALE PURCHASE TICKET

Amix Salvage & Sales Ltd.
12301 Musqueam Drive
Surrey, BC V3V 3T2
604-580-0251

Ticket: 192211 **Weigh In:** 11/15/2010 14:54
Customer: 18094 **Weigh Out:** 11/15/2010 15:32

QUANTUM MURRAY LP
JOB# S070198

VIA LANDMARK

Commodity	Gross (lb)	Tare (lb)	Net (lb)	Price ($/unit)	TOTAL ($)
S - Shear	67560	40420	27140	$20.000/tn	$271.40
				Ticket Sub-Total	$271.40
				HST	$32.57
				Ticket Total	**$303.97**

Buyer: WKRAMER

Please do not lose this ticket.
Ticket required for payment.

SCALE PURCHASE TICKET

Amix Salvage & Sales Ltd.
12301 Musqueam Drive
Surrey, BC V3V 3T2
604-580-0251

Ticket: 192056 **Weigh In:** 11/15/2010 11:03
Customer: 18094 **Weigh Out:** 11/15/2010 11:16

QUANTUM MURRAY LP
JOB# S070198

VIA AMIX
T22 TB50

Commodity	Gross (lb)	Tare (lb)	Net (lb)	Price ($/unit)	TOTAL ($)
Trkd - O/S Torch	80120	45580	34540	$20.000/tn	$345.40
				Ticket Sub-Total	$345.40
				HST	$41.45
				Ticket Total	**$386.85**

Buyer: WKRAMER

Please do not lose this ticket.
Ticket required for payment.

AMIX
SALVAGE & SALES LTD.
12301 Musqueam Drive, Surrey, BC V3M-1B2

July 21, 2010

Mr. Gavin Domitter
Project Coordinator
Northern & Special Projects
Quantum Murray LP
100 - 3600 Viking Way
Richmond BC V6V 1N6

Dear Mr. Domitter:

Re: Amix Salvage and Sales Ltd. - Handling of Lead-based paint Mill Equipment

Further to your telephone and e-mail correspondence with Mr. Glenn Rempel, this is to advise Amix Salvage and Sales Ltd. (Amix) will process the lead-based paint mill equipment in accordance with its Environmental Management Plan (EMP), and Health and Safety Policy.

If you require further information or clarification, please do not hesitate to contact Brian Ross, Amix's Environmental Coordinator and/or me.

Sincerely,

Nures Kara
Amix Salvage and Sales Ltd.

Cc: Glenn Rempel, Sales Manager, Amix Chilliwack Surplus Steel Sales Ltd.
Brian Ross, Environmental Coordinator, Amix Salvage and Sales Ltd.

SALVAGE DISCLAIMER & INDEMNITY

Salvage Items from Roberts Bay Site Remediation

SALVAGE DISCLAIMER & INDEMNITY

It is understood and agreed that Her Majesty The Queen in Right of Canada ("Her Majesty" or "Her") does not make any representation and does not assume any liability as to the condition and safety of the articles listed herein below ("articles"), salvaged from the Roberts Bay Site Remediation , project R.014468.008, contract EW699-060029/001/NCS by Quantum Murray LP (hereinafter "the salvager"). Her majesty does not guarantee quality, performance or dependability of the articles listed in this document. It shall be the responsibility of the salvager to ensure proper packing and certification of the goods prior to use and to assume all risks of salvage and operation. The salvager agrees to accept full responsibility for any injury, death or other loss that may be occasioned by, arise from or be in any manner related to or derived from the salvage, transport, use and disposal of the articles,. The salvager agrees that it assumes ownership, title; risk of loss and all other incidents of ownership related to said articles upon removal and herein undertakes to salvage, transport, use and dispose of said articles in accordance with all applicable laws. The salvager does hereby, for itself, it's employees, servants, agents and representatives, remise release and forever discharge her majesty, and Her past and present officers including the Attorney General of Canada ("the Attorney General"), servants, employees and agents, and all other persons and entities and Her and their respective heirs, executors, administrators, successors and assigns, from all actions, proceedings, claims, demands, losses, costs, damages and expenses relating to any damage or loss to personal property or any bodily injury or death

in any manner arising from the salvage, transport, use and disposal of the articles. The salvager hereby covenants and agrees that it shall at all times indemnify and save harmless her majesty and Her past and present officers including the Attorney General of Canada ("the Attorney General"), servants, employees and agents, and all other persons and entities and Her and their respective heirs, executors, administrators, successors and assigns from and against any and all suits, actions, causes of actions, damages, costs or expenses or any claim and demand of any nature whatsoever which might be brought or claimed against her majesty and Her past and present officers including the Attorney General of Canada ("the Attorney General"), servants, employees and agents, and all other persons and entities and Her and their respective heirs, executors, administrators, successors and assigns , in respect of any injury, death, loss or damage which might be suffered or incurred or alleged to be suffered or incurred as a result of the salvage, transport, use and disposal of the articles.

List of Articles

Item	Description/Identification (i.e. Serial Number)	Picture Appended (Y/N)
Lead Painted Mill Equipment	See Picture	Y

This Salvage Disclaimer and Indemnity shall be construed in accordance with the rights and liabilities of the parties hereto according to laws for the time being in force in the Territory of Nunavut, Canada, save for those which are inconsistent with the federal laws of Canada, in which event the federal laws of Canada shall prevail.

For the Salvager

Quantum Murray LP states that it has carefully read the foregoing Salvage Disclaimer and Indemnity and is aware of the contents therein, and it signs, seals and delivers the same as its own free act.

IN WITNESS WHEREOF QUANTUM MURRAY LP has hereunto affixed its corporate seal at the City of RICHMOND Province of BC under the hands of its proper officers in that behalf fully authorized this 18 day of AUGUST 2010

SIGNED, SEALED AND DELIVERED)
QUANTUM MURRAY LP)
100 - 3600 VIKING-WAY)
RICHMOND, BC V6V 1N6)
(company name and address)

in the presence of:)
Name: WILF MARCQ)
_____)
Title: V.P. FINANCE
Witness)
Signature: _____)
)

I/we have the authority to bind the Corporation.

FOR HER MAJESTY THE QUEEN:

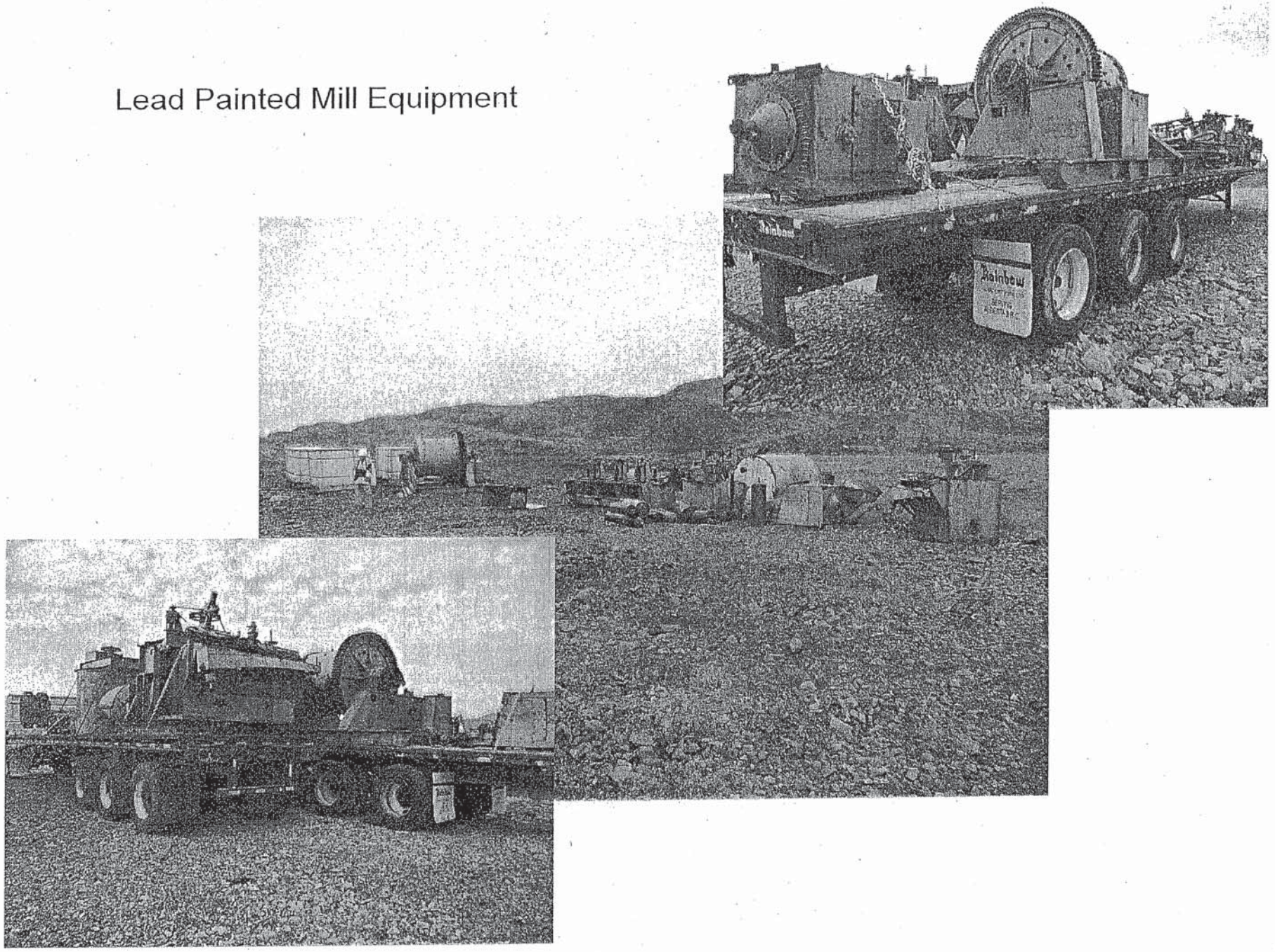
SIGNED, SEALED AND DELIVERED
in the presence of:
Her Majesty the Queen in right of Canada
Name: _____
_____)

Title: _____)

Witness : _____)

I/we have the authority to bind Canada.

Lead Painted Mill Equipment



QMLP Photo Log

SENES

Roberts and Ida Bay Site Remediation Photos

Site Panorama Shots

December 2010

Mill & Assay Building, Hopper and Tailings Pond from North - Before

Mill & Assay Building, Hopper and Tailings Pond from North - After

Site from West Ridge - Before

Site from West Ridge - After

Site from East Hill - Before

Site from East Hill - After

Roberts and Ida Bay Site Remediation Photos

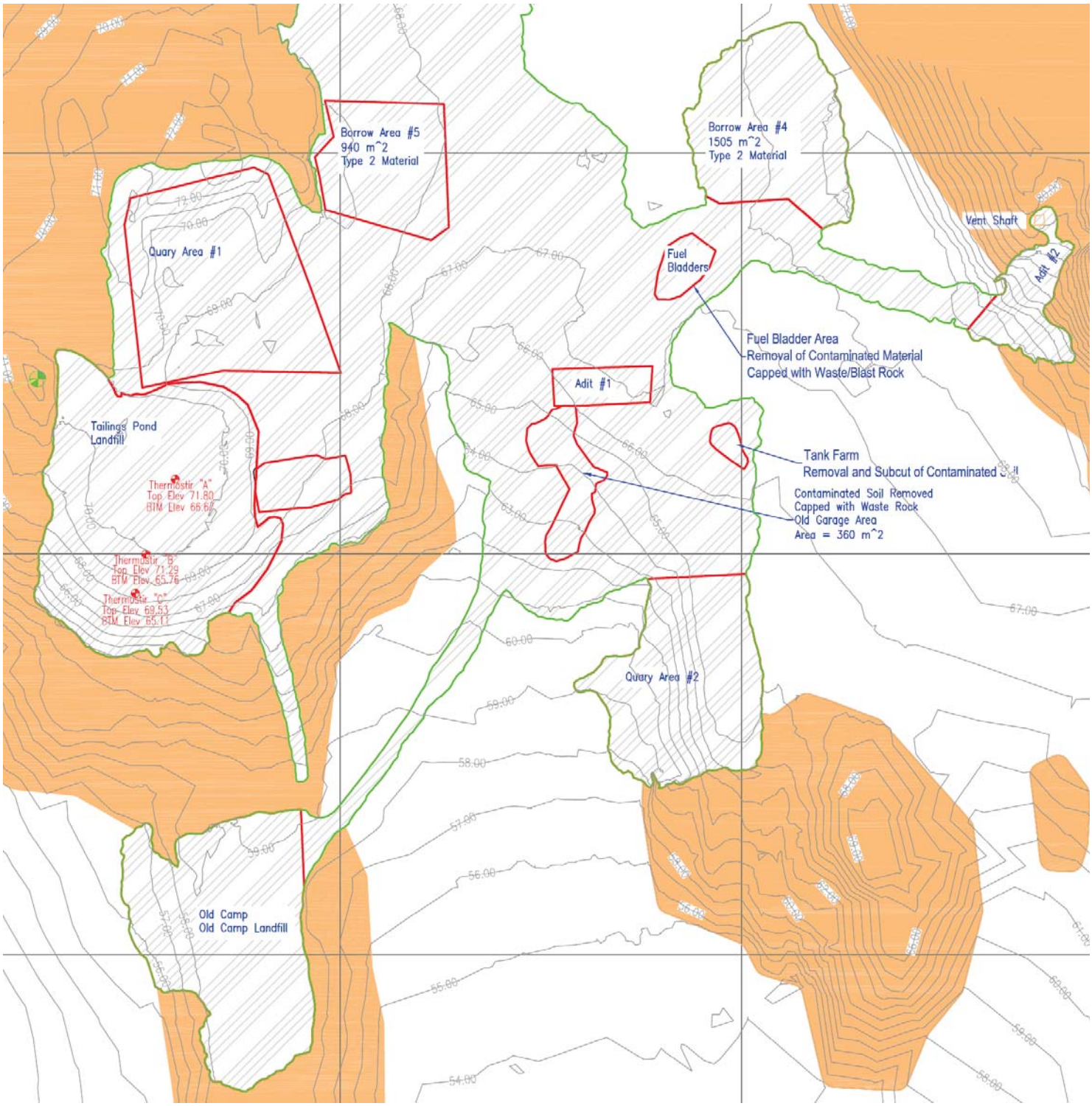
Roberts Bay

Item	Page
Dismantling Infrastructure	3
Mill and Assay Building	4
Garage	8
Adit cover	8
Tailings Pond	13
Non-hazardous waste	20
Existing landfill containing domestic waste	23
Hazardous wastes	27
PHC impacted soil	30
Garage area	31
Extended garage area	32
Metal contaminated oil (40cu.m) co-contaminated	33
Fuel bladder area	34
Mine openings	36
Adit 1	37
Adit 2	38
Vent Raise	38
Milling Equipment	39
Camp	42
Aerial	48

Ida Bay

Item	Page
Non-hazardous and hazardous waste	53
Exploration trench – infill	58
Mine openings	55
Adit	56
Vent raise	57
Exploration trench – infill	58
Steel pipes to grade	59
Waste rock backfilling	61
Waste rock from low tide line	65
Final grading	70
Aerial	77

Roberts Bay


Borrow Area #5
940 m^2
Type 2 Material
Borrow Area #4
1505 m^2
Type 2 Material
Quary Area #1
Fuel Bladders
Vent. Shaft
Adit #2
Fuel Bladder Area
Removal of Contaminated Material
Capped with Waste/Blast Rock
Adit #1
Tailings Pond
Landfill
Thermostir "A"
Top Elev 71.80
BTM Elev 66.61
Tank Farm
Removal and Subcut of Contaminated Soil
Contaminated Soil Removed
Capped with Waste Rock
Old Garage Area
Area = 360 m^2
Thermostir "B"
Top Elev 71.29
BTM Elev 65.76
Thermostir "C"
Top Elev 69.53
BTM Elev 65.11
Quary Area #2
Old Camp
Old Camp Landfill

Roberts Bay
Dismantling Infrastructure

Mill and Assay Building

Garage

Adit Cover

Mill and Assay Building from Northeast Corner - Before

Mill and Assay Building from Northeast Corner - After

Mill & Assay Building and Headframe from Northwest - Before

Mill & Assay Building and Headframe from Northwest - After

Mill & Assay Building , Headframe and Hopper (foreground) from North - Before

Mill & Assay Building , Headframe and Hopper (foreground) from North - After

Hopper (foreground) Mill & Assay Building and Tailings Pond from North - Before

Hopper (foreground) Mill & Assay Building and Tailings Pond from North - After

Mill & Assay Building (background), Garage and Adit from Northeast - Before

Mill & Assay Building (background), Garage and Adit from Northeast - After

Adit 1 and Garage (background) and Fuel Bladder from North - Before

Adit 1 and Garage (background) and Fuel Bladder from North - After

Garage and Adit Cover from East - Before

Garage and Adit Cover from East - After

Garage from South - Before

Garage from South - After

Adit 1 from Northeast - Before

Adit 1 from Northeast - After

Roberts Bay Tailings Pond

Tailings Pond from East - Before

Tailings Pond from East - After

Tailings Pond from Northeast - Before

Tailings Pond from Northeast - After

Tailings Pond from Northeast - Before

Tailings Pond from Northeast - After

Tailings Pond from Southwest - Before

Tailings Pond from Southwest - After

Hopper from South - Before

Hopper from South - After

Tailings Pond and Mill & Assay Building Aerial from Southwest - Before

Tailings Pond and Mill & Assay Building Aerial from Southwest - After

Roberts Bay
Non – Hazardous Waste

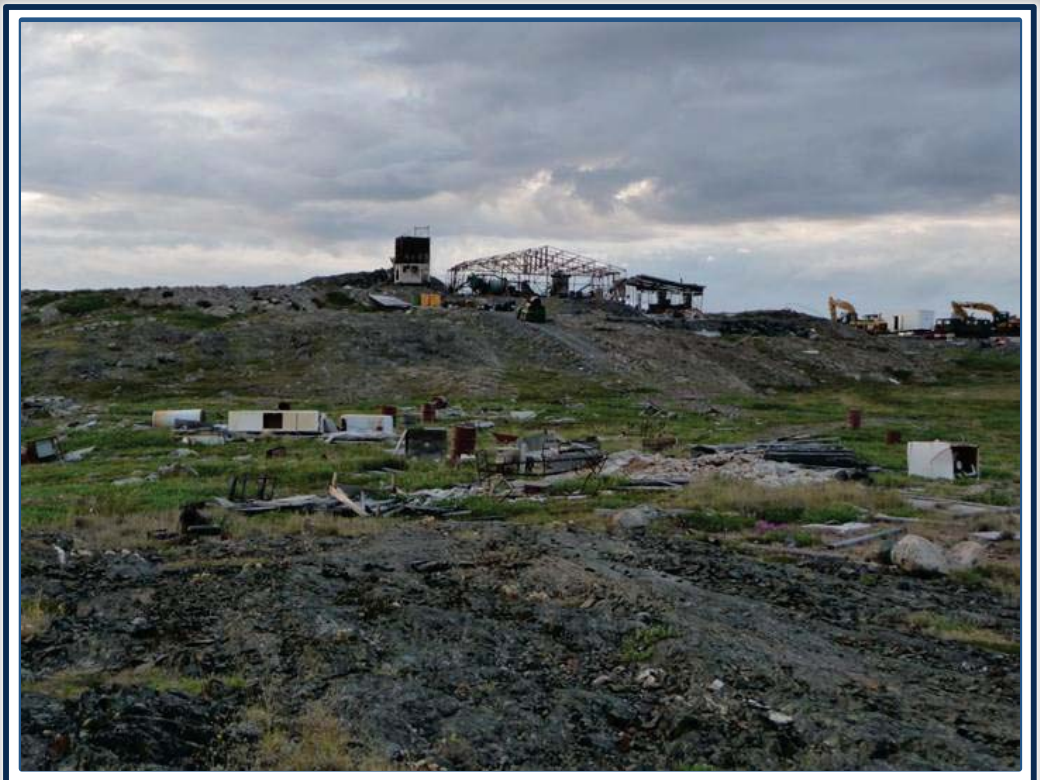
Debris Pile from West - Before

Debris Pile from West - After

Various Site Debris from North - Before

Various Site Debris from North - After

Roberts Bay
Existing Landfill



Existing Camp Landfill (foreground) from South Before

Existing Camp Landfill (foreground) from South After

Existing Camp Landfill from North - Before

Existing Camp Landfill from North - After

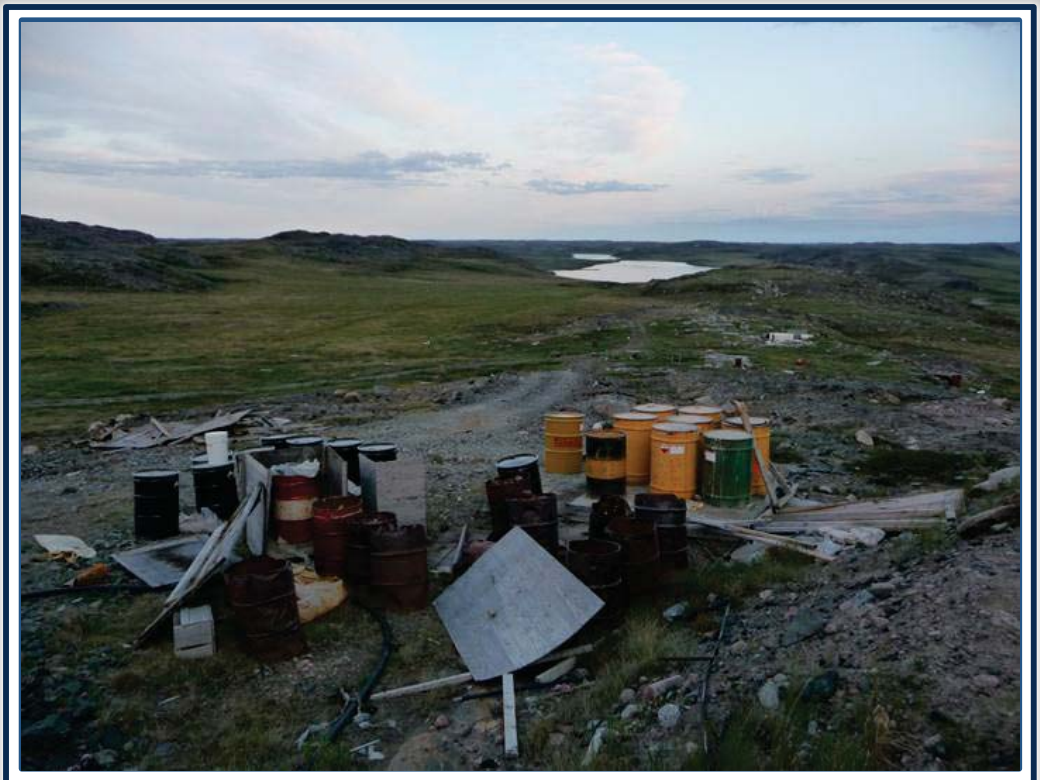
Existing Camp Landfill (background) from Northeast - Before

Existing Camp Landfill (background) from Northeast - After

Roberts Bay
Hazardous Wastes

Various Hazardous Waste Before

Various Hazardous Waste Before



Various Hazardous Waste from North - Before

Various Hazardous Waste from North - After

Roberts Bay
PHC Impacted Soil

Garage Area

Extended Garage Area

Garage and Adit Cover from East - Before

Garage and Adit Cover from East - After

Extended Garage Area from West - Before

Extended Garage Area from West - After

Roberts Bay
Metal Contaminated Soil

Fuel Bladder Area

Fuel Bladder Area from East - Before

Fuel Bladder Area from East - After

Fuel Bladder Area from East - Before

Fuel Bladder Area from East - After

Roberts Bay
Mine Openings

Adit 1

Adit 2

Adit 1 from West - Before

Adit 1 from West - After

Adit 2 from North - Before

Adit 2 from North – After

Roberts Bay
Milling Equipment

Milling Equipment in Mill Building from Northwest - Before

Mill Equipment Marshalled

Mill Equipment Loaded

Milling Equipment in Mill Building from Northwest - After

Robert Bay Camp

Camp and Site from East - Before

Camp and Site from East - After

Camp Area from Southwest - Before

Camp Area from Southwest - After

Camp Area from Southwest - Before

Camp Area from Southwest - After

Camp Laydown Area from South - After

Camp Laydown Area from North - After

Camp Laydown Area from West - After

Camp Laydown Area from Southwest - After

Roberts Bay
Aerial

Site Aerial from Southwest - Before

Site Aerial from Southwest - After

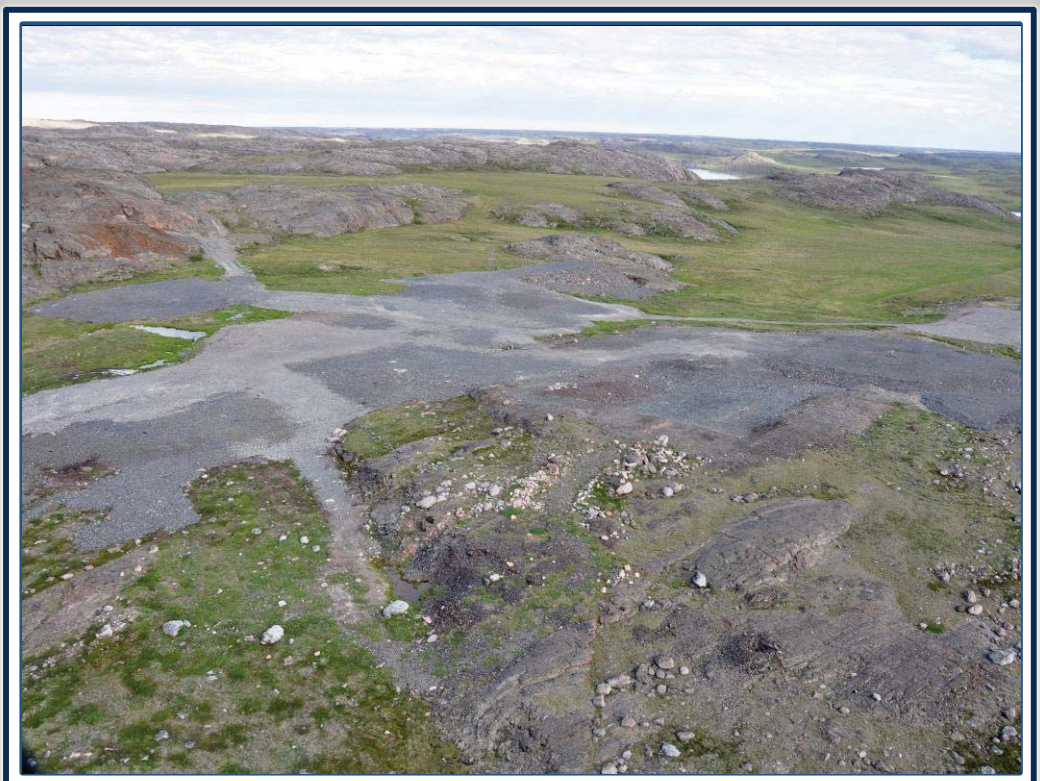
Site Aerial from West - During

Site Aerial from West - After

Site Aerial from Southeast - Before

Site Aerial from Southeast - After

Site Aerial from North - After



Site Aerial from Northwest - After

Ida Bay
Non - Hazardous and Hazardous Waste

Debris Area from North - Before

Debris Area from North - After

Ida Bay
Mine Openings

Adit

Vent Raise

Exploration Trenches

Adit from East - Before

Adit from East - After

Vent Raise from East - Before

Vent Raise from East - After

Exploration Trenches from East - Before

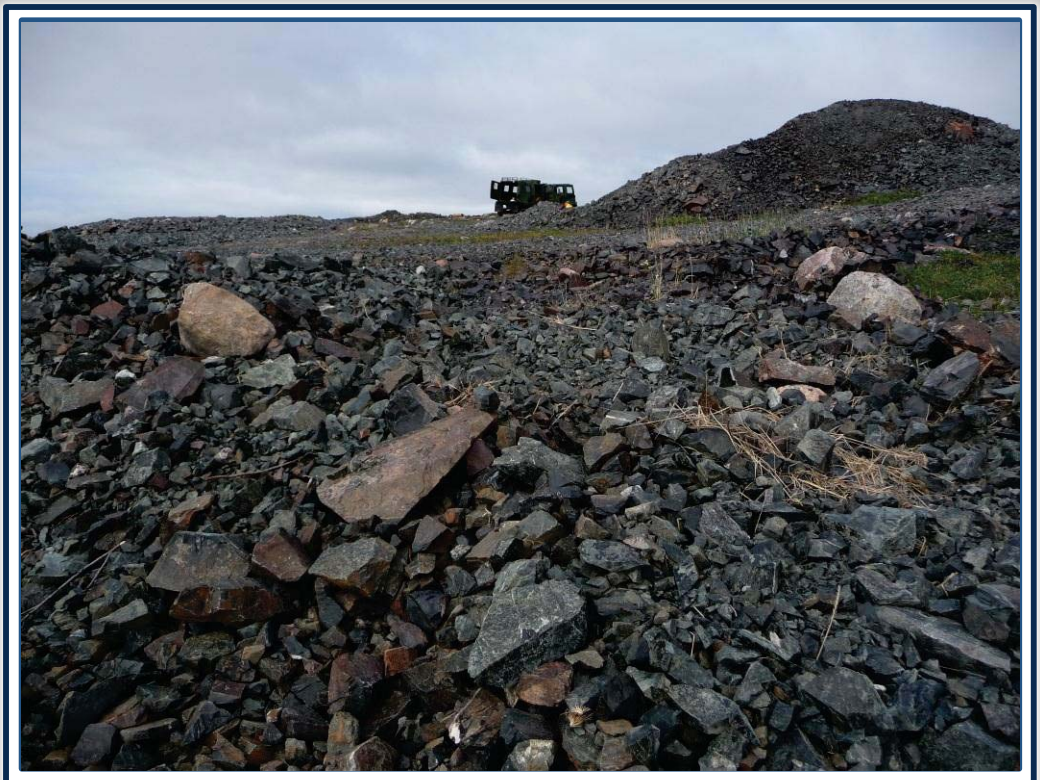
Exploration Trenches from East - After

Ida Bay
Steel Pipes Cut to Grade

Steel Pipes from Northeast - Before

Steel Pipes Before from Northeast - After

Wasterock Backfilling



Wasterock Pile from Southeast - Before

Wasterock Pile from Southeast - After

Waste Rock Pile from East - Before

Waste Rock Pile from East - After

Waste Rock Pile from Northeast - Before

Waste Rock Pile from Northeast - After

Ida Bay
Waste rock from Low Tide Line

Waste Rock from Low Tide Line from East - Before

Waste Rock from Low Tide Line from East - After

Waste Rock from Low Tide Line from East Higher Elevation - Before

Waste Rock from Low Tide Line from East Higher Elevation - After

Waste Rock from Low Tide Line from West - Before

Waste Rock from Low Tide Line from West - After

Ida Bay
Final Regrading

Rutting from Barge Offload from North - Before

Rutting from Barge Offload from North - After

Ruts Filled with Wasterock from East - After

Ruts Filled with Wasterock and Soil Graded from Southwest - After

Site from North - After

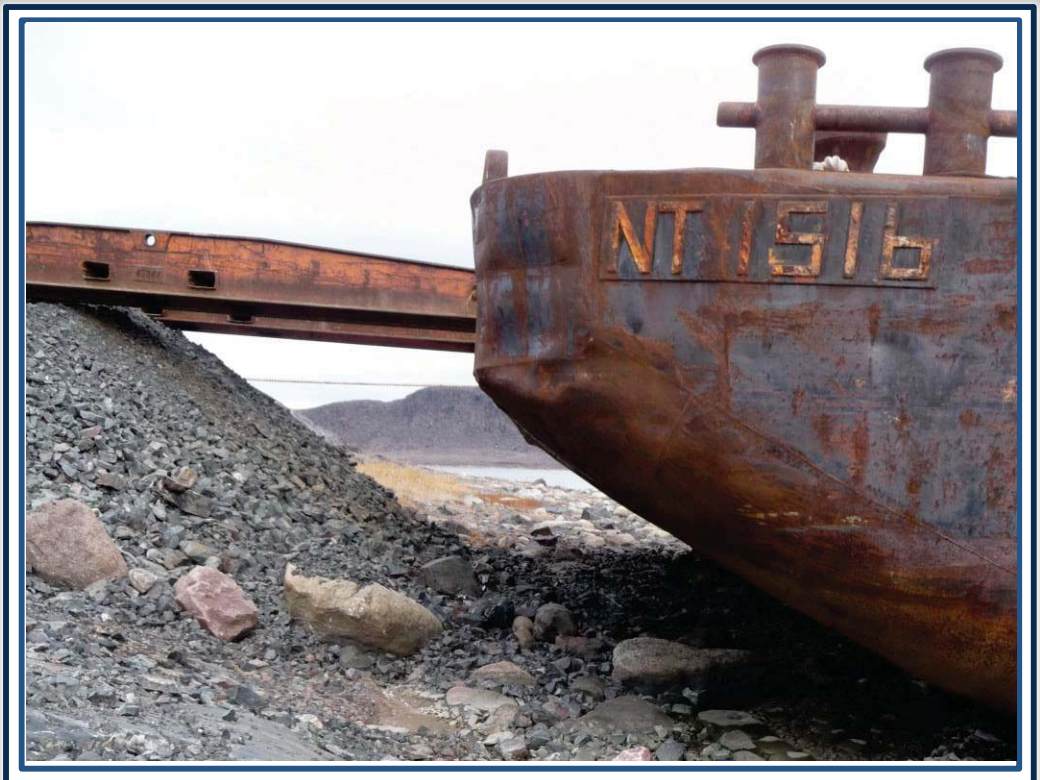
Wasterock Graded to Slope from Northeast - After

Wasterock Feathered Out to Match Topography from Southeast - After

Wasterock Feathered Out to Match Topography from Northwest - After

Site from Northwest - After

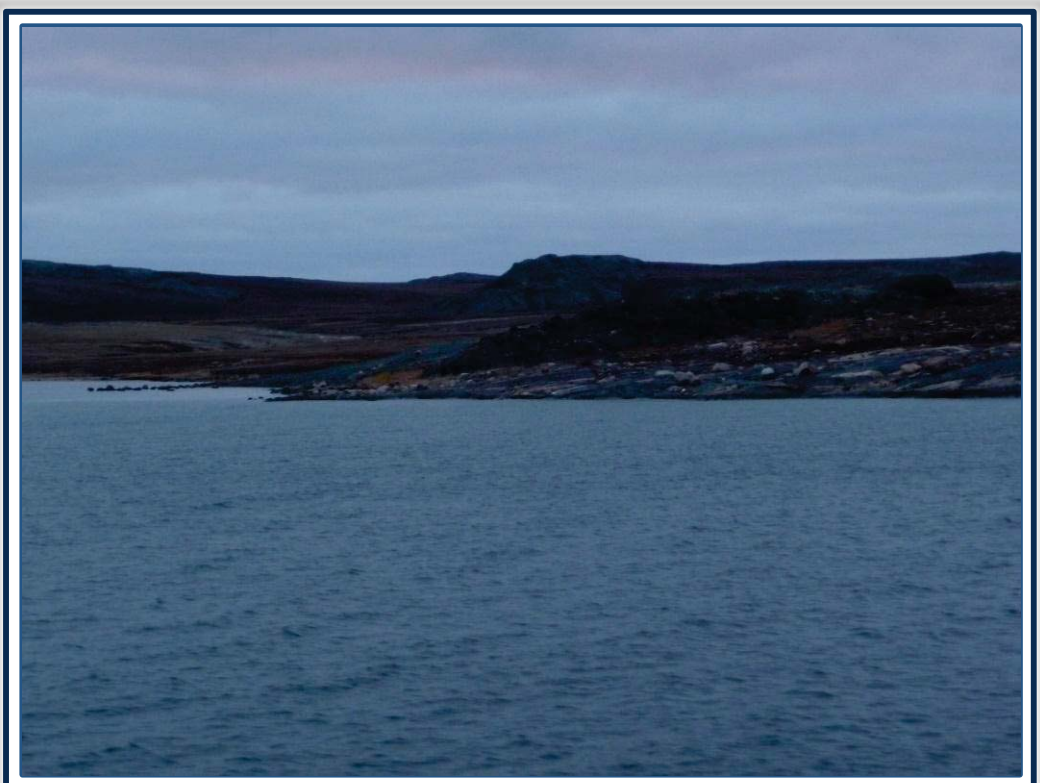
Wasterock Regraded from North - After



Barge Loading Area and Waste Rock Ramp Before from West - Before

Barge Loading Area and Waste Rock Ramp Before from West - After

Departing Site from Southeast - After



Departing Site from Southeast - After

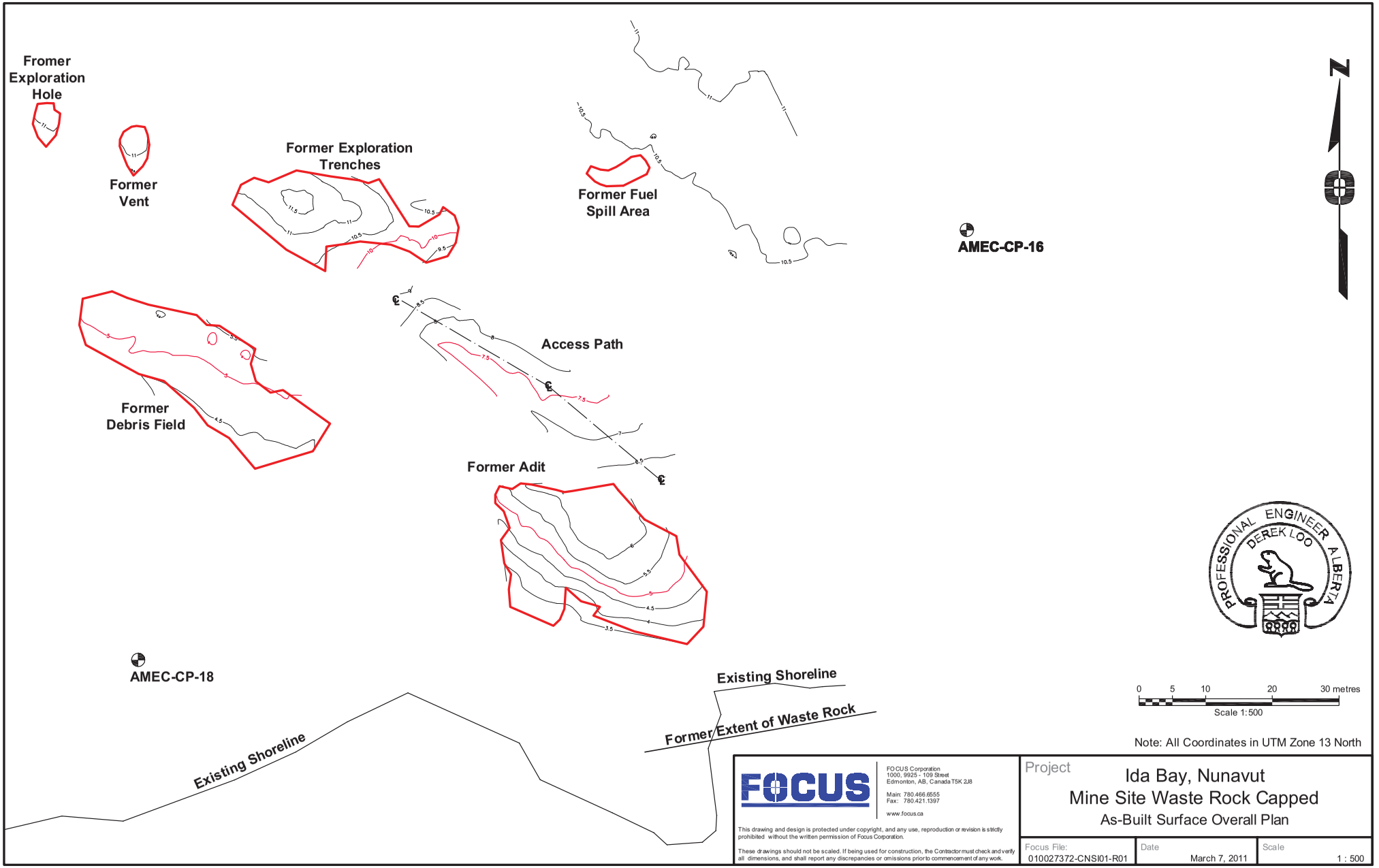
Ida Bay
Aerials

Aerial Prior to First Barge Load from South

Aerial Prior to First Barge Load from West

QMLP As-Builts

SENES



PROFESSIONAL ENGINEER ALBERTA DEREK LOO

Note: All Coordinates in UTM Zone 13 North

FOCUS Corporation
1000, 9925 - 109 Street
Edmonton, AB, Canada T5K 2J8
Main: 780.466.6555
Fax: 780.421.1397
www.focus.ca

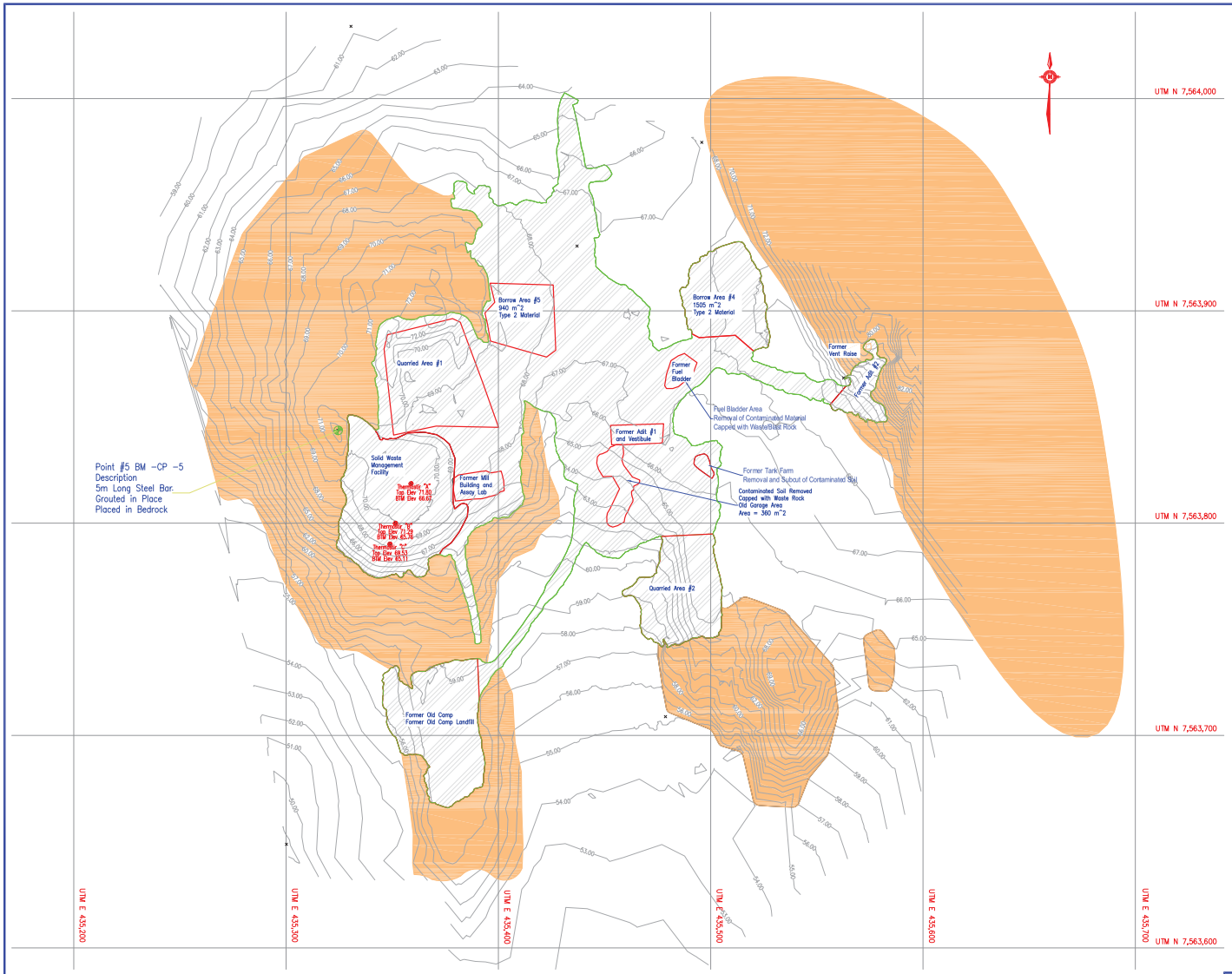
This drawing and design is protected under copyright, and any use, reproduction or revision is strictly prohibited without the written permission of Focus Corporation.

These drawings should not be scaled. If being used for construction, the Contractor must check and verify all dimensions, and shall report any discrepancies or omissions prior to commencement of any work.

Project

Ida Bay, Nunavut
Mine Site Waste Rock Capped
As-Built Surface Overall Plan

Focus File:	Date	Scale
010027372-CNSI01-R01	March 7, 2011	1 : 500



All Coordinates in UTM Zone 13 North

Point Table

Point #	Description	Northing	Easting	Elevation
610	1 THERMOSTIR "A" BOTTOM ELEV.	7563818.62	435358.86	66.67
614	1 THERMOSTIR "A" TOP CAP	7563818.62	435358.86	71.80
605	1 THERMOSTIR "B" BOTTOM ELEV.	7563799.96	435351.49	65.76
609	1 THERMOSTIR "B" TOP CAP	7563799.96	435351.49	71.28
600	1 THERMOSTIR "C" BOTTOM ELEV.	7563790.15	435348.91	65.11
604	1 THERMOSTIR "C" TOP CAP	7563790.15	435348.91	69.53
5	5 BM -CP 5	7563843.77	435324.38	72.57
16	AMEC-CP-16	7569722.14	436874.43	10.24
17	AMEC-CP-17	7569712.73	436944.80	4.91
18	AMEC-CP-18	7569657.61	436750.05	3.69
11	AMEC -CP-11	7563708.88	435478.70	55.21
12	AMEC -CP-12	7563648.78	435300.18	48.72
13	AMEC -CP-13	7564034.01	435330.58	60.78
14	AMEC -CP-14	7563979.37	435495.80	67.38
6	FDIB	7563868.35	435562.57	72.07
28	FDIB -471I	7562588.56	434570.89	7.32
20	FDIB -57L1	7566889.27	435076.34	100.76
21	FDIB -CLS	7564208.92	434369.38	8.24
22	FDIB -CLS	7564322.30	434867.73	61.91
23	FDIB -CLS	7564335.21	435331.29	62.52
24	FDIB -CLS	7564330.65	435786.48	80.18
25	FDIB -CLS	7563819.40	434474.95	16.33
26	FDIB -CLS	7563288.31	434477.66	63.76
27	FDIB -CLS	7562936.21	434461.31	7.03
2	PLSPK -GPS CHECK POINT	7563930.52	435437.05	67.68

Bedrock Outcrop

Waste / Blast Rock Capping

Total Area Capped
with Waste / Blast Rock
27564 m^2

Thermostir Locations and Elevations

PROFESSIONAL ENGINEER ALBERTA DEREK LOO

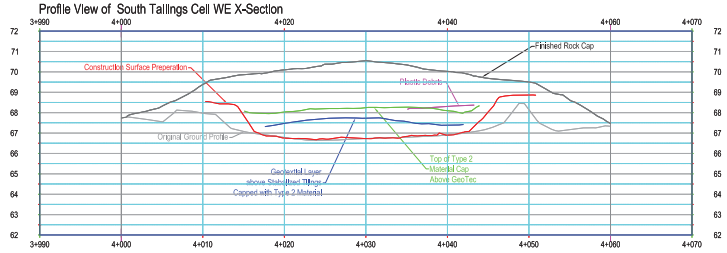
FOCUS

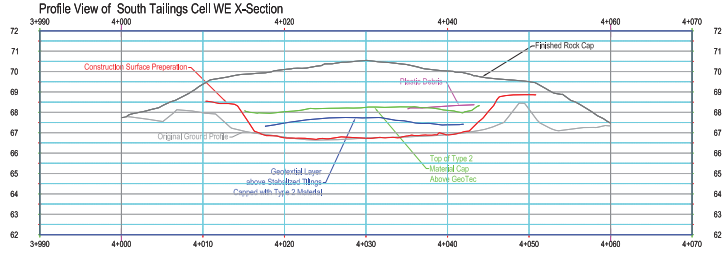
This drawing and design is protected under copyright, and any use, reproduction or revision is strictly prohibited without the written permission of Focus Corporation.
These drawings should not be scaled. Finding used for construction, the Contractor must check and verify all dimensions, and shall report any discrepancies or omissions prior to commencement of any work.

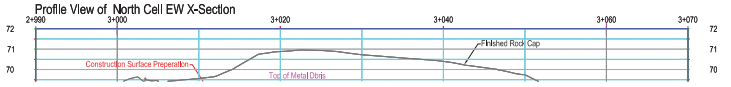
Project

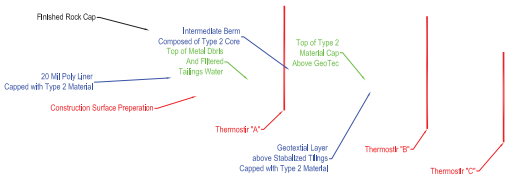
Roberts Bay, Nunavut
Mine Site Waste Rock Capped
As-Built Surface Overall Plan

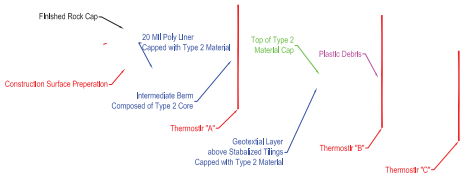
Project No.	Date	Scale
010019242	2011-Mar-07	1 : 1000

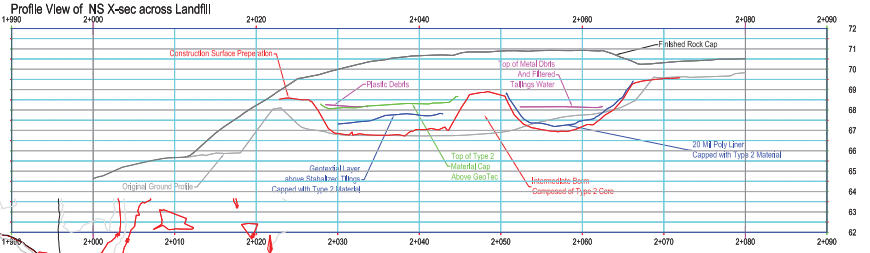


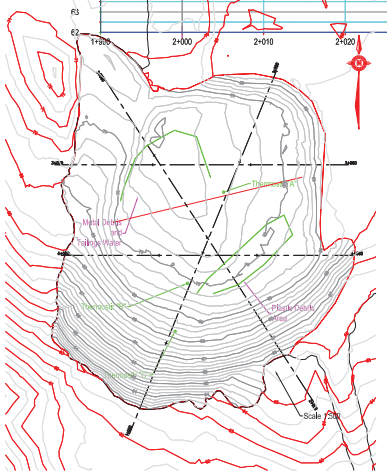












UTM Zone 13 North

FOCUS

FOCUS Corporation
1000, 5929 70 Ave
Edmonton, AB, Canada T6K 3J6

Phone 780.466.2555
Fax 780.431.1597

www.focus.ca

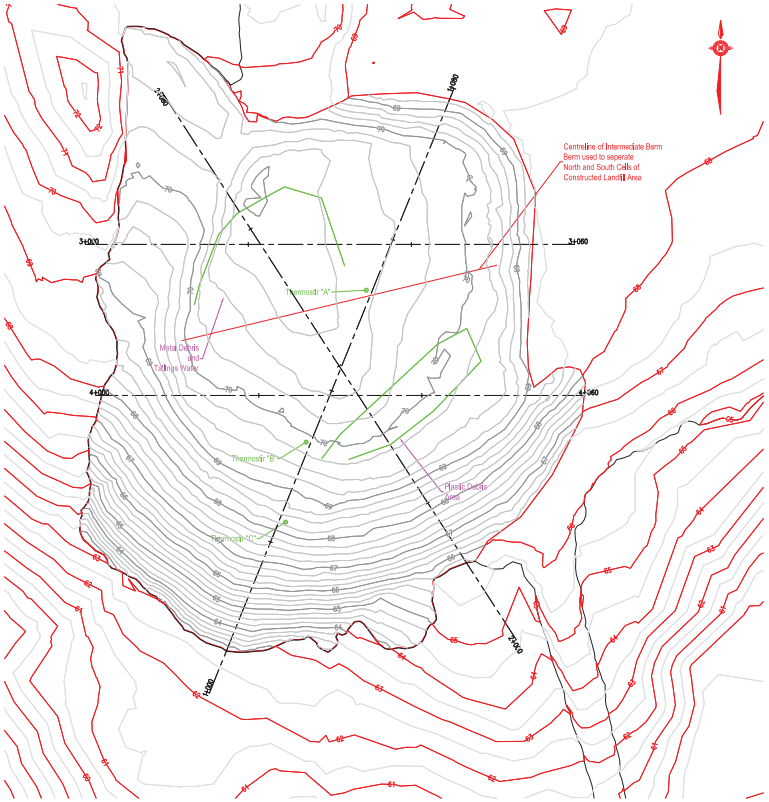
This drawing and design is protected under copyright, and any use, reproduction or revision is strictly prohibited without the written permission of Focus Corporation.

These drawings should not be scaled. If being used for construction, the Contractor must check and verify all dimensions, and shall report any discrepancies or omissions prior to commencement of any work.

Project

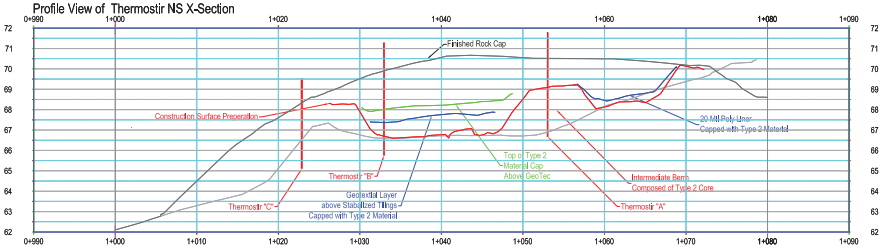
Roberts Bay, Nunavut
Land Fill As-built
X-Sections for Landfill

Project No.	Date	Scale
010019242	2009-09-17	H 1:300 V 2.5X Exageration

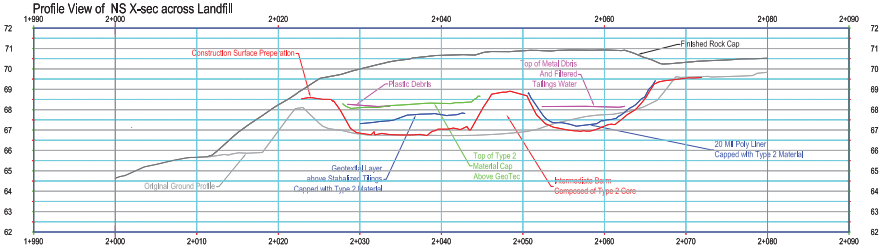


All Coordiantes in UTM Zone 13 North

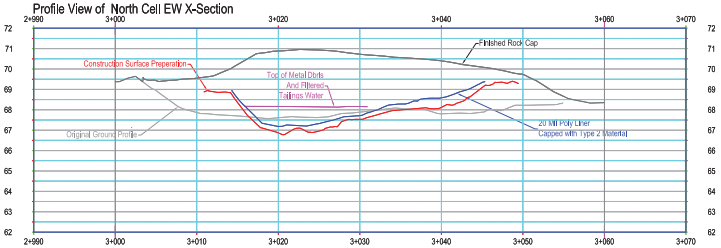
Profile View of Thermostr NS X-Section



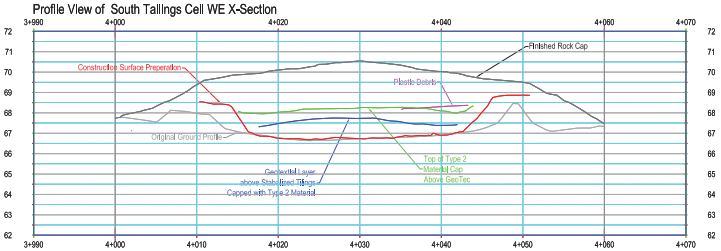
Profile View of NS X-sec across Landfill



Profile View of North Cell EW X-Section



Profile View of South Tailings Cell WE X-Section



FOCUS

FOCUS Corporation
1000, 9909 - 101 Street
Edmonton, AB, Canada T5K 2J8
Main: 780.466.2555
Fax: 780.421.1397
www.focus.ca

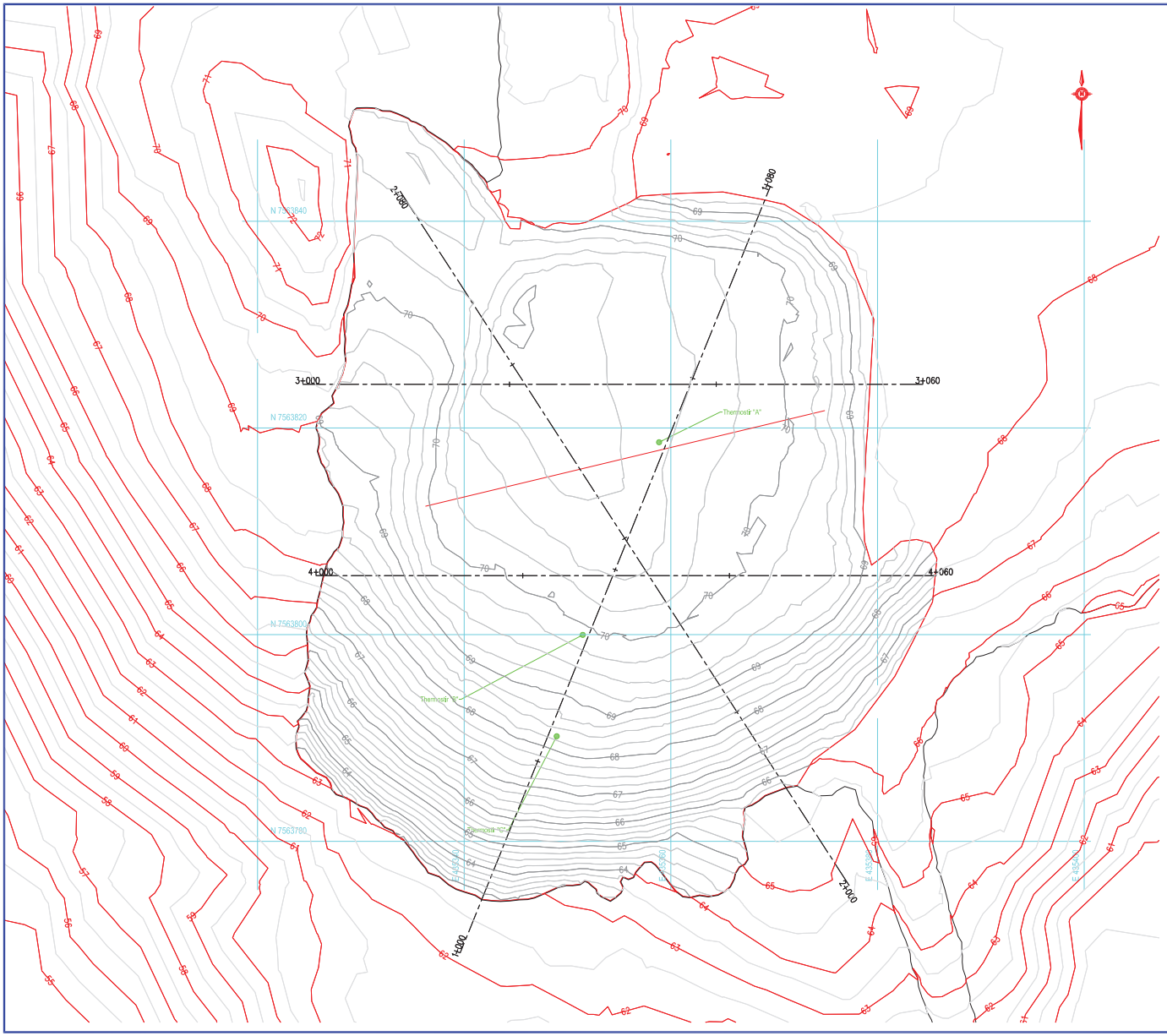
This drawing and design is protected under copyright, and any use, reproduction or revision is strictly prohibited without the written permission of Focus Corporation.
These drawings should not be scaled. If being used for construction, the Contractor must check and verify all dimensions, and shall report any discrepancies or omissions prior to commencement of any work.

Project

Roberts Bay, Nunavut
Land Fill As-built
X-Sections for Landfill

Project No.	Date	Scale
010019242	2009-09-17	H 1:300 V 2.5X Exageration

All Plans and Coordinates Based on UTM Zone 13 North



FOCUS

FOCUS Corporation
#300, 9509 156 Street
Edmonton, AB, Canada T5K 2J8

Main 780.486.2555
Fax 780.451.1597

www.focus.ca

This drawing and design is protected under copyright, and any use, reproduction or revision is strictly prohibited without the written permission of Focus Corporation.

These drawings should not be scaled. If being used for construction, the Contractor must check and verify all dimensions, and shall report any discrepancies or omissions prior to commencement of any work.

Project

Roberts Bay, Nunavut
Land Fill As-built
LandFill Tallings Pond Area Overall

Project No.	Date	Scale
010019242	2009-09-17	1 : 200

Hazardous Material and Debris Inventory

SENES

Roberts/Ida Bay Contaminated Soil, Hazardous Material and Debris Inventory

For Transport 2010	Seacans	Supersacks
Contaminated Soil	179	9
Haz Waste	11	
Misc Non-Haz Debris	1	
Totals for Transport	**191**	**9**

Debris

Hazardous Waste

	1	2
1	1	7
2	2	8
3	3	9
4	4	10
5	5	11
6	6	

Contaminated Soil

	1	2	3	4	5	6	7	8	9	10	11	12	13	
	TF	TF	TF	TF	TF	TF	TF	TF	G	G	G2	G2	G	1
	TF	TF	TF	TF	TF	TF	TF	TF	G	G2	G2	G2	G	2
	TF	TF	TF	TF	TF	TF	TF	TF	G	G2	G2	G2	G	3
	TF	TF	TF	TF	TF	TF	TF	TF	G	G2	G2	G2	G	4
	G	G	TF	TF	TF	TF	TF	G	G	G2	G2	G2	G	5
	Mill	Mill	Mill	Mill	Mill	Mill	Mill	G	Mill	G2	G2	G2	G	6
	Mill	Mill	Mill	Mill	Mill	Mill	Mill	G	G	G2	G2	G2	G	7
	Storage	Storage	Storage	Mill	G	G	G	G	G	G2	G2	G2	G2	8
	Storage	Storage	Mill	Mill	Storage	Mill	G	G	G	G2	G2	G2	FS	9
	Storage	Storage	Storage	Storage	G	Storage	Storage	G	G	G2	G2	G2	FS	10
	Storage	Storage	Storage	Storage	G	Storage	G	G	G2	G2	G2	G2	FS	11
	G	G	G	G	Storage	Storage	Storage	G	G2	G2	G2	G2		12
	G	G	G	G	G	G	G	G	G2	G2	G2	G2		13
	TF	TF	Storage	Storage	G	G	G	G	G2	G2	G2	G2		14
						G2	G2	G2	G2	G2	FS	FS	FS	FS

Label	Description	Crates	Supersacs	Estimate Volume (m^3)	
#	Hazardous Waste Materials	11		n/a	Hazardous Materials. See Quantum Inventory of Materials Cross Referenced to Crate Nos.
Mill	Mill and Assay Area	19		38	PHC and Metals Impacted Soil.
TF	Tank Farm/ Fuel Bladder Area	39		78	PHC Impacted Soil.
Storage	Storage/ Explosive Shed Area	22		44	PHC Impacted Soil.
G	Garage Area	50		100	PHC Impacted Soil.
G2	Extended Garage Area	46	5	97	PHC Impacted Soil.
FS	Ida Bay Fuel Spill	3	4	10	PHC Impacted Soil.
	Non-haz debris	1			
	TOTAL	191	9	367	

Notes: *Estimate volume is bulk volume and not in-situ.*

2 supersacks were combined in one G2 crate in July 2010 (Supersack and Seacan quantities adjusted)

6 crates were labelled as G versus G2. Totals and schematic revised.

Hazardous Waste Inventory Summary by Crate - Roberts and Ida Bay

NTCL Booking Reference 6SQ01493

Pick-up Location: Ida Bay

Destination: Delta BC

Load Date: August 24, 2010

For more information please contact Gavin Domitter (Quantum Murray) at (604)314-4629 or gdomitter@qmlp.ca

Movement Document Manifests

BG41180-0 **BG41181-8**

BG41182-6 **BG41185-9**

BG41186-7

Crate #	Drum #	Contents	Qty	Est	UN	Class	PG	Comments
1	n/a	Asbestos Bags	3	200kg	2590	9	III	
1	n/a	Empty cylinders	12	1500kg	N/R	N/R	N/R	
2	12	Xanthates	1	200kg	342	4.2	II	
2	8	Glycol	1	200L	N/R	N/R	N/R	
2	n/a	Waste Oil Filters	1	150kg	N/R	N/R	N/R	
3	1	Corrosive liquids N.O.S.	1	52L	1760	8	II	
3	2	Corrosive liquids N.O.S.	1	40L	1760	8	II	
3	6	Articles containing polychlorinated biphenyls	1	95kg	2315	9	II	
3	17	Articles containing polychlorinated biphenyls	1	50kg	2315	9	II	
4	5	Batteries wet, filled with acid, electric storage	1	200kg	2794	8	III	
4	14	Batteries wet, filled with acid, electric storage	1	200kg	2794	8	III	
4	15	Batteries wet, filled with acid, electric storage	1	150kg	2794	8	III	
4	16	Batteries wet, filled with acid, electric storage	1	150kg	2794	8	III	
5	3	Corrosive liquids N.O.S.	1	6L	1760	8	II	
5	10	Xanthates	1	100kg	342	4.2	II	
5	13	Toxic Solids N.O.S.	1	55kg	3288	6.1	II	
5	19	Toxic Liquid, Flammable, Organic, N.O.S. (carbon disulphode, sodium trithiocarbonate mixture)	1	200L	2929	6.1(3)	II	Xanthate Solution
6	4	Batteries wet, filled with acid, electric storage	1	200kg	2794	8	III	
6	11	Xanthates	1	150kg	342	4.2	II	
6	18	N/R ('Snow-white' most likely calcium carbonate in water)	1	150L	N/R	N/R	N/R	
7	7	Pine oil	1	50L	1272	3	III	
7	9	N/R (Waste Dowthern 1012)	1	70L	N/R	N/R	N/R	
7	9 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	drums "# of 11" and #20 consolidated onsite
8	5 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
8	6 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
8	7 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
8	8 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
9	1 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
9	2 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
9	3 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
9	4 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
10	22	Batteries wet, filled with acid, electric storage	1	150kg	2794	8	III	
10	23P	Batteries wet, filled with acid, electric storage	1	25kg	2794	8	III	small pail
10	24P	Batteries wet, filled with acid, electric storage	1	25kg	2794	8	III	small pail
11	10 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
11	11 of 11	Flammable liquids N.O.S., diesel, gas, jet fuel, water mixed	1	190L	1993	3	II	
11	20	Used oil	1	200L	N/R	N/R	N/R	
11	21	Used oil	1	200L	N/R	N/R	N/R	

Laboratory Certificates

- **Soil Chemistry**
- **Water Chemistry**
- **Incinerator Waste Chemistry**
- **Letter from Maxxam on Peat Results (ET1101 Location)**

Soil Chemistry

SENES

Your Project #: IDA BAY
Your C.O.C. #: 104027

Attention: CHARLES F. GRAVELLE
SENES CONSULTANTS LIMITED
121 GRANTON DRIVE, UNIT 12
RICHMOND HILL, ON
CANADA L4B 3N4

Report Date: 2010/08/12
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B063294
Received: 2010/07/27, 12:00

Sample Matrix: Leachate
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
ICPMS Metals on TCLP Leachate	2	2010/08/03	2010/08/04	AB SOP-00043	EPA 200.8

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	2	2010/07/28	2010/07/31	CAL SOP-00190	EPA 8260C/CCME
Hexavalent Chromium	3	2010/07/29	2010/07/29	CAL SOP-00056	SM 3500-Cr B
CCME Hydrocarbons (F2-F4 in soil)	2	2010/07/28	2010/07/28	CAL SOP-00086 AB WI-00016	CCME PHC-CWS
Elements by ICPMS - Soils	3	2010/08/01	2010/08/04	AB SOP-00043	EPA 200.8
Moisture	5	N/A	2010/07/28	CAL SOP-00023	McKeague MSSMA 2.411
pH (1:2 Calcium Chloride Extract)	1	2010/07/29	2010/07/29	AB SOP-00006	SSMA 16.3
pH (1:1 extract, solid waste)	1	2010/07/29	2010/07/29	AB SOP-00006	SSMA 16.3
Particle Size by Sieve (75 micron)	1	N/A	2010/08/11	CAL SOP-00025	SSMA 47.4

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

LISA MCMANES, Sample Reception Supervisor
Email: lisa.mcmanes@maxxamanalytics.com
Phone# (403) 291-3077

==========

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

Total cover pages: 1

Maxxam Job #: B063294
Report Date: 2010/08/12

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Sampler Initials: PS

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		V75196	V75198		
Sampling Date		2010/07/25	2010/07/22		
COC#		104027	104027		
	Units	**STOCKPILE BOTTOM**	**SPILL STOCKPILE**	**RDL**	**QC Batch**
Physical Properties					
Moisture	%	44	4.4	0.3	4139527
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	350	510	10	4138531
F3 (C16-C34 Hydrocarbons)	mg/kg	350	870	10	4138531
F4 (C34-C50 Hydrocarbons)	mg/kg	11	<10	10	4138531
Reached Baseline at C50	mg/kg	YES	YES		4138531
Surrogate Recovery (%)					
O-TERPHENYL (sur.)	%	89	76		4138531
Volatiles					
Benzene	mg/kg	<0.0050	<0.0050	0.0050	4138802
Toluene	mg/kg	<0.020	<0.020	0.020	4138802
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	4138802
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	4138802
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	4138802
o-Xylene	mg/kg	<0.020	<0.020	0.020	4138802
F1 (C6-C10) - BTEX	mg/kg	<12	<12	12	4138802
(C6-C10)	mg/kg	<12	<12	12	4138802
Surrogate Recovery (%)					
4-BROMOFLUOROBENZENE (sur.)	%	87	90		4138802
D10-ETHYLBENZENE (sur.)	%	63	86		4138802
D4-1,2-DICHLOROETHANE (sur.)	%	76	78		4138802
D8-TOLUENE (sur.)	%	106	107		4138802

RDL = Reportable Detection Limit

Maxxam Job #: B063294
Report Date: 2010/08/12

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Sampler Initials: PS

REGULATED METALS (CCME/AT1)

Maxxam ID		V75145		V75146		V75148	V75148		
Sampling Date		2010/07/24		2010/07/24		2010/07/24	2010/07/24		
COC#		104027		104027		104027	104027		
	Units	**SHORELINE-1 LOW/HIGH**	**RDL**	**SHORELINE-2 +HIGH**	**RDL**	**BATTERIES**	**BATTERIES Lab-Dup**	**RDL**	**QC Batch**
Elements									
Hex. Chromium (Cr 6+)	mg/kg	<0.15	0.15	<0.15	0.15	<1.5 (1)	<1.5	1.5	4139923
Total Antimony (Sb)	mg/kg	<1	1	<1	1	<1		1	4147978
Total Arsenic (As)	mg/kg	1	1	1	1	<1		1	4147978
Total Barium (Ba)	mg/kg	92	10	45	10	<10		10	4147978
Total Beryllium (Be)	mg/kg	<0.4	0.4	<0.4	0.4	<0.4		0.4	4147978
Total Cadmium (Cd)	mg/kg	0.3	0.1	0.9	0.1	<0.1		0.1	4147978
Total Chromium (Cr)	mg/kg	73	1	54	1	4		1	4147978
Total Cobalt (Co)	mg/kg	11	1	14	1	3		1	4147978
Total Copper (Cu)	mg/kg	29	5	41	5	<5		5	4147978
Total Lead (Pb)	mg/kg	9	1	93	1	19		1	4147978
Total Mercury (Hg)	mg/kg	<0.05	0.05	<0.05	0.05	<0.05		0.05	4147978
Total Molybdenum (Mo)	mg/kg	1.1	0.4	1.2	0.4	<0.4		0.4	4147978
Total Nickel (Ni)	mg/kg	37	1	31	1	3		1	4147978
Total Selenium (Se)	mg/kg	<0.5	0.5	<0.5	0.5	<0.5		0.5	4147978
Total Silver (Ag)	mg/kg	<1	1	5	1	<1		1	4147978
Total Thallium (Tl)	mg/kg	<0.3	0.3	<0.3	0.3	<0.3		0.3	4147978
Total Tin (Sn)	mg/kg	<1	1	<1	1	<1		1	4147978
Total Uranium (U)	mg/kg	<1	1	<1	1	<1		1	4147978
Total Vanadium (V)	mg/kg	55	1	57	1	11		1	4147978
Total Zinc (Zn)	mg/kg	58	10	300 (2)	20	16		10	4147978

RDL = Reportable Detection Limit
(1) - Matrix Spike recovery non calculable due to matrix interference. Detection limits raised due to matrix interference. Original sample diluted to remove interference.
(2) - Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam Job #: B063294
Report Date: 2010/08/12

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Sampler Initials: PS

ELEMENTS BY ATOMIC SPECTROSCOPY (LEACHATE)

Maxxam ID		V75127	V75127	V75197		
Sampling Date		2010/07/24	2010/07/24	2010/07/24		
COC#		104027	104027	104027		
	Units	**TCLP-1**	**TCLP-1 Lab-Dup**	**TCLP-2**	**RDL**	**QC Batch**
Elements						
Leachable Arsenic (As)	mg/L	<0.5		<0.5	0.5	4152136
Leachable Barium (Ba)	mg/L	2		1	1	4152136
Leachable Cadmium (Cd)	mg/L	<0.1		<0.1	0.1	4152136
Leachable Chromium (Cr)	mg/L	<0.5		<0.5	0.5	4152136
Leachable Copper (Cu)	mg/L	<1		<1	1	4152136
Leachable Lead (Pb)	mg/L	1.4	1.4	1.4	0.5	4152136
Leachable Mercury (Hg)	mg/L	<0.02		<0.02	0.02	4152136
Leachable Selenium (Se)	mg/L	<0.1		<0.1	0.1	4152136
Leachable Silver (Ag)	mg/L	<0.5		<0.5	0.5	4152136
Leachable Uranium (U)	mg/L	<0.2		<0.2	0.2	4152136
Leachable Zinc (Zn)	mg/L	<1		<1	1	4152136

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		V75145	V75145	V75146	V75148	V75195	V75196	V75196		
Sampling Date		2010/07/24	2010/07/24	2010/07/24	2010/07/24	2010/07/26	2010/07/25	2010/07/25		
COC#		104027	104027	104027	104027	104027	104027	104027		
	Units	**SHORELINE-1 LOW/HIGH**	**SHORELINE-1 LOW/HIGH Lab-Dup**	**SHORELINE-2 +HIGH**	**BATTERIES**	**UNKNOWN-1**	**STOCKPILE BOTTOM**	**STOCKPILE BOTTOM Lab-Dup**	**RDL**	**QC Batch**
Soluble Parameters										
Soluble (1:1) pH	N/A					10.6			N/A	4139751
Soluble (CaCl2) pH	N/A					10.7			N/A	4139749
Physical Properties										
Moisture	%	18	21	12	2.8				0.3	4139527
Sieve - Pan	%						64	65	0.2	4169530
Sieve - #200 (>0.075mm)	%						36	35	0.2	4169530
Grain Size	%						FINE	FINE	0.2	4169530

N/A = Not Applicable
RDL = Reportable Detection Limit

Maxxam Job #: B063294
Report Date: 2010/08/12

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Sampler Initials: PS

Package 1	17.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

Maxxam Job #: B063294
Report Date: 2010/08/12

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Sampler Initials: PS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4138531	O-TERPHENYL (sur.)	2010/07/28	73	50 - 130	68	50 - 130	82	%				
4138531	F2 (C10-C16 Hydrocarbons)	2010/07/28	77	50 - 130	87	80 - 120	<10	mg/kg	NC	50		
4138531	F3 (C16-C34 Hydrocarbons)	2010/07/28	86	50 - 130	99	80 - 120	<10	mg/kg	NC	50		
4138531	F4 (C34-C50 Hydrocarbons)	2010/07/28	80	50 - 130	81	80 - 120	<10	mg/kg	NC	50		
4138802	4-BROMOFLUOROBENZENE (sur.)	2010/07/31	96	60 - 140	94	60 - 140	79	%				
4138802	D10-ETHYLBENZENE (sur.)	2010/07/31	84	30 - 130	91	30 - 130	85	%				
4138802	D4-1,2-DICHLOROETHANE (sur.)	2010/07/31	77	60 - 140	77	60 - 140	78	%				
4138802	D8-TOLUENE (sur.)	2010/07/31	106	60 - 140	104	60 - 140	106	%				
4138802	Benzene	2010/08/03	80	60 - 140	81	60 - 140	<0.0050	mg/kg	NC	50		
4138802	Toluene	2010/08/03	78	60 - 140	83	60 - 140	<0.020	mg/kg	NC	50		
4138802	Ethylbenzene	2010/08/03	78	60 - 140	83	60 - 140	<0.010	mg/kg	NC	50		
4138802	m & p-Xylene	2010/08/03	80	60 - 140	84	60 - 140	<0.040	mg/kg	NC	50		
4138802	o-Xylene	2010/08/03	82	60 - 140	87	60 - 140	<0.020	mg/kg	NC	50		
4138802	(C6-C10)	2010/08/03	78	60 - 140	88	60 - 140	<12	mg/kg	NC	50		
4138802	Xylenes (Total)	2010/08/03					<0.040	mg/kg	NC	50		
4138802	F1 (C6-C10) - BTEX	2010/08/03					<12	mg/kg	NC	50		
4139527	Moisture	2010/07/28							11.3	20		
4139749	Soluble (CaCl2) pH	2010/07/29			100	97 - 102			2.6	5	100	97 - 103
4139751	Soluble (1:1) pH	2010/07/29			101	97 - 102			1.4	5	99	91 - 109
4139923	Hex. Chromium (Cr 6+)	2010/07/29			98	90 - 110	<0.15	mg/kg	NC	35		
4147978	Total Antimony (Sb)	2010/08/03	96	75 - 125	106	75 - 125	<1	mg/kg				
4147978	Total Arsenic (As)	2010/08/03	90	75 - 125	98	81 - 103	<1	mg/kg			91	50 - 150
4147978	Total Barium (Ba)	2010/08/03	NC	75 - 125	99	75 - 125	<10	mg/kg			108	69 - 131
4147978	Total Beryllium (Be)	2010/08/03	94	75 - 125	97	75 - 116	<0.4	mg/kg				
4147978	Total Cadmium (Cd)	2010/08/03	100	75 - 125	96	75 - 125	<0.1	mg/kg				
4147978	Total Chromium (Cr)	2010/08/03	97	75 - 125	89	75 - 125	<1	mg/kg			106	41 - 159
4147978	Total Cobalt (Co)	2010/08/03	91	75 - 125	93	75 - 125	<1	mg/kg			104	75 - 125
4147978	Total Copper (Cu)	2010/08/03	89	75 - 125	94	75 - 125	<5	mg/kg			91	72 - 127
4147978	Total Lead (Pb)	2010/08/03	97	75 - 125	103	85 - 112	<1	mg/kg	NC	35	89	54 - 146
4147978	Total Mercury (Hg)	2010/08/03	91	75 - 125	96	75 - 125	<0.05	mg/kg			91	75 - 125
4147978	Total Molybdenum (Mo)	2010/08/03	104	75 - 125	102	75 - 125	<0.4	mg/kg				
4147978	Total Nickel (Ni)	2010/08/03	86	75 - 125	93	75 - 125	<1	mg/kg			102	61 - 139
4147978	Total Selenium (Se)	2010/08/03	88	75 - 125	90	75 - 125	<0.5	mg/kg				
4147978	Total Thallium (Tl)	2010/08/03	96	75 - 125	100	75 - 125	<0.3	mg/kg				
4147978	Total Tin (Sn)	2010/08/03	101	75 - 125	97	75 - 125	<1	mg/kg				
4147978	Total Uranium (U)	2010/08/03	104	75 - 125	96	75 - 125	<1	mg/kg				
4147978	Total Vanadium (V)	2010/08/03	96	75 - 125	91	75 - 125	<1	mg/kg			118	50 - 150
4147978	Total Zinc (Zn)	2010/08/03	NC	75 - 125	97	75 - 125	<10	mg/kg			96	72 - 128
4147978	Total Silver (Ag)	2010/08/03			86	75 - 125	<1	mg/kg				
4152136	Leachable Arsenic (As)	2010/08/04	105	75 - 125	101	85 - 107	<0.5	mg/L				

Maxxam Job #: B063294
Report Date: 2010/08/12

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Sampler Initials: PS

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
4152136	Leachable Barium (Ba)	2010/08/04	NC	75 - 125	108	80 - 120	<1	mg/L				
4152136	Leachable Cadmium (Cd)	2010/08/04	108	75 - 125	108	80 - 120	<0.1	mg/L				
4152136	Leachable Chromium (Cr)	2010/08/04	107	75 - 125	105	80 - 120	<0.5	mg/L				
4152136	Leachable Copper (Cu)	2010/08/04	98	75 - 125	105	81 - 120	<1	mg/L				
4152136	Leachable Lead (Pb)	2010/08/04	NC	75 - 125	102	85 - 113	<0.5	mg/L	NC	35		
4152136	Leachable Mercury (Hg)	2010/08/04	84	75 - 125	91	80 - 120	<0.02	mg/L				
4152136	Leachable Selenium (Se)	2010/08/04	104	75 - 125	104	80 - 120	<0.1	mg/L				
4152136	Leachable Silver (Ag)	2010/08/04	82	75 - 125	89	80 - 120	<0.5	mg/L				
4152136	Leachable Uranium (U)	2010/08/04	113	75 - 125	113	80 - 120	<0.2	mg/L				
4152136	Leachable Zinc (Zn)	2010/08/04	NC	75 - 125	106	80 - 120	<1	mg/L				
4169530	Sieve - Pan	2010/08/11							1.4	35	104	92 - 108
4169530	Sieve - #200 (>0.075mm)	2010/08/11							2.4	35	91	79 - 121

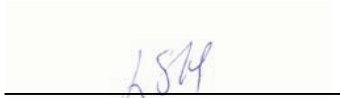
N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

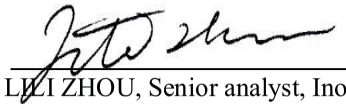
Maxxam Job #: B063294

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

JENNIFER LO, Senior Analyst, Organics Department



LUBA SHYMUSHOVSKA, Senior Analyst, Organic Department



LILI ZHOU, Senior analyst, Inorganic department.

RON VENZI, Scientific Specialist

==========

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

Maxxam Analytics
Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

104027 **CHAIN OF CUSTODY**

Page: 1 of 1

Invoice To: Require Report? Yes [X] No [ ]

Company Name: SENES
Contact Name: P. SIMARD / C. GRAVELLE
Address:
Prov: ONT PC:
Contact #s: Ph: 905-882-5984 Fax: (C. GRAVELLE)
613-230-2405 (P. SIMARD)

Report To: EMAIL
PSIMARD@DCSLTD.CA
CGRAVELLE@DCSLTD.CA
Prov: ONT PC:
Ph: Fax:

PO # / AFE #:
Quotation #:
Project #:
Project Name: IDA BAY
Location:
Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
[ ] AT1
[ ] CCME
[ ] OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S):

SERVICE REQUESTED:
[ ] **RUSH** (Please ensure you contact the lab to reserve)
Date Required:
[X] REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter	Flashpoint	pH (1:1)	TCLP	BTEX	Metals	WATERS: BTEX F1	BTEX F1-F2	BTEX F1-F4	Routine Water Package	Turb	F	Total	Preserved	Not Preserved	Dissolved	Preserved	Not Preserved	Filtered	Not Filtered	REGULATED METALS (CCME / AT1)[3]	Mercury	Total	Dissolved	Ammonia	TKN	COD	TOC	DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	TCLP-1	S	2010/07/25									X																												2
2	SHORELINE-1 LOW/HIGH	S	"					X																																1
3	SHORELINE-2 +HIGH	S	"					X																																1
4	BATTERIES	S	"					X																																2
5	UNKNOWN-1	S	2010/07/26						X																															1
6	STOCKPILE BOTTOM	S	2010/07/25	X																																				2
7	TCLP-2	S	2010/07/25									X																												1
8	SPILL STOCK PILE	S	2010/07/22	X																																				1
9																																							
10																																							
11																																							
12																																							

ARRIVED AT DEPOT:
JUL 27 2010
TEMP: 7/7/7

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #: B063294

Relinquished By: Date/Time: 26/07/10
Sign and Print: PASCAL SIMARD

COMMENTS/SPECIAL INSTRUCTIONS:

RECEIVED
JUL 28 2010
17:12 7.00

# JARS USED & NOT SUBMITTED	Received By	Temperature	Ice
	CUSTODY SEAL YES / NO		

Lisa McManes

From: Pascal Simard [psimard@dcsltd.ca]
Sent: Thursday, August 05, 2010 9:25 AM
To: Lisa McManes
Subject: RE: MaxJob#: B063294, Att: CHARLES F. GRAVELLE, Prj: IDA BAY

Hi Lisa,

Can you run a fine/coarse sieve on the remaining soils of sample "stockpile bottom" ?

Please confirm, thank you.

Pascal Simard, B. Sc.
Remediation Specialist

Decommissioning Consulting Services Limited 260 Hearst Way- Suite 512 (*** New Address ***) Ottawa, Ontario Canada K2L 3H1
Tel: (613) 230-2405
Fax: (613) 230-1403
Email Address: psimard@dcsltd.ca
Web Site: http://www.dcsltd.ca

This transmission is intended only for the addressee. It may contain PRIVILEGED OR CONFIDENTIAL INFORMATION. Any unauthorized disclosure is strictly prohibited. If this transmission is received in error, please notify us immediately so that we may correct our transmission. Please then delete all paper or electronic copies of this e-mail and any files attached to it. Thank you.

Decommissioning Consulting Services Limited does not accept liability for any errors, omissions, corruption or virus in the contents of this transmission or any attachments that arise as a result of this transmission.

-----Original Message-----
From: lisa.mcmanes@maxxamanalytics.com
[mailto:lisa.mcmanes@maxxamanalytics.com]
Sent: Wednesday, August 04, 2010 8:14 PM
To: cgravelle@dcsltd.ca; psimard@dcsltd.ca
Subject: MaxJob#: B063294, Att: CHARLES F. GRAVELLE, Prj: IDA BAY
Importance: High

Greetings!

Maxxam Analytics thanks you for your submission. Attached you will find your Certificate of Analysis. Should you have any questions or concerns, please contact your Project Manager. We welcome any feedback you would care to share with us. To do so, please contact us at comments@maxxamanalytics.com

Your result File B063294-R2010-08-04_18-07-19_R014.pdf; B063294-R2010-08-04_18-07-19_N001.xls; is attached.

MAXXAM ANALYTICS
4000 19st N.E
Calgary, Alberta T2E 6P8
http://www.maxxamanalytics.com

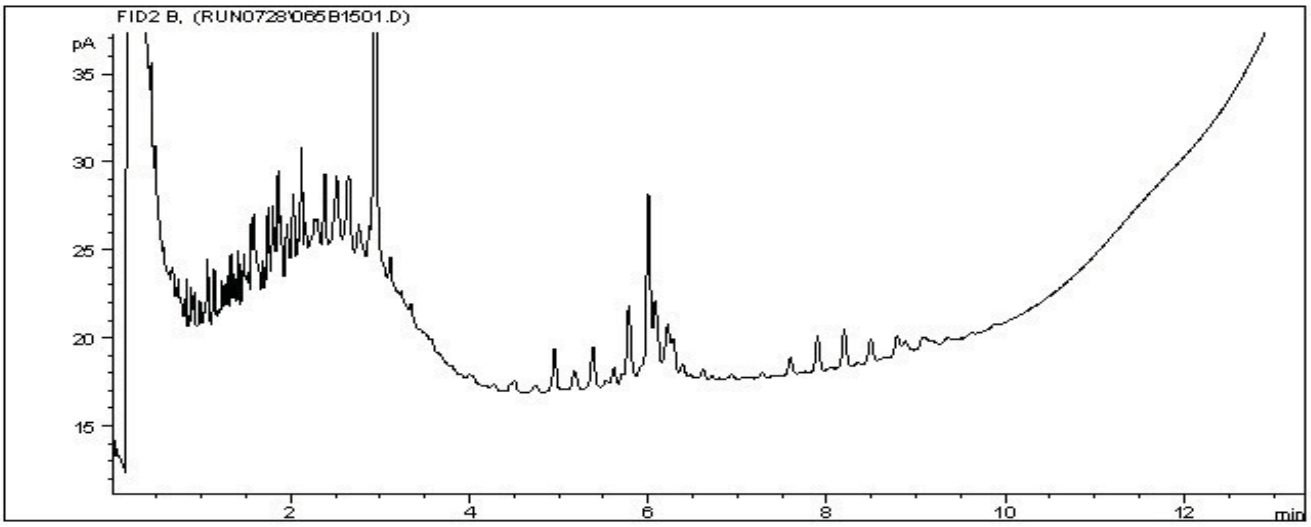
1

SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

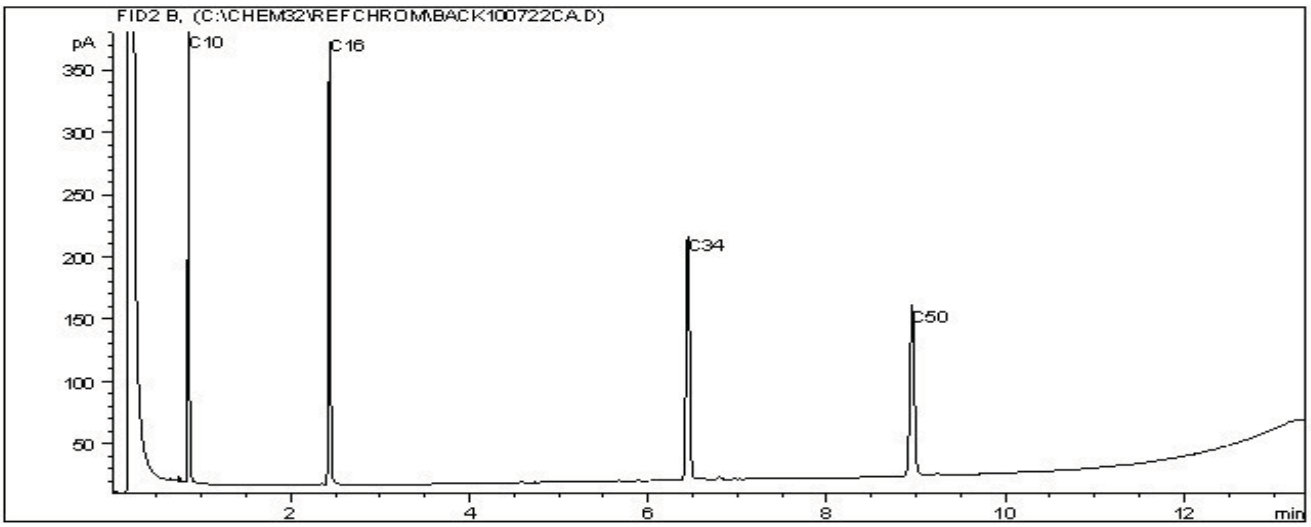
Report Date: 2010/08/12
Maxxam Job #: B063294
Maxxam Sample: V75196

Client ID: STOCKPILE BOTTOM

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

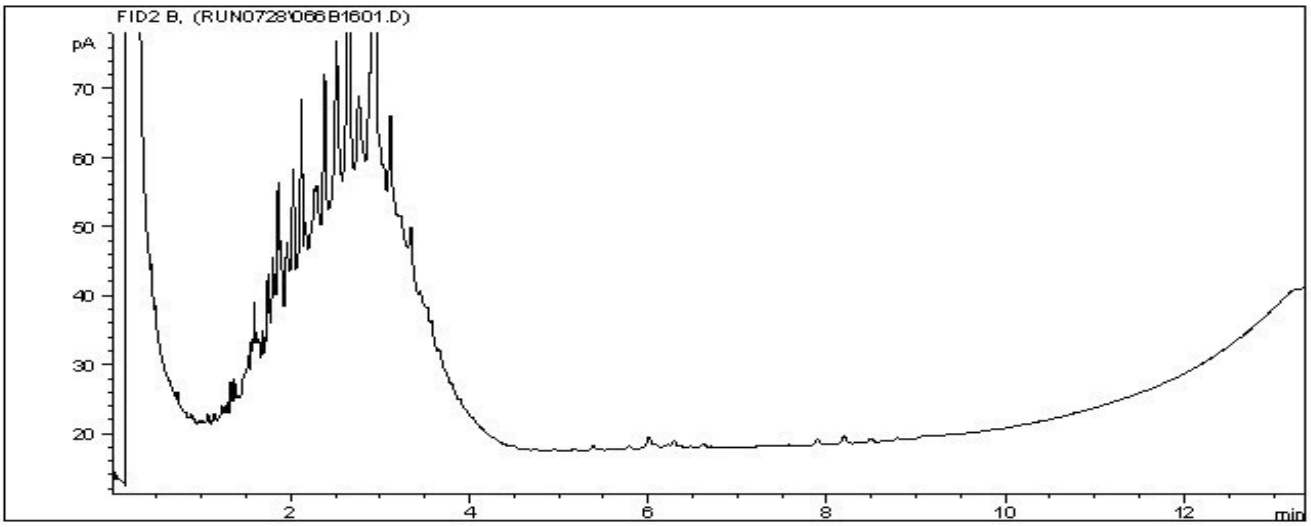
Note: This information is provided for reference purposes only. Should detailed chemist intrepretation or fingerprinting be required to please contact the laboratory.

Report Date: 2010/08/12
Maxxam Job #: B063294
Maxxam Sample: V75198

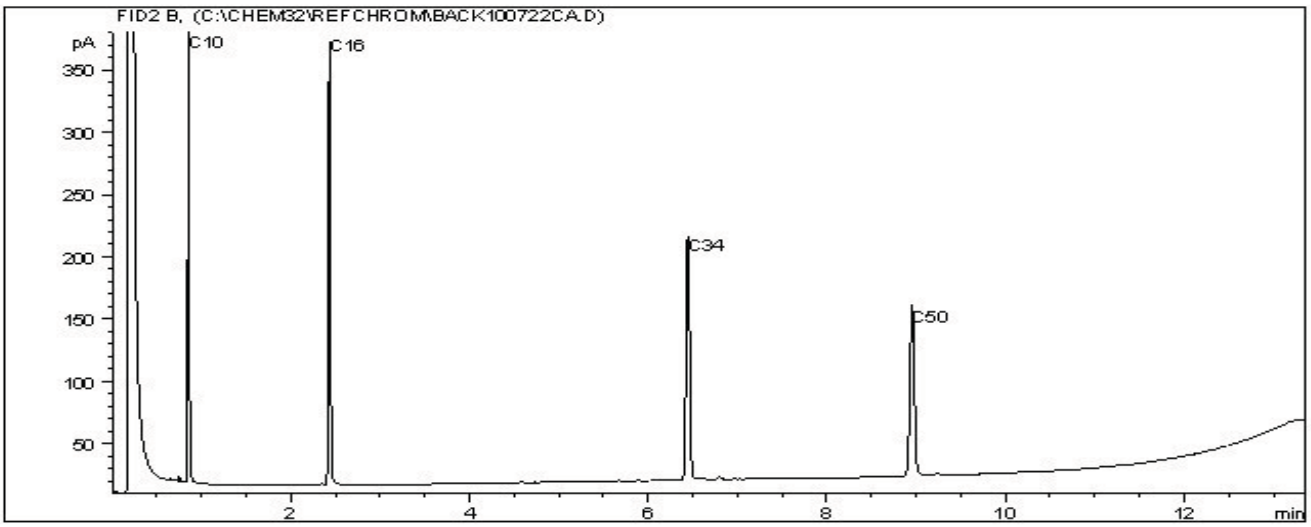
SENES CONSULTANTS LIMITED
Client Project #: IDA BAY

Client ID: SPILL STOCKPILE

CCME Hydrocarbons (F2-F4 in soil) Chromatogram



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

Note: This information is provided for reference purposes only. Should detailed chemist intrepretation or fingerprinting be required to please contact the laboratory.

Your Project #: ROBERTO BAY
Site:34807
Your C.O.C. #: 80940

Attention: HENRY WONG
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
ON
CANADA L4B 3N4

Report Date: 2009/08/13
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A942132
Received: 2009/08/11, 9:30

Sample Matrix: Soil
Samples Received: 30

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Boron (Hot Water Soluble)	6	2009/08/12	2009/08/12	CAL SOP-00192	EPA SW846/6010B
BTEX/F1 by HS GC/MS (MeOH extract)	30	2009/08/11	2009/08/12	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
Hexavalent Chromium	6	2009/08/12	2009/08/12	EENVSOP-00131	SM 3500-Cr B
CCME Hydrocarbons (F2-F4 in soil)	29	2009/08/11	2009/08/12	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
CCME Hydrocarbons (F2-F4 in soil)	1	2009/08/11	2009/08/13	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
CCME Hydrocarbons (F4G in soil)	1	2009/08/11	2009/08/13	EENVSOP-00121	CWS PHCS Tier 1
CCME Hydrocarbons (F4G in soil)	3	2009/08/13	2009/08/13	EENVSOP-00121	CWS PHCS Tier 1
Elements by ICPMS - Soils	5	2009/08/12	2009/08/12	CAL SOP-00191	EPA SW-846-6020A
Elements by ICPMS - Soils	1	2009/08/12	2009/08/13	CAL SOP-00191	EPA SW-846-6020A
Moisture	30	N/A	2009/08/12	EENVSOP-00139	Carter SSMA 51.2

Encryption Key

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

SHELYCE MORRISON, Project Manager
Email: shelyce.morrison@maxxamanalytics.com
Phone# (780) 577-7115 Ext:7115

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		Q18429	Q18432	Q18433	Q18434		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB1**	**V09-FB2**	**V09-FB3**	**V09-FB4**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	31	11	21	26	0.3	3340378

RDL = Reportable Detection Limit

Maxxam ID		Q18435	Q18436	Q18437	Q18438		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB5**	**V09-FB6**	**V09-FB7**	**V09-FB8**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	31	11	20	15	0.3	3340378

RDL = Reportable Detection Limit

Maxxam ID		Q18440	Q18442	Q18445	Q18447		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB9**	**V09-M1**	**V09-M2**	**V09-M3**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	6.9	79	16	26	0.3	3340378

RDL = Reportable Detection Limit

Maxxam ID		Q18449	Q18450	Q18451	Q18452		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-M4**	**V09-M5**	**V09-MK1**	**V09-MK2**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	13	70	10	8.2	0.3	3340378

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		Q18453	Q18454	Q18455	Q18456		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MK3**	**V09-MK4**	**V09-MK5**	**V09-MK6**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	14	8.8	14	8.9	0.3	3340378

RDL = Reportable Detection Limit

Maxxam ID		Q18457	Q18458	Q18459	Q18460		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MK7**	**V09-MK8**	**V09-MI1**	**V09-MI2**	**RDL**	**QC Batch**
Elements							
Soluble (Hot water) Boron (B)	mg/kg			0.3	<0.1	0.1	3342451
Hex. Chromium (Cr 6+)	mg/kg			<0.15	<0.15	0.15	3341030
Physical Properties							
Moisture	%	13	16	7.8	5.4	0.3	3340393

RDL = Reportable Detection Limit

Maxxam ID		Q18461	Q18462	Q18463		
Sampling Date		2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940		
	Units	**V09-MI3**	**V09-MI4**	**V09-MI5**	**RDL**	**QC Batch**
Elements						
Soluble (Hot water) Boron (B)	mg/kg	0.4	0.1	2.5	0.1	3342451
Hex. Chromium (Cr 6+)	mg/kg	<0.15	<0.15	<0.15	0.15	3341030
Physical Properties						
Moisture	%	4.3	4.2	35	0.3	3340393

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		Q18464	Q18465	Q18466		
Sampling Date		2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940		
	Units	**V09-MI6**	**DUP 1**	**DUP 2**	**RDL**	**QC Batch**
Elements						
Soluble (Hot water) Boron (B)	mg/kg	<0.1			0.1	3342451
Hex. Chromium (Cr 6+)	mg/kg	<0.15			0.15	3341298
Physical Properties						
Moisture	%	5.1	67	11	0.3	3340393

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		Q18429	Q18432	Q18433	Q18434		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB1**	**V09-FB2**	**V09-FB3**	**V09-FB4**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	16000	100	94	16	10	3340375
F3 (C16-C34 Hydrocarbons)	mg/kg	4600	160	130	83	10	3340375
F4 (C34-C50 Hydrocarbons)	mg/kg	39	<10	12	<10	10	3340375
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3340375
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	99	96	94	90		3340375

RDL = Reportable Detection Limit

Maxxam ID		Q18435	Q18436	Q18437	Q18438		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB5**	**V09-FB6**	**V09-FB7**	**V09-FB8**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	400	260	10	3340375
F3 (C16-C34 Hydrocarbons)	mg/kg	98	29	160	240	10	3340375
F4 (C34-C50 Hydrocarbons)	mg/kg	23	<10	10	20	10	3340375
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3340375
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	99	96	93	94		3340375

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		Q18440	Q18442	Q18445	Q18447		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB9**	**V09-M1**	**V09-M2**	**V09-M3**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	54	88000	<10	2000	10	3340375
F3 (C16-C34 Hydrocarbons)	mg/kg	77	34000	41	560	10	3340375
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	920	<10	<10	10	3340375
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3340375
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	97	106	96	93		3340375

RDL = Reportable Detection Limit

Maxxam ID		Q18449	Q18450	Q18451	Q18452		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-M4**	**V09-M5**	**V09-MK1**	**V09-MK2**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	920	4200	<10	15	10	3340375
F3 (C16-C34 Hydrocarbons)	mg/kg	5100	89000	56	24	10	3340375
F4 (C34-C50 Hydrocarbons)	mg/kg	230	5200	19	<10	10	3340375
Reached Baseline at C50	mg/kg	Yes	No	Yes	Yes		3340375
OIL & GREASE							
F4SG (Heavy Hydrocarbons-Grav.)	mg/kg		110000			500	3343205
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	94	109	98	88		3340375

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		Q18453	Q18454	Q18455	Q18456		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MK3**	**V09-MK4**	**V09-MK5**	**V09-MK6**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	2000	17	1600	22	10	3340375
F3 (C16-C34 Hydrocarbons)	mg/kg	940	98	630	140	10	3340375
F4 (C34-C50 Hydrocarbons)	mg/kg	16	<10	84	12	10	3340375
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3340375
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	91	92	91	88		3340375

RDL = Reportable Detection Limit

Maxxam ID		Q18457	Q18458	Q18459	Q18460		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MK7**	**V09-MK8**	**V09-MI1**	**V09-MI2**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	96	8200	11	<10	10	3340434
F3 (C16-C34 Hydrocarbons)	mg/kg	210	8700	65	14	10	3340434
F4 (C34-C50 Hydrocarbons)	mg/kg	20	1200	29	<10	10	3340434
Reached Baseline at C50	mg/kg	Yes	No	Yes	Yes		3340434
OIL & GREASE							
F4SG (Heavy Hydrocarbons-Grav.)	mg/kg		9300			500	3343205
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	90	106	110	95		3340434

RDL = Reportable Detection Limit

Maxxam Analytics

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		Q18461	Q18462	Q18463	Q18464		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MI3**	**V09-MI4**	**V09-MI5**	**V09-MI6**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	15	<10	10	3340434
F3 (C16-C34 Hydrocarbons)	mg/kg	20	16	180	<10	10	3340434
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	49	<10	10	3340434
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3340434
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	91	95	108	99		3340434

RDL = Reportable Detection Limit

Maxxam ID		Q18465		Q18466		
Sampling Date		2009/08/09		2009/08/09		
COC Number		80940		80940		
	Units	**DUP 1**	**RDL**	**DUP 2**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	5000	100	6900	10	3340434
F3 (C16-C34 Hydrocarbons)	mg/kg	86000	100	6400	10	3340434
F4 (C34-C50 Hydrocarbons)	mg/kg	4300	100	840	10	3340434
Reached Baseline at C50	mg/kg	No		No		3340434
OIL & GREASE						
F4SG (Heavy Hydrocarbons-Grav.)	mg/kg	100000	500	5600	500	3343205
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	85		125		3340434

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		Q18459	Q18460	Q18461	Q18462		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MI1**	**V09-MI2**	**V09-MI3**	**V09-MI4**	**RDL**	**QC Batch**
Elements							
Total Antimony (Sb)	mg/kg	3	<1	5	4	1	3341966
Total Arsenic (As)	mg/kg	29	2	53	28	1	3341966
Total Barium (Ba)	mg/kg	94	20	150	68	10	3341966
Total Beryllium (Be)	mg/kg	<0.4	<0.4	<0.4	<0.4	0.4	3341966
Total Cadmium (Cd)	mg/kg	0.5	<0.1	2.1	2.7	0.1	3341966
Total Chromium (Cr)	mg/kg	27	5	79	84	1	3341966
Total Cobalt (Co)	mg/kg	20	4	23	28	1	3341966
Total Copper (Cu)	mg/kg	64	24	120	110	5	3341966
Total Lead (Pb)	mg/kg	70	9	160	65	1	3341966
Total Mercury (Hg)	mg/kg	<0.05	<0.05	0.10	<0.05	0.05	3341966
Total Molybdenum (Mo)	mg/kg	1.9	<0.4	2.7	2.9	0.4	3341966
Total Nickel (Ni)	mg/kg	33	6	70	61	1	3341966
Total Selenium (Se)	mg/kg	<0.5	<0.5	1.0	<0.5	0.5	3341966
Total Silver (Ag)	mg/kg	17 (1)	<1	33	8	1	3341966
Total Thallium (Tl)	mg/kg	<0.3	<0.3	<0.3	<0.3	0.3	3341966
Total Tin (Sn)	mg/kg	<1	<1	2	<1	1	3341966
Total Uranium (U)	mg/kg	<1	<1	<1	<1	1	3341966
Total Vanadium (V)	mg/kg	48	10	51	63	1	3341966
Total Zinc (Zn)	mg/kg	73	25	200	130	10	3341966

RDL = Reportable Detection Limit
(1) Duplicate exceeds acceptance criteria due to sample non homogeneity. Reanalysis yields similar results.

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

ELEMENTS BY ATOMIC SPECTROSCOPY (SOIL)

Maxxam ID		Q18463		Q18464		
Sampling Date		2009/08/09		2009/08/09		
COC Number		80940		80940		
	Units	**V09-MI5**	**RDL**	**V09-MI6**	**RDL**	**QC Batch**
Elements						
Total Antimony (Sb)	mg/kg	4	1	<1	1	3341966
Total Arsenic (As)	mg/kg	480	1	3	1	3341966
Total Barium (Ba)	mg/kg	170	10	22	10	3341966
Total Beryllium (Be)	mg/kg	<0.4	0.4	<0.4	0.4	3341966
Total Cadmium (Cd)	mg/kg	2.5	0.1	<0.1	0.1	3341966
Total Chromium (Cr)	mg/kg	24	1	8	1	3341966
Total Cobalt (Co)	mg/kg	70	1	5	1	3341966
Total Copper (Cu)	mg/kg	460	5	8	5	3341966
Total Lead (Pb)	mg/kg	1500 (1)	10	6	1	3341966
Total Mercury (Hg)	mg/kg	0.62	0.05	<0.05	0.05	3341966
Total Molybdenum (Mo)	mg/kg	3.0	0.4	<0.4	0.4	3341966
Total Nickel (Ni)	mg/kg	330	1	7	1	3341966
Total Selenium (Se)	mg/kg	2.0	0.5	<0.5	0.5	3341966
Total Silver (Ag)	mg/kg	70	1	<1	1	3341966
Total Thallium (Tl)	mg/kg	0.3	0.3	<0.3	0.3	3341966
Total Tin (Sn)	mg/kg	<1	1	<1	1	3341966
Total Uranium (U)	mg/kg	<1	1	<1	1	3341966
Total Vanadium (V)	mg/kg	37	1	16	1	3341966
Total Zinc (Zn)	mg/kg	780 (1)	20	31	10	3341966

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

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18429	Q18432	Q18433	Q18434		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB1**	**V09-FB2**	**V09-FB3**	**V09-FB4**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3341022
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3341022
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3341022
Xylenes (Total)	mg/kg	2.5	<0.040	<0.040	<0.040	0.040	3341022
m & p-Xylene	mg/kg	0.97	<0.040	<0.040	<0.040	0.040	3341022
o-Xylene	mg/kg	1.5	<0.020	<0.020	<0.020	0.020	3341022
F1 (C6-C10) - BTEX	mg/kg	330	<12	<12	<12	12	3341022
(C6-C10)	mg/kg	340	<12	<12	<12	12	3341022
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	110	101	102	98		3341022
D10-ETHYLBENZENE (sur.)	%	87	106	106	112		3341022
D4-1,2-DICHLOROETHANE (sur.)	%	111	92	92	96		3341022
D8-TOLUENE (sur.)	%	98	102	105	102		3341022

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18435	Q18436	Q18437	Q18438		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-FB5**	**V09-FB6**	**V09-FB7**	**V09-FB8**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3341022
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3341022
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3341022
Xylenes (Total)	mg/kg	<0.040	<0.040	0.11	<0.040	0.040	3341022
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	3341022
o-Xylene	mg/kg	<0.020	<0.020	0.11	<0.020	0.020	3341022
F1 (C6-C10) - BTEX	mg/kg	<12	<12	22	<12	12	3341022
(C6-C10)	mg/kg	<12	<12	23	<12	12	3341022
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	100	101	97	104		3341022
D10-ETHYLBENZENE (sur.)	%	110	100	106	105		3341022
D4-1,2-DICHLOROETHANE (sur.)	%	94	94	93	95		3341022
D8-TOLUENE (sur.)	%	101	102	101	103		3341022

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18440		Q18442		
Sampling Date		2009/08/09		2009/08/09		
COC Number		80940		80940		
	Units	**V09-FB9**	**RDL**	**V09-M1**	**RDL**	**QC Batch**
Volatiles						
Benzene	mg/kg	<0.0050	0.0050	<0.024	0.024	3341022
Toluene	mg/kg	<0.020	0.020	<0.095	0.095	3341022
Ethylbenzene	mg/kg	<0.010	0.010	1.4	0.048	3341022
Xylenes (Total)	mg/kg	<0.040	0.040	53	0.19	3341022
m & p-Xylene	mg/kg	<0.040	0.040	29	0.19	3341022
o-Xylene	mg/kg	<0.020	0.020	24	0.095	3341022
F1 (C6-C10) - BTEX	mg/kg	<12	12	2400	57	3341022
(C6-C10)	mg/kg	<12	12	2500	57	3341022
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	99		83		3341022
D10-ETHYLBENZENE (sur.)	%	101		78		3341022
D4-1,2-DICHLOROETHANE (sur.)	%	97		94		3341022
D8-TOLUENE (sur.)	%	99		102		3341022

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18445	Q18447	Q18449		
Sampling Date		2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940		
	Units	**V09-M2**	**V09-M3**	**V09-M4**	**RDL**	**QC Batch**
Volatiles						
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	3341022
Toluene	mg/kg	<0.020	<0.020	<0.020	0.020	3341022
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.010	3341022
Xylenes (Total)	mg/kg	<0.040	0.48	<0.040	0.040	3341022
m & p-Xylene	mg/kg	<0.040	0.32	<0.040	0.040	3341022
o-Xylene	mg/kg	<0.020	0.16	<0.020	0.020	3341022
F1 (C6-C10) - BTEX	mg/kg	<12	140	25	12	3341022
(C6-C10)	mg/kg	<12	140	25	12	3341022
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	114	101	106		3341022
D10-ETHYLBENZENE (sur.)	%	113	97	97		3341022
D4-1,2-DICHLOROETHANE (sur.)	%	93	109	107		3341022
D8-TOLUENE (sur.)	%	100	97	97		3341022

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18450		Q18451	Q18452		
Sampling Date		2009/08/09		2009/08/09	2009/08/09		
COC Number		80940		80940	80940		
	Units	**V09-M5**	**RDL**	**V09-MK1**	**V09-MK2**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.017	0.017	<0.0050	<0.0050	0.0050	3341022
Toluene	mg/kg	<0.068	0.068	<0.020	<0.020	0.020	3341022
Ethylbenzene	mg/kg	0.11	0.034	<0.010	<0.010	0.010	3341022
Xylenes (Total)	mg/kg	2.0	0.14	<0.040	<0.040	0.040	3341022
m & p-Xylene	mg/kg	0.87	0.14	<0.040	<0.040	0.040	3341022
o-Xylene	mg/kg	1.1	0.068	<0.020	<0.020	0.020	3341022
F1 (C6-C10) - BTEX	mg/kg	110	41	<12	<12	12	3341022
(C6-C10)	mg/kg	120	41	<12	<12	12	3341022
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	109		104	107		3341022
D10-ETHYLBENZENE (sur.)	%	79		99	95		3341022
D4-1,2-DICHLOROETHANE (sur.)	%	100		106	108		3341022
D8-TOLUENE (sur.)	%	100		103	107		3341022

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18453	Q18454	Q18455	Q18456		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MK3**	**V09-MK4**	**V09-MK5**	**V09-MK6**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3341022
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3341022
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3341022
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	3341022
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	3341022
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3341022
F1 (C6-C10) - BTEX	mg/kg	42	<12	24	<12	12	3341022
(C6-C10)	mg/kg	42	<12	24	<12	12	3341022
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	112	90	111	100		3341022
D10-ETHYLBENZENE (sur.)	%	111	89	102	112		3341022
D4-1,2-DICHLOROETHANE (sur.)	%	105	94	93	95		3341022
D8-TOLUENE (sur.)	%	99	102	102	102		3341022

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18457	Q18458	Q18459	Q18460		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MK7**	**V09-MK8**	**V09-MI1**	**V09-MI2**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3340559
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3340559
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3340559
Xylenes (Total)	mg/kg	<0.040	0.10	<0.040	<0.040	0.040	3340559
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	3340559
o-Xylene	mg/kg	<0.020	0.10	<0.020	<0.020	0.020	3340559
F1 (C6-C10) - BTEX	mg/kg	<12	24	91	<12	12	3340559
(C6-C10)	mg/kg	<12	24	91	<12	12	3340559
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	98	112	112	99		3340559
D10-ETHYLBENZENE (sur.)	%	94	91	95	96		3340559
D4-1,2-DICHLOROETHANE (sur.)	%	87	86	88	85		3340559
D8-TOLUENE (sur.)	%	104	105	105	106		3340559

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18461	Q18462	Q18463	Q18464		
Sampling Date		2009/08/09	2009/08/09	2009/08/09	2009/08/09		
COC Number		80940	80940	80940	80940		
	Units	**V09-MI3**	**V09-MI4**	**V09-MI5**	**V09-MI6**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3340559
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3340559
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3340559
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	3340559
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	0.040	3340559
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3340559
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	12	3340559
(C6-C10)	mg/kg	<12	<12	<12	<12	12	3340559
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	100	98	77	84		3340559
D10-ETHYLBENZENE (sur.)	%	92	94	108	102		3340559
D4-1,2-DICHLOROETHANE (sur.)	%	87	98	99	96		3340559
D8-TOLUENE (sur.)	%	104	99	97	111		3340559

RDL = Reportable Detection Limit

Maxxam Job #: A942132
Report Date: 2009/08/13

SENES CONSULTANTS LIMITED
Client Project #: ROBERTO BAY
Site Reference: 34807
Sampler Initials: HM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q18465		Q18466		
Sampling Date		2009/08/09		2009/08/09		
COC Number		80940		80940		
	Units	**DUP 1**	**RDL**	**DUP 2**	**RDL**	**QC Batch**
Volatiles						
Benzene	mg/kg	<0.015	0.015	<0.0050	0.0050	3340559
Toluene	mg/kg	<0.061	0.061	<0.020	0.020	3340559
Ethylbenzene	mg/kg	0.051	0.030	<0.010	0.010	3340559
Xylenes (Total)	mg/kg	0.81	0.12	0.34	0.040	3340559
m & p-Xylene	mg/kg	0.39	0.12	0.060	0.040	3340559
o-Xylene	mg/kg	0.42	0.061	0.28	0.020	3340559
F1 (C6-C10) - BTEX	mg/kg	<36	36	79	12	3340559
(C6-C10)	mg/kg	<36	36	80	12	3340559
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	78		105		3340559
D10-ETHYLBENZENE (sur.)	%	96		92		3340559
D4-1,2-DICHLOROETHANE (sur.)	%	97		98		3340559
D8-TOLUENE (sur.)	%	109		107		3340559

RDL = Reportable Detection Limit

General Comments

Sample Q18442-01: Btex/F1 Detection limits raised due to high moisture content. Sample contained > 50 wt% moisture.

Sample Q18450-01: Btex/F1 Detection limits raised due to high moisture content. Sample contained > 50 wt% moisture.

Sample Q18465-01: Btex/F1 Detection limits raised due to high moisture content. Sample contained > 50 wt% moisture.
Detection limits raised due to dilution to bring analyte within the calibrated range for F24.

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: ROBERTO BAY
P.O. #:
Site Reference: 34807

Quality Assurance Report

Maxxam Job Number: EA942132

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3340375	MB7	Matrix Spike						
		[Q18432-01]	O-TERPHENYL (sur.)	2009/08/12		85	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/12		71	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/08/12		77	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/08/12		88	%	50 - 130
		Spiked Blank	O-TERPHENYL (sur.)	2009/08/12		86	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/12		85	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/08/12		95	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/08/12		107	%	80 - 120
		Method Blank	O-TERPHENYL (sur.)	2009/08/12		94	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/12	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/08/12	11, RDL=10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/08/12	<10		mg/kg	
		RPD [Q18429-01]	F2 (C10-C16 Hydrocarbons)	2009/08/12	6.5		%	50
			F3 (C16-C34 Hydrocarbons)	2009/08/12	11.7		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/12	NC		%	50
3340378	SR7	Method Blank	Moisture	2009/08/12	<0.3		%	
		RPD [Q18429-01]	Moisture	2009/08/12	8.0		%	20
3340393	SR7	Method Blank	Moisture	2009/08/12	<0.3		%	
		RPD [Q18457-01]	Moisture	2009/08/12	0.8		%	20
3340434	KW2	Matrix Spike	O-TERPHENYL (sur.)	2009/08/12		101	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/12		108	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/08/12		109	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/08/12		121	%	50 - 130
		Spiked Blank	O-TERPHENYL (sur.)	2009/08/12		91	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/12		106	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/08/12		108	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/08/12		117	%	80 - 120
		Method Blank	O-TERPHENYL (sur.)	2009/08/12		108	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/12	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/08/12	17, RDL=10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/08/12	<10		mg/kg	
		RPD	F2 (C10-C16 Hydrocarbons)	2009/08/13	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/08/13	10.9		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/13	NC		%	50
3340559	CL9	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2009/08/12		100	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/12		119	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/12		105	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/12		99	%	60 - 140
			Benzene	2009/08/12		127	%	60 - 140
			Toluene	2009/08/12		128	%	60 - 140
			Ethylbenzene	2009/08/12		133	%	60 - 140
			m & p-Xylene	2009/08/12		139	%	60 - 140
			o-Xylene	2009/08/12		138	%	60 - 140
			(C6-C10)	2009/08/12		113	%	60 - 140
		Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/12		101	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/12		103	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/12		96	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/12		100	%	60 - 140
			Benzene	2009/08/12		106	%	60 - 140
			Toluene	2009/08/12		104	%	60 - 140
			Ethylbenzene	2009/08/12		114	%	60 - 140
			m & p-Xylene	2009/08/12		112	%	60 - 140
			o-Xylene	2009/08/12		112	%	60 - 140
			(C6-C10)	2009/08/12		112	%	80 - 120

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: ROBERTO BAY
P.O. #:
Site Reference: 34807

Quality Assurance Report (Continued)

Maxxam Job Number: EA942132

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3340559	CL9	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/12		94	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/12		103	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/12		92	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/12		105	%	60 - 140
			Benzene	2009/08/12	<0.0050		mg/kg	
			Toluene	2009/08/12	<0.020		mg/kg	
			Ethylbenzene	2009/08/12	<0.010		mg/kg	
			Xylenes (Total)	2009/08/12	<0.040		mg/kg	
			m & p-Xylene	2009/08/12	<0.040		mg/kg	
			o-Xylene	2009/08/12	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/08/12	<12		mg/kg	
			(C6-C10)	2009/08/12	<12		mg/kg	
		RPD	Benzene	2009/08/12	NC		%	50
			Toluene	2009/08/12	NC		%	50
			Ethylbenzene	2009/08/12	NC		%	50
			Xylenes (Total)	2009/08/12	NC		%	50
			m & p-Xylene	2009/08/12	NC		%	50
			o-Xylene	2009/08/12	NC		%	50
			F1 (C6-C10) - BTEX	2009/08/12	NC		%	50
			(C6-C10)	2009/08/12	NC		%	50
3341022	CL9	Matrix Spike						
		[Q18432-01]	4-BROMOFLUOROBENZENE (sur.)	2009/08/12		100	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/12		101	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/12		96	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/12		100	%	60 - 140
			Benzene	2009/08/12		105	%	60 - 140
			Toluene	2009/08/12		100	%	60 - 140
			Ethylbenzene	2009/08/12		109	%	60 - 140
			m & p-Xylene	2009/08/12		107	%	60 - 140
			o-Xylene	2009/08/12		107	%	60 - 140
			(C6-C10)	2009/08/12		107	%	60 - 140
		Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/12		112	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/12		96	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/12		126	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/12		91	%	60 - 140
			Benzene	2009/08/12		89	%	60 - 140
			Toluene	2009/08/12		80	%	60 - 140
			Ethylbenzene	2009/08/12		83	%	60 - 140
			m & p-Xylene	2009/08/12		92	%	60 - 140
			o-Xylene	2009/08/12		87	%	60 - 140
			(C6-C10)	2009/08/12		105	%	80 - 120
		Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/12		108	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/12		99	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/12		108	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/12		95	%	60 - 140
			Benzene	2009/08/12	<0.0050		mg/kg	
			Toluene	2009/08/12	<0.020		mg/kg	
			Ethylbenzene	2009/08/12	<0.010		mg/kg	
			Xylenes (Total)	2009/08/12	<0.040		mg/kg	
			m & p-Xylene	2009/08/12	<0.040		mg/kg	
			o-Xylene	2009/08/12	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/08/12	<12		mg/kg	
			(C6-C10)	2009/08/12	<12		mg/kg	
		RPD [Q18429-01]	Benzene	2009/08/12	NC		%	50
			Toluene	2009/08/12	NC		%	50

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: ROBERTO BAY
P.O. #:
Site Reference: 34807

Quality Assurance Report (Continued)

Maxxam Job Number: EA942132

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3341022	CL9	RPD [Q18429-01]	Ethylbenzene	2009/08/12	NC		%	50
			Xylenes (Total)	2009/08/12	21.3		%	50
			m & p-Xylene	2009/08/12	17.6		%	50
			o-Xylene	2009/08/12	23.6		%	50
			F1 (C6-C10) - BTEX	2009/08/12	19.7		%	50
			(C6-C10)	2009/08/12	19.7		%	50
3341030	AL2	Matrix Spike	Hex. Chromium (Cr 6+)	2009/08/12		86	%	75 - 125
		Spiked Blank	Hex. Chromium (Cr 6+)	2009/08/12		96	%	80 - 120
		Method Blank	Hex. Chromium (Cr 6+)	2009/08/12	<0.15		mg/kg	
		RPD	Hex. Chromium (Cr 6+)	2009/08/12	NC		%	35
3341298	AL2	Matrix Spike	Hex. Chromium (Cr 6+)	2009/08/12		86	%	75 - 125
		Spiked Blank	Hex. Chromium (Cr 6+)	2009/08/12		95	%	80 - 120
		Method Blank	Hex. Chromium (Cr 6+)	2009/08/12	<0.15		mg/kg	
		RPD	Hex. Chromium (Cr 6+)	2009/08/12	NC		%	35
3341966	EO1	Calibration Check	Total Antimony (Sb)	2009/08/12		97	%	80 - 120
			Total Arsenic (As)	2009/08/12		84	%	80 - 120
			Total Barium (Ba)	2009/08/12		83	%	80 - 120
			Total Beryllium (Be)	2009/08/12		93	%	80 - 120
			Total Cadmium (Cd)	2009/08/12		88	%	80 - 120
			Total Chromium (Cr)	2009/08/12		86	%	80 - 120
			Total Cobalt (Co)	2009/08/12		86	%	80 - 120
			Total Copper (Cu)	2009/08/12		86	%	80 - 120
			Total Lead (Pb)	2009/08/12		90	%	80 - 120
			Total Mercury (Hg)	2009/08/12		98	%	80 - 120
			Total Molybdenum (Mo)	2009/08/12		83	%	80 - 120
			Total Nickel (Ni)	2009/08/12		85	%	80 - 120
			Total Selenium (Se)	2009/08/12		84	%	80 - 120
			Total Silver (Ag)	2009/08/12		85	%	80 - 120
			Total Thallium (Tl)	2009/08/12		88	%	80 - 120
			Total Tin (Sn)	2009/08/12		81	%	80 - 120
			Total Uranium (U)	2009/08/12		88	%	80 - 120
			Total Vanadium (V)	2009/08/12		87	%	80 - 120
			Total Zinc (Zn)	2009/08/12		95	%	80 - 120
		Matrix Spike [Q18459-01]	Total Antimony (Sb)	2009/08/12		79	%	75 - 125
			Total Arsenic (As)	2009/08/12		79	%	75 - 125
			Total Barium (Ba)	2009/08/12		84	%	75 - 125
			Total Beryllium (Be)	2009/08/12		80	%	75 - 125
			Total Cadmium (Cd)	2009/08/12		85	%	75 - 125
			Total Chromium (Cr)	2009/08/12		75	%	75 - 125
			Total Cobalt (Co)	2009/08/12		78	%	75 - 125
			Total Copper (Cu)	2009/08/12		77	%	75 - 125
			Total Lead (Pb)	2009/08/12		78	%	75 - 125
			Total Mercury (Hg)	2009/08/12		93	%	75 - 125
			Total Molybdenum (Mo)	2009/08/12		84	%	75 - 125
			Total Nickel (Ni)	2009/08/12		87	%	75 - 125
			Total Selenium (Se)	2009/08/12		79	%	75 - 125
			Total Silver (Ag)	2009/08/12		76	%	75 - 125
			Total Thallium (Tl)	2009/08/12		85	%	75 - 125
			Total Tin (Sn)	2009/08/12		82	%	75 - 125
			Total Uranium (U)	2009/08/12		83	%	75 - 125
			Total Vanadium (V)	2009/08/12		87	%	75 - 125
			Total Zinc (Zn)	2009/08/12		77	%	75 - 125
		QC Standard	Total Arsenic (As)	2009/08/12		84	%	72 - 128
			Total Barium (Ba)	2009/08/12		81	%	67 - 132

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: ROBERTO BAY
P.O. #:
Site Reference: 34807

Quality Assurance Report (Continued)

Maxxam Job Number: EA942132

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3341966	EO1	QC Standard	Total Chromium (Cr)	2009/08/12		59	%	50 - 150
			Total Cobalt (Co)	2009/08/12		96	%	75 - 125
			Total Copper (Cu)	2009/08/12		79	%	72 - 127
			Total Lead (Pb)	2009/08/12		86	%	65 - 135
			Total Mercury (Hg)	2009/08/12		84	%	75 - 125
			Total Nickel (Ni)	2009/08/12		90	%	75 - 125
			Total Vanadium (V)	2009/08/12		67	%	60 - 140
			Total Zinc (Zn)	2009/08/12		84	%	74 - 125
		Method Blank	Total Antimony (Sb)	2009/08/12	<1		mg/kg	
			Total Arsenic (As)	2009/08/12	<1		mg/kg	
			Total Barium (Ba)	2009/08/12	<10		mg/kg	
			Total Beryllium (Be)	2009/08/12	<0.4		mg/kg	
			Total Cadmium (Cd)	2009/08/12	<0.1		mg/kg	
			Total Chromium (Cr)	2009/08/12	<1		mg/kg	
			Total Cobalt (Co)	2009/08/12	<1		mg/kg	
			Total Copper (Cu)	2009/08/12	<5		mg/kg	
			Total Lead (Pb)	2009/08/12	<1		mg/kg	
			Total Mercury (Hg)	2009/08/12	<0.05		mg/kg	
			Total Molybdenum (Mo)	2009/08/12	<0.4		mg/kg	
			Total Nickel (Ni)	2009/08/12	<1		mg/kg	
			Total Selenium (Se)	2009/08/12	<0.5		mg/kg	
			Total Silver (Ag)	2009/08/12	<1		mg/kg	
			Total Thallium (Tl)	2009/08/12	<0.3		mg/kg	
			Total Tin (Sn)	2009/08/12	<1		mg/kg	
			Total Uranium (U)	2009/08/12	<1		mg/kg	
			Total Vanadium (V)	2009/08/12	<1		mg/kg	
			Total Zinc (Zn)	2009/08/12	<10		mg/kg	
		RPD [Q18459-01]	Total Antimony (Sb)	2009/08/13	NC		%	35
			Total Arsenic (As)	2009/08/13	3.9		%	35
			Total Barium (Ba)	2009/08/13	15.7		%	35
			Total Beryllium (Be)	2009/08/13	NC		%	35
			Total Cadmium (Cd)	2009/08/13	2.0		%	35
			Total Chromium (Cr)	2009/08/13	18.7		%	35
			Total Cobalt (Co)	2009/08/13	12.4		%	35
			Total Copper (Cu)	2009/08/13	12.6		%	35
			Total Lead (Pb)	2009/08/13	33.6		%	35
			Total Mercury (Hg)	2009/08/13	NC		%	35
			Total Molybdenum (Mo)	2009/08/13	NC		%	35
			Total Nickel (Ni)	2009/08/13	8.3		%	35
			Total Selenium (Se)	2009/08/13	NC		%	35
			Total Silver (Ag)	2009/08/13	43.8 (1)		%	35
			Total Thallium (Tl)	2009/08/13	NC		%	35
			Total Tin (Sn)	2009/08/13	NC		%	35
			Total Uranium (U)	2009/08/13	NC		%	35
			Total Vanadium (V)	2009/08/13	0.8		%	35
			Total Zinc (Zn)	2009/08/13	12.4		%	35
3342451	SG8	Matrix Spike [Q18460-01]	Soluble (Hot water) Boron (B)	2009/08/12		97	%	75 - 125
		Spiked Blank	Soluble (Hot water) Boron (B)	2009/08/12		97	%	85 - 115
		Method Blank	Soluble (Hot water) Boron (B)	2009/08/12	<0.1		mg/kg	
		RPD [Q18460-01]	Soluble (Hot water) Boron (B)	2009/08/12	NC		%	35
3343205	AR6	Spiked Blank	F4SG (Heavy Hydrocarbons-Grav.)	2009/08/13		109	%	70 - 130
		Method Blank	F4SG (Heavy Hydrocarbons-Grav.)	2009/08/13	<500		mg/kg	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: ROBERTO BAY
P.O. #:
Site Reference: 34807

Quality Assurance Report (Continued)

Maxxam Job Number: EA942132

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Your Project #: 34807
Site: ROBERTS BAY
Your C.O.C. #: 78330, 78331

Attention: HENRY WONG
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
ON
CANADA L4B 3N4

Report Date: 2009/08/20

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A944148
Received: 2009/08/19, 9:50

Sample Matrix: Soil
Samples Received: 13

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Boron (Hot Water Soluble)	1	2009/08/20	2009/08/20	CAL SOP-00192	EPA SW846/6010B
BTEX/F1 by HS GC/MS (MeOH extract)	12	2009/08/19	2009/08/19	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
Hexavalent Chromium	1	2009/08/20	2009/08/20	EENVSOP-00131	SM 3500-Cr B
CCME Hydrocarbons (F2-F4 in soil)	12	2009/08/19	2009/08/19	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
CCME Hydrocarbons (F4G in soil)	1	2009/08/20	2009/08/20	EENVSOP-00121	CWS PHCS Tier 1
Elements by ICPMS - Soils	1	2009/08/20	2009/08/20	CAL SOP-00191	EPA SW-846-6020A
Moisture	13	N/A	2009/08/19	EENVSOP-00139	Carter SSMA 51.2

Encryption Key

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

SHELYCE MORRISON, Project Manager
Email: shelyce.morrison@maxxamanalytics.com
Phone# (780) 577-7115 Ext:7115

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A944148
Report Date: 2009/08/20

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: CG

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q31185	Q31187	Q31188	Q31189		
Sampling Date		2009/08/17	2009/08/17	2009/08/17	2009/08/17		
COC Number		78330	78330	78330	78330		
	Units	**251**	**252**	**253**	**254**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	10	11	10	9.1	0.3	3359712
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	55	<10	<10	10	3359438
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	36	26	58	10	3359438
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	13	10	3359438
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3359438
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3359092
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3359092
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.012	0.010	3359092
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	0.22	0.040	3359092
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	0.10	0.040	3359092
o-Xylene	mg/kg	<0.020	<0.020	<0.020	0.12	0.020	3359092
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	12	3359092
(C6-C10)	mg/kg	<12	<12	<12	<12	12	3359092
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	102	105	102	103		3359092
D10-ETHYLBENZENE (sur.)	%	84	80	90	85		3359092
D4-1,2-DICHLOROETHANE (sur.)	%	84	105	82	88		3359092
D8-TOLUENE (sur.)	%	107	101	106	106		3359092
O-TERPHENYL (sur.)	%	87	90	91	93		3359438

RDL = Reportable Detection Limit

Maxxam Job #: A944148
Report Date: 2009/08/20

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: CG

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q31190	Q31191	Q31192	Q31193		
Sampling Date		2009/08/17	2009/08/17	2009/08/17	2009/08/17		
COC Number		78330	78330	78330	78330		
	Units	**255**	**256**	**257**	**258**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	13	9.1	9.4	9.8	0.3	3359712
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	19	2700	<10	<10	10	3359438
F3 (C16-C34 Hydrocarbons)	mg/kg	110	20000	<10	11	10	3359438
F4 (C34-C50 Hydrocarbons)	mg/kg	31	990	<10	<10	10	3359438
Reached Baseline at C50	mg/kg	Yes	No	Yes	Yes		3359438
OIL & GREASE							
F4SG (Heavy Hydrocarbons-Grav.)	mg/kg		19000			500	3360480
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3359092
Toluene	mg/kg	<0.020	0.058	<0.020	<0.020	0.020	3359092
Ethylbenzene	mg/kg	0.049	0.32	<0.010	<0.010	0.010	3359092
Xylenes (Total)	mg/kg	1.0	3.4	<0.040	<0.040	0.040	3359092
m & p-Xylene	mg/kg	0.55	1.8	<0.040	<0.040	0.040	3359092
o-Xylene	mg/kg	0.48	1.6	<0.020	<0.020	0.020	3359092
F1 (C6-C10) - BTEX	mg/kg	<12	250	<12	<12	12	3359092
(C6-C10)	mg/kg	<12	250	<12	<12	12	3359092
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	99	125	105	103		3359092
D10-ETHYLBENZENE (sur.)	%	90	87	88	88		3359092
D4-1,2-DICHLOROETHANE (sur.)	%	82	85	81	81		3359092
D8-TOLUENE (sur.)	%	106	105	108	107		3359092
O-TERPHENYL (sur.)	%	95	113	93	92		3359438

RDL = Reportable Detection Limit

Maxxam Analytics

Maxxam Job #: A944148
Report Date: 2009/08/20

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: CG

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q31194	Q31195	Q31196	Q31197		
Sampling Date		2009/08/17	2009/08/17	2009/08/17	2009/08/17		
COC Number		78330	78330	78330	78330		
	Units	**259**	**260**	**261**	**262**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	18	18	16	14	0.3	3359712
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	21	25	<10	59	10	3359438
F3 (C16-C34 Hydrocarbons)	mg/kg	140	19	37	190	10	3359438
F4 (C34-C50 Hydrocarbons)	mg/kg	16	<10	<10	12	10	3359438
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3359438
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3359092
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3359092
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3359092
Xylenes (Total)	mg/kg	<0.040	0.17	<0.040	<0.040	0.040	3359092
m & p-Xylene	mg/kg	<0.040	0.094	<0.040	<0.040	0.040	3359092
o-Xylene	mg/kg	<0.020	0.080	<0.020	<0.020	0.020	3359092
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	12	3359092
(C6-C10)	mg/kg	<12	<12	<12	<12	12	3359092
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	101	104	102	101		3359092
D10-ETHYLBENZENE (sur.)	%	82	88	89	86		3359092
D4-1,2-DICHLOROETHANE (sur.)	%	82	82	82	81		3359092
D8-TOLUENE (sur.)	%	105	107	106	107		3359092
O-TERPHENYL (sur.)	%	93	92	105	97		3359438

RDL = Reportable Detection Limit

Maxxam Job #: A944148
Report Date: 2009/08/20

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: CG

REGULATED METALS (CCME/AT1)

Maxxam ID		Q31198		
Sampling Date		2009/08/17		
COC Number		78331		
	Units	**V09-228 R**	**RDL**	**QC Batch**
Elements				
Soluble (Hot water) Boron (B)	mg/kg	1.7	0.1	3363045
Hex. Chromium (Cr 6+)	mg/kg	<0.15	0.15	3360007
Total Antimony (Sb)	mg/kg	1	1	3361774
Total Arsenic (As)	mg/kg	48	1	3361774
Total Barium (Ba)	mg/kg	100	10	3361774
Total Beryllium (Be)	mg/kg	<0.4	0.4	3361774
Total Cadmium (Cd)	mg/kg	<0.1	0.1	3361774
Total Chromium (Cr)	mg/kg	41	1	3361774
Total Cobalt (Co)	mg/kg	13	1	3361774
Total Copper (Cu)	mg/kg	78	5	3361774
Total Lead (Pb)	mg/kg	36	1	3361774
Total Mercury (Hg)	mg/kg	0.06	0.05	3361774
Total Molybdenum (Mo)	mg/kg	1.0	0.4	3361774
Total Nickel (Ni)	mg/kg	38	1	3361774
Total Selenium (Se)	mg/kg	0.6	0.5	3361774
Total Silver (Ag)	mg/kg	10	1	3361774
Total Thallium (Tl)	mg/kg	<0.3	0.3	3361774
Total Tin (Sn)	mg/kg	<1	1	3361774
Total Uranium (U)	mg/kg	<1	1	3361774
Total Vanadium (V)	mg/kg	47	1	3361774
Total Zinc (Zn)	mg/kg	75	10	3361774

RDL = Reportable Detection Limit

Maxxam Job #: A944148
Report Date: 2009/08/20

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: CG

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		Q31198		
Sampling Date		2009/08/17		
COC Number		78331		
	Units	**V09-228 R**	**RDL**	**QC Batch**
Physical Properties				
Moisture	%	23	0.3	3359712

RDL = Reportable Detection Limit

General Comments

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807
P.O. #:
Site Reference: ROBERTS BAY

Quality Assurance Report

Maxxam Job Number: EA944148

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3359092	CC6	Matrix Spike [Q31187-01]	4-BROMOFLUOROBENZENE (sur.)	2009/08/19		103	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/19		87	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/19		85	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/19		107	%	60 - 140
			Benzene	2009/08/19		92	%	60 - 140
			Toluene	2009/08/19		92	%	60 - 140
			Ethylbenzene	2009/08/19		95	%	60 - 140
			m & p-Xylene	2009/08/19		96	%	60 - 140
			o-Xylene	2009/08/19		91	%	60 - 140
			(C6-C10)	2009/08/19		104	%	60 - 140
		Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/19		102	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/19		94	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/19		85	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/19		105	%	60 - 140
			Benzene	2009/08/19		92	%	60 - 140
			Toluene	2009/08/19		94	%	60 - 140
			Ethylbenzene	2009/08/19		95	%	60 - 140
			m & p-Xylene	2009/08/19		94	%	60 - 140
			o-Xylene	2009/08/19		92	%	60 - 140
			(C6-C10)	2009/08/19		108	%	80 - 120
		Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/19		102	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/19		94	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/19		81	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/19		107	%	60 - 140
			Benzene	2009/08/19	<0.0050		mg/kg	
			Toluene	2009/08/19	<0.020		mg/kg	
			Ethylbenzene	2009/08/19	<0.010		mg/kg	
			Xylenes (Total)	2009/08/19	<0.040		mg/kg	
			m & p-Xylene	2009/08/19	<0.040		mg/kg	
			o-Xylene	2009/08/19	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/08/19	<12		mg/kg	
			(C6-C10)	2009/08/19	<12		mg/kg	
		RPD [Q31185-01]	Benzene	2009/08/19	NC		%	50
			Toluene	2009/08/19	NC		%	50
			Ethylbenzene	2009/08/19	NC		%	50
			Xylenes (Total)	2009/08/19	NC		%	50
			m & p-Xylene	2009/08/19	NC		%	50
			o-Xylene	2009/08/19	NC		%	50
			F1 (C6-C10) - BTEX	2009/08/19	NC		%	50
			(C6-C10)	2009/08/19	NC		%	50
3359438	MB7	Matrix Spike [Q31187-01]	O-TERPHENYL (sur.)	2009/08/19		98	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/19		88	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/08/19		95	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/08/19		109	%	50 - 130
		Spiked Blank	O-TERPHENYL (sur.)	2009/08/19		96	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/19		91	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/08/19		98	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/08/19		111	%	80 - 120
		Method Blank	O-TERPHENYL (sur.)	2009/08/19		104	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/19	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/08/19	<10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/08/19	<10		mg/kg	
		RPD [Q31185-01]	F2 (C10-C16 Hydrocarbons)	2009/08/19	NC		%	50

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807
P.O. #:
Site Reference: ROBERTS BAY

Quality Assurance Report (Continued)

Maxxam Job Number: EA944148

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3359438	MB7	RPD [Q31185-01]	F3 (C16-C34 Hydrocarbons)	2009/08/19	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/19	NC		%	50
3359712	SR7	Method Blank	Moisture	2009/08/19	<0.3		%	
		RPD [Q31185-01]	Moisture	2009/08/19	0		%	20
3360007	AL2	Spiked Blank	Hex. Chromium (Cr 6+)	2009/08/20		102	%	80 - 120
		Method Blank	Hex. Chromium (Cr 6+)	2009/08/20	<0.15		mg/kg	
		RPD	Hex. Chromium (Cr 6+)	2009/08/20	NC		%	35
3360480	AR6	Spiked Blank	F4SG (Heavy Hydrocarbons-Grav.)	2009/08/20		99	%	70 - 130
		Method Blank	F4SG (Heavy Hydrocarbons-Grav.)	2009/08/20	<500		mg/kg	
		RPD	F4SG (Heavy Hydrocarbons-Grav.)	2009/08/20	9.2		%	50
3361774	AS7	Calibration Check	Total Antimony (Sb)	2009/08/20		98	%	80 - 120
			Total Arsenic (As)	2009/08/20		83	%	80 - 120
			Total Barium (Ba)	2009/08/20		83	%	80 - 120
			Total Beryllium (Be)	2009/08/20		88	%	80 - 120
			Total Cadmium (Cd)	2009/08/20		87	%	80 - 120
			Total Chromium (Cr)	2009/08/20		83	%	80 - 120
			Total Cobalt (Co)	2009/08/20		83	%	80 - 120
			Total Copper (Cu)	2009/08/20		84	%	80 - 120
			Total Lead (Pb)	2009/08/20		84	%	80 - 120
			Total Mercury (Hg)	2009/08/20		95	%	80 - 120
			Total Molybdenum (Mo)	2009/08/20		85	%	80 - 120
			Total Nickel (Ni)	2009/08/20		83	%	80 - 120
			Total Selenium (Se)	2009/08/20		84	%	80 - 120
			Total Silver (Ag)	2009/08/20		83	%	80 - 120
			Total Thallium (Tl)	2009/08/20		84	%	80 - 120
			Total Tin (Sn)	2009/08/20		84	%	80 - 120
			Total Uranium (U)	2009/08/20		91	%	80 - 120
			Total Vanadium (V)	2009/08/20		84	%	80 - 120
			Total Zinc (Zn)	2009/08/20		87	%	80 - 120
		Matrix Spike	Total Antimony (Sb)	2009/08/20		75	%	75 - 125
			Total Arsenic (As)	2009/08/20		101	%	75 - 125
			Total Barium (Ba)	2009/08/20		116	%	75 - 125
			Total Beryllium (Be)	2009/08/20		87	%	75 - 125
			Total Cadmium (Cd)	2009/08/20		104	%	75 - 125
			Total Chromium (Cr)	2009/08/20		89	%	75 - 125
			Total Cobalt (Co)	2009/08/20		98	%	75 - 125
			Total Copper (Cu)	2009/08/20		102	%	75 - 125
			Total Lead (Pb)	2009/08/20		100	%	75 - 125
			Total Mercury (Hg)	2009/08/20		114	%	75 - 125
			Total Molybdenum (Mo)	2009/08/20		103	%	75 - 125
			Total Nickel (Ni)	2009/08/20		93	%	75 - 125
			Total Selenium (Se)	2009/08/20		98	%	75 - 125
			Total Silver (Ag)	2009/08/20		97	%	75 - 125
			Total Thallium (Tl)	2009/08/20		98	%	75 - 125
			Total Tin (Sn)	2009/08/20		105	%	75 - 125
			Total Uranium (U)	2009/08/20		102	%	75 - 125
			Total Vanadium (V)	2009/08/20		104	%	75 - 125
			Total Zinc (Zn)	2009/08/20		108	%	75 - 125
		QC Standard	Total Arsenic (As)	2009/08/20		92	%	72 - 128
			Total Barium (Ba)	2009/08/20		88	%	67 - 132
			Total Chromium (Cr)	2009/08/20		62	%	50 - 150
			Total Cobalt (Co)	2009/08/20		98	%	75 - 125
			Total Copper (Cu)	2009/08/20		80	%	72 - 127
			Total Lead (Pb)	2009/08/20		84	%	65 - 135
			Total Mercury (Hg)	2009/08/20		93	%	75 - 125

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807
P.O. #:
Site Reference: ROBERTS BAY

Quality Assurance Report (Continued)

Maxxam Job Number: EA944148

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3361774	AS7	QC Standard	Total Nickel (Ni)	2009/08/20		92	%	75 - 125
			Total Vanadium (V)	2009/08/20		76	%	60 - 140
			Total Zinc (Zn)	2009/08/20		82	%	74 - 125
		Method Blank	Total Antimony (Sb)	2009/08/20	<1		mg/kg	
			Total Arsenic (As)	2009/08/20	<1		mg/kg	
			Total Barium (Ba)	2009/08/20	<10		mg/kg	
			Total Beryllium (Be)	2009/08/20	<0.4		mg/kg	
			Total Cadmium (Cd)	2009/08/20	<0.1		mg/kg	
			Total Chromium (Cr)	2009/08/20	<1		mg/kg	
			Total Cobalt (Co)	2009/08/20	<1		mg/kg	
			Total Copper (Cu)	2009/08/20	<5		mg/kg	
			Total Lead (Pb)	2009/08/20	<1		mg/kg	
			Total Mercury (Hg)	2009/08/20	<0.05		mg/kg	
			Total Molybdenum (Mo)	2009/08/20	<0.4		mg/kg	
			Total Nickel (Ni)	2009/08/20	<1		mg/kg	
			Total Selenium (Se)	2009/08/20	<0.5		mg/kg	
			Total Silver (Ag)	2009/08/20	<1		mg/kg	
			Total Thallium (Tl)	2009/08/20	<0.3		mg/kg	
			Total Tin (Sn)	2009/08/20	<1		mg/kg	
			Total Uranium (U)	2009/08/20	<1		mg/kg	
			Total Vanadium (V)	2009/08/20	<1		mg/kg	
			Total Zinc (Zn)	2009/08/20	<10		mg/kg	
		RPD	Total Antimony (Sb)	2009/08/20	NC		%	35
			Total Arsenic (As)	2009/08/20	6.5		%	35
			Total Barium (Ba)	2009/08/20	0.9		%	35
			Total Beryllium (Be)	2009/08/20	NC		%	35
			Total Cadmium (Cd)	2009/08/20	NC		%	35
			Total Chromium (Cr)	2009/08/20	18.2		%	35
			Total Cobalt (Co)	2009/08/20	9.6		%	35
			Total Copper (Cu)	2009/08/20	7.2		%	35
			Total Lead (Pb)	2009/08/20	4.3		%	35
			Total Mercury (Hg)	2009/08/20	NC		%	35
			Total Molybdenum (Mo)	2009/08/20	NC		%	35
			Total Nickel (Ni)	2009/08/20	10.3		%	35
			Total Selenium (Se)	2009/08/20	NC		%	35
			Total Silver (Ag)	2009/08/20	NC		%	35
			Total Thallium (Tl)	2009/08/20	NC		%	35
			Total Tin (Sn)	2009/08/20	NC		%	35
			Total Uranium (U)	2009/08/20	NC		%	35
			Total Vanadium (V)	2009/08/20	1.7		%	35
			Total Zinc (Zn)	2009/08/20	3.9		%	35
3363045	RI3	Spiked Blank	Soluble (Hot water) Boron (B)	2009/08/20		98	%	85 - 115
		Method Blank	Soluble (Hot water) Boron (B)	2009/08/20	<0.1		mg/kg	
		RPD	Soluble (Hot water) Boron (B)	2009/08/20	NC		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

236

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

78330 **CHAIN OF CUSTODY** Page: 1 of 2

A944148 JA/AS

Invoice To: Require Report? Yes [X] No [ ]

Company Name: SENES
Contact Name: Henry Wong
Address:
Prov: NT PC:
Contact #s: Ph: (867) 445-2288 Fax:

Report To:

Henry Wong
hwong@dcsltd.ca
Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #: DCS 2009 Standing Offer
Project #: 34807
Project Name: Roberts Bay
Location:
Sampler's Initials: C. G.

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
[ ] AT1
[X] CCME Tier 1 - Residential
[ ] OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S):
hwong@dcsltd.ca

SERVICE REQUESTED:
[X] RUSH (Please ensure you contact the lab to reserve)
Date Required: Aug 20/2009
[ ] REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter / Flashpoint / pH (1:1)	TCLP / BTEX / Metals	WATERS: BTEX F1 / VOCs	BTEX F1-F2 / BTEX F1-F4	Routine Water Package / Turb / F	REGULATED METALS (CCME / AT1)[3]: Total Preserved / Not Preserved	Dissolved Preserved / Not Preserved Filtered / Not Filtered	Mercury: Total / Dissolved	Ammonia / TKN / COD	TOC / DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	251	S	Aug 17/2009	X																	1
2	252	"	"	X																	1
3	253	"	"	X																	1
4	254	"	"	X																	1
5	255	"	"	X																	1
6	256	"	"	X																	1
7	257	"	"	X																	1
8	258	"	"	X																	1
9	259	"	"	X																	1
10	260	"	"	X																	1
11	261	"	"	X																	1
12	262	"	"	X																	1

ARRIVED AT DEPOT:
AUG 18 2009
TEMP: 18 18 18

1249

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: Henry Wong Date/Time: Aug 18/2009
Sign and Print: Henry Wong
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	Aug 19 '09 MA 9:50	7	7	7	
	CUSTODY SEAL YES / NO				

236

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

78331 **CHAIN OF CUSTODY**

A944148 JA/1 | Page: 2 of 2

Invoice To: Require Report? Yes ☐ No ☐	**Report To:**	
Company Name: SENES	Henry Wong	PO # / AFE #:
Contact Name: Henry Wong	hwong@dcsltd.ca	Quotation #:
Address:		Project #:
Prov: NT PC:	Prov: PC:	Project Name:
Contact #s: Ph (867) 445-2288	Ph: Fax:	Location:
		Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
☐ AT1
☒ CCME Tier 1 - Residential
☐ OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S): hwong@dcsltd.ca

SERVICE REQUESTED:
☒ **RUSH** (Please ensure you contact the lab to reserve)
Date Required: Aug 20/2009
☐ REGULAR ~~Turnaround~~ (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter ☐ Flashpoint ☐ pH (1:1)	TCLP ☐ BTEX ☐ Metals	WATERS: ☐ BTEX F1 ☐ VOCs	☐ BTEX F1-F2 ☐ BTEX F1-F4	Routine Water Package ☐ Turb ☐ F	REGULATED METALS (CCME / AT1)[3] Total ☐ Preserved ☐ Not Preserved	Dissolved ☐ Preserved ☐ Not Preserved ☐ Filtered ☐ Not Filtered	Mercury ☐ Total ☐ Dissolved	☐ Ammonia ☐ TKN ☐ COD	☐ TOC ☐ DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	V09 - 228 R	S	Aug 17/2009				X														1
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ARRIVED AT DEPOT:
AUG 18 2009
12:19:19

1240 TEMP

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: Henry Wong **Date/Time:** Aug 18/2009
Sign and Print: Henry Wong
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	Aug 19 09 MG 9:50	7	7	7	
	CUSTODY SEAL YES / NO				

Your Project #: ROBERTS BAY

Attention: LAWRENCE BOROWSKI
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
ON
CANADA L4B 3N4

Report Date: 2009/08/22

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A944714
Received: 2009/08/21, 7:50

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Boron (Hot Water Soluble)	1	2009/08/22	2009/08/22	CAL SOP-00192	EPA SW846/6010B
BTEX/F1 by HS GC/MS (MeOH extract)	6	2009/08/21	2009/08/21	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
Hexavalent Chromium	1	2009/08/21	2009/08/21	EENVSOP-00131	SM 3500-Cr B
CCME Hydrocarbons (F2-F4 in soil)	6	2009/08/21	2009/08/21	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
Elements by ICPMS - Soils	1	2009/08/22	2009/08/22	CAL SOP-00191	EPA SW-846-6020A
Moisture	6	N/A	2009/08/21	EENVSOP-00139	Carter SSMA 51.2

Encryption Key

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

SHELYCE MORRISON, Project Manager
Email: shelyce.morrison@maxxamanalytics.com
Phone# (780) 577-7115 Ext:7115

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A944714
Report Date: 2009/08/22

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q34800		Q34801	Q34802		
Sampling Date							
	Units	**V09-SW1**	**RDL**	**V09-B1**	**V09-G1**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	61	0.3	20	8.2	0.3	3364931
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	27	10	<10	<10	10	3364178
F3 (C16-C34 Hydrocarbons)	mg/kg	1600	10	<10	<10	10	3364178
F4 (C34-C50 Hydrocarbons)	mg/kg	740	10	19	<10	10	3364178
Reached Baseline at C50	mg/kg	Yes		Yes	Yes		3364178
Volatiles							
Benzene	mg/kg	<0.013	0.013	<0.0050	<0.0050	0.0050	3360382
Toluene	mg/kg	<0.051	0.051	<0.020	<0.020	0.020	3360382
Ethylbenzene	mg/kg	<0.025	0.025	<0.010	<0.010	0.010	3360382
Xylenes (Total)	mg/kg	<0.10	0.10	<0.040	<0.040	0.040	3360382
m & p-Xylene	mg/kg	<0.10	0.10	<0.040	<0.040	0.040	3360382
o-Xylene	mg/kg	<0.051	0.051	<0.020	<0.020	0.020	3360382
F1 (C6-C10) - BTEX	mg/kg	<31	31	<12	<12	12	3360382
(C6-C10)	mg/kg	<31	31	<12	<12	12	3360382
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	105		106	106		3360382
D10-ETHYLBENZENE (sur.)	%	112		103	101		3360382
D4-1,2-DICHLOROETHANE (sur.)	%	104		103	105		3360382
D8-TOLUENE (sur.)	%	105		103	103		3360382
O-TERPHENYL (sur.)	%	83		78	76		3364178

RDL = Reportable Detection Limit

Maxxam Job #: A944714
Report Date: 2009/08/22

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q34803	Q34804	Q34805		
Sampling Date						
	Units	**V09-G2**	**V09-G3**	**V09-G4**	**RDL**	**QC Batch**
Physical Properties						
Moisture	%	13	7.2	9.7	0.3	3364931
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	750	14	430	10	3364178
F3 (C16-C34 Hydrocarbons)	mg/kg	190	<10	120	10	3364178
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	<10	10	3364178
Reached Baseline at C50	mg/kg	Yes	Yes	Yes		3364178
Volatiles						
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	0.0050	3362341
Toluene	mg/kg	<0.020	<0.020	<0.020	0.020	3362341
Ethylbenzene	mg/kg	0.050	<0.010	0.030	0.010	3362341
Xylenes (Total)	mg/kg	0.49	<0.040	1.4	0.040	3362341
m & p-Xylene	mg/kg	0.31	<0.040	0.77	0.040	3362341
o-Xylene	mg/kg	0.18	<0.020	0.60	0.020	3362341
F1 (C6-C10) - BTEX	mg/kg	28	<12	64	12	3362341
(C6-C10)	mg/kg	29	<12	65	12	3362341
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	105	101	113		3362341
D10-ETHYLBENZENE (sur.)	%	111	101	109		3362341
D4-1,2-DICHLOROETHANE (sur.)	%	97	103	103		3362341
D8-TOLUENE (sur.)	%	105	103	101		3362341
O-TERPHENYL (sur.)	%	87	80	84		3364178

RDL = Reportable Detection Limit

Maxxam Job #: A944714
Report Date: 2009/08/22

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

REGULATED METALS (CCME/AT1)

Maxxam ID		Q34800		
Sampling Date				
	Units	**V09-SW1**	**RDL**	**QC Batch**
Elements				
Soluble (Hot water) Boron (B)	mg/kg	0.8 (1)	0.2	3366186
Hex. Chromium (Cr 6+)	mg/kg	<0.15	0.15	3364646
Total Antimony (Sb)	mg/kg	<2	2	3364376
Total Arsenic (As)	mg/kg	4	2	3364376
Total Barium (Ba)	mg/kg	150	20	3364376
Total Beryllium (Be)	mg/kg	<0.8	0.8	3364376
Total Cadmium (Cd)	mg/kg	0.2	0.2	3364376
Total Chromium (Cr)	mg/kg	43	2	3364376
Total Cobalt (Co)	mg/kg	13	2	3364376
Total Copper (Cu)	mg/kg	44	10	3364376
Total Lead (Pb)	mg/kg	6	2	3364376
Total Mercury (Hg)	mg/kg	<0.1	0.1	3364376
Total Molybdenum (Mo)	mg/kg	2.2	0.8	3364376
Total Nickel (Ni)	mg/kg	24	2	3364376
Total Selenium (Se)	mg/kg	<1	1	3364376
Total Silver (Ag)	mg/kg	<2	2	3364376
Total Thallium (Tl)	mg/kg	<0.6	0.6	3364376
Total Tin (Sn)	mg/kg	<2	2	3364376
Total Uranium (U)	mg/kg	<2	2	3364376
Total Vanadium (V)	mg/kg	51	2	3364376
Total Zinc (Zn)	mg/kg	59	20	3364376

RDL = Reportable Detection Limit
(1) Detection limits raised due to sample matrix.

Maxxam Job #: A944714
Report Date: 2009/08/22

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

General Comments

Sample Q34800-01: Btex/F1 Detection limits raised due to high moisture content. Sample contained > 50 wt% moisture.

Detection limits raised due to sample matrix.
Parameters affected are Cr, Co, Cu, Pb, Sb, Mo, Ni, Se, Ag, As, Tl, Sn, U, V, Zn, Be, Hg, Cd.

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EA944714

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3360382 DR3	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2009/08/20		103	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/20		111	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/20		85	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/20		105	%	60 - 140
		Benzene	2009/08/20		93	%	60 - 140
		Toluene	2009/08/20		103	%	60 - 140
		Ethylbenzene	2009/08/20		107	%	60 - 140
		m & p-Xylene	2009/08/20		109	%	60 - 140
		o-Xylene	2009/08/20		118	%	60 - 140
		(C6-C10)	2009/08/20		120	%	60 - 140
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/20		100	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/20		86	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/20		110	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/20		92	%	60 - 140
		Benzene	2009/08/20		91	%	60 - 140
		Toluene	2009/08/20		89	%	60 - 140
		Ethylbenzene	2009/08/20		100	%	60 - 140
		m & p-Xylene	2009/08/20		93	%	60 - 140
		o-Xylene	2009/08/20		100	%	60 - 140
		(C6-C10)	2009/08/20		111	%	80 - 120
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/20		96	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/20		93	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/20		111	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/20		96	%	60 - 140
		Benzene	2009/08/20	<0.0050		mg/kg	
		Toluene	2009/08/20	<0.020		mg/kg	
		Ethylbenzene	2009/08/20	<0.010		mg/kg	
		Xylenes (Total)	2009/08/20	<0.040		mg/kg	
		m & p-Xylene	2009/08/20	<0.040		mg/kg	
		o-Xylene	2009/08/20	<0.020		mg/kg	
		F1 (C6-C10) - BTEX	2009/08/20	<12		mg/kg	
		(C6-C10)	2009/08/20	<12		mg/kg	
	RPD	Benzene	2009/08/20	NC		%	50
		Toluene	2009/08/20	NC		%	50
		Ethylbenzene	2009/08/20	NC		%	50
		Xylenes (Total)	2009/08/20	NC		%	50
		m & p-Xylene	2009/08/20	NC		%	50
		o-Xylene	2009/08/20	NC		%	50
		F1 (C6-C10) - BTEX	2009/08/20	NC		%	50
		(C6-C10)	2009/08/20	NC		%	50
3362341 DR3	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2009/08/20		109	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/20		93	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/20		115	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/20		99	%	60 - 140
		Benzene	2009/08/20		103	%	60 - 140
		Toluene	2009/08/20		89	%	60 - 140
		Ethylbenzene	2009/08/20		95	%	60 - 140
		m & p-Xylene	2009/08/20		96	%	60 - 140
		o-Xylene	2009/08/20		98	%	60 - 140
		(C6-C10)	2009/08/20		92	%	60 - 140
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/20		105	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/20		95	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/20		98	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/20		101	%	60 - 140
		Benzene	2009/08/20		96	%	60 - 140

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA944714

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3362341	DR3	Spiked Blank	Toluene	2009/08/20		88	%	60 - 140
			Ethylbenzene	2009/08/20		98	%	60 - 140
			m & p-Xylene	2009/08/20		100	%	60 - 140
			o-Xylene	2009/08/20		98	%	60 - 140
			(C6-C10)	2009/08/20		101	%	80 - 120
		Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/20		101	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/20		91	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/20		98	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/20		103	%	60 - 140
			Benzene	2009/08/20	<0.0050		mg/kg	
			Toluene	2009/08/20	<0.020		mg/kg	
			Ethylbenzene	2009/08/20	<0.010		mg/kg	
			Xylenes (Total)	2009/08/20	<0.040		mg/kg	
			m & p-Xylene	2009/08/20	<0.040		mg/kg	
			o-Xylene	2009/08/20	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/08/20	<12		mg/kg	
			(C6-C10)	2009/08/20	<12		mg/kg	
		RPD	Benzene	2009/08/20	NC		%	50
			Toluene	2009/08/20	NC		%	50
			Ethylbenzene	2009/08/20	NC		%	50
			Xylenes (Total)	2009/08/20	NC		%	50
			m & p-Xylene	2009/08/20	NC		%	50
			o-Xylene	2009/08/20	NC		%	50
			F1 (C6-C10) - BTEX	2009/08/20	NC		%	50
			(C6-C10)	2009/08/20	NC		%	50
3364178	KO	Matrix Spike	O-TERPHENYL (sur.)	2009/08/21		78	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/21		NC	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/08/21		92	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/08/21		88	%	50 - 130
		Spiked Blank	O-TERPHENYL (sur.)	2009/08/21		91	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/21		100	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/08/21		96	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/08/21		96	%	80 - 120
		Method Blank	O-TERPHENYL (sur.)	2009/08/21		92	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/21	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/08/21	<10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/08/21	<10		mg/kg	
		RPD	F2 (C10-C16 Hydrocarbons)	2009/08/21	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/08/21	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/21	NC		%	50
3364376	AS7	Calibration Check	Total Antimony (Sb)	2009/08/21		102	%	80 - 120
			Total Arsenic (As)	2009/08/21		89	%	80 - 120
			Total Barium (Ba)	2009/08/21		89	%	80 - 120
			Total Beryllium (Be)	2009/08/21		104	%	80 - 120
			Total Cadmium (Cd)	2009/08/21		94	%	80 - 120
			Total Chromium (Cr)	2009/08/21		92	%	80 - 120
			Total Cobalt (Co)	2009/08/21		93	%	80 - 120
			Total Copper (Cu)	2009/08/21		95	%	80 - 120
			Total Lead (Pb)	2009/08/21		99	%	80 - 120
			Total Mercury (Hg)	2009/08/21		81	%	80 - 120
			Total Molybdenum (Mo)	2009/08/21		93	%	80 - 120
			Total Nickel (Ni)	2009/08/21		92	%	80 - 120
			Total Selenium (Se)	2009/08/21		88	%	80 - 120
			Total Silver (Ag)	2009/08/21		95	%	80 - 120
			Total Thallium (Tl)	2009/08/21		97	%	80 - 120

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA944714

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3364376	AS7	Calibration Check	Total Tin (Sn)	2009/08/21		94	%	80 - 120
			Total Uranium (U)	2009/08/21		102	%	80 - 120
			Total Vanadium (V)	2009/08/21		93	%	80 - 120
			Total Zinc (Zn)	2009/08/21		115	%	80 - 120
		Matrix Spike	Total Arsenic (As)	2009/08/21		94	%	75 - 125
			Total Barium (Ba)	2009/08/21		111	%	75 - 125
			Total Beryllium (Be)	2009/08/21		97	%	75 - 125
			Total Cadmium (Cd)	2009/08/21		96	%	75 - 125
			Total Chromium (Cr)	2009/08/21		92	%	75 - 125
			Total Cobalt (Co)	2009/08/21		91	%	75 - 125
			Total Copper (Cu)	2009/08/21		88	%	75 - 125
			Total Lead (Pb)	2009/08/21		98	%	75 - 125
			Total Mercury (Hg)	2009/08/21		85	%	75 - 125
			Total Molybdenum (Mo)	2009/08/21		94	%	75 - 125
			Total Nickel (Ni)	2009/08/21		86	%	75 - 125
			Total Selenium (Se)	2009/08/21		96	%	75 - 125
			Total Silver (Ag)	2009/08/21		95	%	75 - 125
			Total Thallium (Tl)	2009/08/21		98	%	75 - 125
			Total Tin (Sn)	2009/08/21		97	%	75 - 125
			Total Uranium (U)	2009/08/21		100	%	75 - 125
			Total Vanadium (V)	2009/08/21		101	%	75 - 125
			Total Zinc (Zn)	2009/08/21		87	%	75 - 125
		QC Standard	Total Arsenic (As)	2009/08/21		107	%	72 - 128
			Total Barium (Ba)	2009/08/21		86	%	67 - 132
			Total Chromium (Cr)	2009/08/21		64	%	50 - 150
			Total Cobalt (Co)	2009/08/21		93	%	75 - 125
			Total Copper (Cu)	2009/08/21		72	%	72 - 127
			Total Lead (Pb)	2009/08/21		79	%	65 - 135
			Total Mercury (Hg)	2009/08/21		86	%	75 - 125
			Total Nickel (Ni)	2009/08/21		82	%	75 - 125
			Total Vanadium (V)	2009/08/21		83	%	60 - 140
			Total Zinc (Zn)	2009/08/21		77	%	74 - 125
		Method Blank	Total Antimony (Sb)	2009/08/21	<1		mg/kg	
			Total Arsenic (As)	2009/08/21	<1		mg/kg	
			Total Barium (Ba)	2009/08/21	<10		mg/kg	
			Total Beryllium (Be)	2009/08/21	<0.4		mg/kg	
			Total Cadmium (Cd)	2009/08/21	<0.1		mg/kg	
			Total Chromium (Cr)	2009/08/21	<1		mg/kg	
			Total Cobalt (Co)	2009/08/21	<1		mg/kg	
			Total Copper (Cu)	2009/08/21	<5		mg/kg	
			Total Lead (Pb)	2009/08/21	<1		mg/kg	
			Total Mercury (Hg)	2009/08/21	<0.05		mg/kg	
			Total Molybdenum (Mo)	2009/08/21	<0.4		mg/kg	
			Total Nickel (Ni)	2009/08/21	<1		mg/kg	
			Total Selenium (Se)	2009/08/21	<0.5		mg/kg	
			Total Silver (Ag)	2009/08/21	<1		mg/kg	
			Total Thallium (Tl)	2009/08/21	<0.3		mg/kg	
			Total Tin (Sn)	2009/08/21	<1		mg/kg	
			Total Uranium (U)	2009/08/21	<1		mg/kg	
			Total Vanadium (V)	2009/08/21	<1		mg/kg	
			Total Zinc (Zn)	2009/08/21	<10		mg/kg	
		RPD	Total Antimony (Sb)	2009/08/21	NC		%	35
			Total Arsenic (As)	2009/08/21	NC		%	35
			Total Barium (Ba)	2009/08/21	NC		%	35
			Total Beryllium (Be)	2009/08/21	NC		%	35

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA944714

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3364376	AS7	RPD	Total Cadmium (Cd)	2009/08/21	NC		%	35
			Total Chromium (Cr)	2009/08/21	17.5		%	35
			Total Cobalt (Co)	2009/08/21	NC		%	35
			Total Copper (Cu)	2009/08/21	NC		%	35
			Total Lead (Pb)	2009/08/21	NC		%	35
			Total Mercury (Hg)	2009/08/21	NC		%	35
			Total Molybdenum (Mo)	2009/08/21	NC		%	35
			Total Nickel (Ni)	2009/08/21	7.3		%	35
			Total Selenium (Se)	2009/08/21	NC		%	35
			Total Silver (Ag)	2009/08/21	NC		%	35
			Total Thallium (Tl)	2009/08/21	NC		%	35
			Total Tin (Sn)	2009/08/21	NC		%	35
			Total Uranium (U)	2009/08/21	NC		%	35
			Total Vanadium (V)	2009/08/21	24.3		%	35
			Total Zinc (Zn)	2009/08/21	NC		%	35
3364646	AL2	Spiked Blank	Hex. Chromium (Cr 6+)	2009/08/21		98	%	80 - 120
		Method Blank	Hex. Chromium (Cr 6+)	2009/08/21	<0.15		mg/kg	
		RPD	Hex. Chromium (Cr 6+)	2009/08/21	NC		%	35
3364931	JP6	Method Blank	Moisture	2009/08/21	<0.3		%	
		RPD	Moisture	2009/08/21	4.0		%	20
3366186	RI3	Matrix Spike	Soluble (Hot water) Boron (B)	2009/08/22		91	%	75 - 125
		Spiked Blank	Soluble (Hot water) Boron (B)	2009/08/22		98	%	85 - 115
		Method Blank	Soluble (Hot water) Boron (B)	2009/08/22	<0.1		mg/kg	
		RPD	Soluble (Hot water) Boron (B)	2009/08/22	NC		%	35

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

365

Maxxam Analytics Inc

8577 Commerce Court
Burnaby, BC V5A 4N5
www.maxxamanalytics.com

Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

PAGE ____ OF ____

A944714 336/MG

ANALYSIS REQUEST F 88124

COMPANY NAME: SENES CONSULTANTS LTD	PH. #: 4034512979 E-mail: LBOROWSKI@SRK.COM FAX #:
COMPANY ADDRESS: RICHMOND HILL 121 GRANTON DRIVE, UNIT 12 ONTARIO, L4B 3N4	CLIENT PROJECT ID: (#) ROBERTS BAY
SAMPLER NAME (PRINT): LAWRENCE BOROWSKI	PROJECT MANAGER: LAWRENCE BOROWSKI

	FIELD SAMPLE ID	MAXXAM LAB # (Lab Use Only)	MATRIX: GROUND WATER	MATRIX: SURFACE WATER	MATRIX: SOIL	MATRIX: OTHER	# CONTAINERS	SAMPLING: DATE DD/MM/YY	SAMPLING: TIME	SAMPLING: HEADSPACE VAPOUR	LAB USE ONLY: BTEX F1-4	LAB USE ONLY: Metals
1	V09-SW1										X	X
2	V09-B1										X	
3	V09-G1										X	
4	V09-G2										X	
5	V09-G3										X	
6	V09-G4										X	
7												
8												
9												
10												
11												
12												

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

*some exceptions apply please contact lab

STANDARD 5 BUSINESS DAYS ☐
RUSH 3 BUSINESS DAYS ☐
RUSH 2 BUSINESS DAYS ☐
URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS _____

CUSTODY RECORD

P.O. NUMBER / QUOTE NUMBER:

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE:

☐ CCME
☐ CSR
☐ ALBERTA TIER 1
☐ OTHER

ACCOUNTING CONTACT:

SPECIAL REPORTING OR BILLING INSTRUCTIONS:

JARS USED:

LAB USE ONLY

ARRIVAL TEMPERATURE °C: 1, 2, 2

DUE DATE:

LOG IN CHECK:

RELINQUISHED BY SAMPLER: LBorowski	DATE: DD/MM/YY Aug 18/09	TIME: 19:04	RECEIVED BY:
RELINQUISHED BY:	DATE: DD/MM/YY	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE: DD/MM/YY 24/08/09	TIME: 9:50am	RECEIVED BY LABORATORY: MANON GEORGE

COCFORM - BC - 06/06

ORIGINAL - MAXXAM YELLOW - MAXXAM PINK - CLIENT

Your Project #: ROBERTS BAY

Attention: LAWRENCE BOROWSKI
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
ON
CANADA L4B 3N4

Report Date: 2009/08/25

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A945182
Received: 2009/08/24, 10:15

Sample Matrix: Soil
Samples Received: 15

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	15	2009/08/24	2009/08/24	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
CCME Hydrocarbons (F2-F4 in soil)	15	2009/08/24	2009/08/24	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
Moisture	15	N/A	2009/08/24	EENVSOP-00139	Carter SSMA 51.2

Encryption Key

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

SHELYCE MORRISON, Project Manager
Email: shelyce.morrison@maxxamanalytics.com
Phone# (780) 577-7115 Ext:7115

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A945182
Report Date: 2009/08/25

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q38578	Q38579	Q38580	Q38581		
Sampling Date							
	Units	**300-GN1**	**301-GN2**	**302-GN3**	**303-GE1**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%		14	7.2	22	0.3	3369127
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	53	10	7900	10	3368582
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	260	<10	3600	10	3368582
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	28	<10	170	10	3368582
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3368582
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3367864
Toluene	mg/kg	<0.020	<0.020	<0.020	0.10	0.020	3367864
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	0.40	0.010	3367864
Xylenes (Total)	mg/kg	<0.040	<0.040	<0.040	4.9	0.040	3367864
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	3.0	0.040	3367864
o-Xylene	mg/kg	<0.020	<0.020	<0.020	1.8	0.020	3367864
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	640	12	3367864
(C6-C10)	mg/kg	<12	<12	<12	640	12	3367864
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	101	108	101	101		3367864
D10-ETHYLBENZENE (sur.)	%	87	90	93	98		3367864
D4-1,2-DICHLOROETHANE (sur.)	%	89	92	91	91		3367864
D8-TOLUENE (sur.)	%	101	96	108	94		3367864
O-TERPHENYL (sur.)	%	106	109	117	110		3368582

RDL = Reportable Detection Limit

Maxxam Job #: A945182
Report Date: 2009/08/25

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q38582		Q38583		
Sampling Date						
	Units	**304-GE2**	**RDL**	**305-GE3**	**RDL**	**QC Batch**
Physical Properties						
Moisture	%	23	0.3	66	0.3	3369127
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/kg	250	10	6400	10	3368582
F3 (C16-C34 Hydrocarbons)	mg/kg	200	10	2300	10	3368582
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	10	65	10	3368582
Reached Baseline at C50	mg/kg	Yes		Yes		3368582
Volatiles						
Benzene	mg/kg	<0.0050	0.0050	<0.015	0.015	3367864
Toluene	mg/kg	<0.020	0.020	<0.059	0.059	3367864
Ethylbenzene	mg/kg	<0.010	0.010	<0.030	0.030	3367864
Xylenes (Total)	mg/kg	0.23	0.040	1.1	0.12	3367864
m & p-Xylene	mg/kg	0.14	0.040	0.76	0.12	3367864
o-Xylene	mg/kg	0.096	0.020	0.29	0.059	3367864
F1 (C6-C10) - BTEX	mg/kg	19	12	210	36	3367864
(C6-C10)	mg/kg	19	12	210	36	3367864
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	88		107		3367864
D10-ETHYLBENZENE (sur.)	%	94		94		3367864
D4-1,2-DICHLOROETHANE (sur.)	%	89		92		3367864
D8-TOLUENE (sur.)	%	97		94		3367864
O-TERPHENYL (sur.)	%	112		114		3368582

RDL = Reportable Detection Limit

Maxxam Job #: A945182
Report Date: 2009/08/25

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q38585	Q38586	Q38587	Q38588		
Sampling Date							
	Units	**307-GS1**	**308-GS2**	**309-GS3**	**310-GS4**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	150	1600	4500	3900	10	3368582
F3 (C16-C34 Hydrocarbons)	mg/kg	160	1300	3500	1000	10	3368582
F4 (C34-C50 Hydrocarbons)	mg/kg	18	110	400	34	10	3368582
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3368582
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3367864
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3367864
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3367864
Xylenes (Total)	mg/kg	0.22	0.081	0.22	1.5	0.040	3367864
m & p-Xylene	mg/kg	0.12	<0.040	0.11	0.83	0.040	3367864
o-Xylene	mg/kg	0.099	0.081	0.11	0.72	0.020	3367864
F1 (C6-C10) - BTEX	mg/kg	<12	39	110	270	12	3367864
(C6-C10)	mg/kg	<12	39	110	270	12	3367864
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	96	104	104	101		3367864
D10-ETHYLBENZENE (sur.)	%	101	95	96	99		3367864
D4-1,2-DICHLOROETHANE (sur.)	%	88	87	90	91		3367864
D8-TOLUENE (sur.)	%	104	108	101	96		3367864
O-TERPHENYL (sur.)	%	112	120	124	118		3368582

RDL = Reportable Detection Limit

Maxxam Job #: A945182
Report Date: 2009/08/25

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q38589	Q38590	Q38591	Q38592		
Sampling Date							
	Units	**311-TP1**	**312-TP2**	**313-TP3A**	**314-TP3B**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	11	20	110	3400	10	3368582
F3 (C16-C34 Hydrocarbons)	mg/kg	180	57	89	800	10	3368582
F4 (C34-C50 Hydrocarbons)	mg/kg	40	12	19	<10	10	3368582
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3368582
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3367864
Toluene	mg/kg	<0.020	<0.020	<0.020	0.80	0.020	3367864
Ethylbenzene	mg/kg	<0.010	<0.010	0.24	2.7	0.010	3367864
Xylenes (Total)	mg/kg	0.13	<0.040	1.9	25	0.040	3367864
m & p-Xylene	mg/kg	<0.040	<0.040	1.2	17	0.040	3367864
o-Xylene	mg/kg	0.13	<0.020	0.64	8.6	0.020	3367864
F1 (C6-C10) - BTEX	mg/kg	<12	<12	33	640	12	3367864
(C6-C10)	mg/kg	<12	<12	35	670	12	3367864
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	84	105	111	110		3367864
D10-ETHYLBENZENE (sur.)	%	94	97	96	94		3367864
D4-1,2-DICHLOROETHANE (sur.)	%	92	92	90	92		3367864
D8-TOLUENE (sur.)	%	103	102	101	91		3367864
O-TERPHENYL (sur.)	%	121	119	106	114		3368582

RDL = Reportable Detection Limit

Maxxam Job #: A945182
Report Date: 2009/08/25

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q38593		
Sampling Date				
	Units	**315-TP4**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/kg	320	10	3368582
F3 (C16-C34 Hydrocarbons)	mg/kg	110	10	3368582
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	10	3368582
Reached Baseline at C50	mg/kg	Yes		3368582
Volatiles				
Benzene	mg/kg	<0.0050	0.0050	3367864
Toluene	mg/kg	<0.020	0.020	3367864
Ethylbenzene	mg/kg	<0.010	0.010	3367864
Xylenes (Total)	mg/kg	<0.040	0.040	3367864
m & p-Xylene	mg/kg	<0.040	0.040	3367864
o-Xylene	mg/kg	<0.020	0.020	3367864
F1 (C6-C10) - BTEX	mg/kg	31	12	3367864
(C6-C10)	mg/kg	31	12	3367864
Surrogate Recovery (%)				
4-BROMOFLUOROBENZENE (sur.)	%	95		3367864
D10-ETHYLBENZENE (sur.)	%	92		3367864
D4-1,2-DICHLOROETHANE (sur.)	%	89		3367864
D8-TOLUENE (sur.)	%	93		3367864
O-TERPHENYL (sur.)	%	106		3368582

RDL = Reportable Detection Limit

Maxxam Job #: A945182
Report Date: 2009/08/25

SENES CONSULTANTS LIMITED
Client Project #: ROBERTS BAY

Sampler Initials: LB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		Q38578	Q38585	Q38586	Q38587	Q38588		
Sampling Date								
	Units	**300-GN1**	**307-GS1**	**308-GS2**	**309-GS3**	**310-GS4**	**RDL**	**QC Batch**
Physical Properties								
Moisture	%	6.8	26	13	15	23	0.3	3369127
RDL = Reportable Detection Limit								

Maxxam ID		Q38589	Q38590	Q38591	Q38592	Q38593		
Sampling Date								
	Units	**311-TP1**	**312-TP2**	**313-TP3A**	**314-TP3B**	**315-TP4**	**RDL**	**QC Batch**
Physical Properties								
Moisture	%	25	13	19	21	18	0.3	3369127
RDL = Reportable Detection Limit								

General Comments

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EA945182

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3367864	DR3	Matrix Spike						
		[Q38579-01]	4-BROMOFLUOROBENZENE (sur.)	2009/08/24		105	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/24		99	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/24		90	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/24		100	%	60 - 140
			Benzene	2009/08/24		95	%	60 - 140
			Toluene	2009/08/24		90	%	60 - 140
			Ethylbenzene	2009/08/24		97	%	60 - 140
			m & p-Xylene	2009/08/24		102	%	60 - 140
			o-Xylene	2009/08/24		107	%	60 - 140
			(C6-C10)	2009/08/24		95	%	60 - 140
		Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/24		104	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/24		111	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/24		100	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/24		105	%	60 - 140
			Benzene	2009/08/24		102	%	60 - 140
			Toluene	2009/08/24		94	%	60 - 140
			Ethylbenzene	2009/08/24		104	%	60 - 140
			m & p-Xylene	2009/08/24		103	%	60 - 140
			o-Xylene	2009/08/24		106	%	60 - 140
			(C6-C10)	2009/08/24		98	%	80 - 120
		Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/24		108	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/24		90	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/24		91	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/24		119	%	60 - 140
			Benzene	2009/08/24	<0.0050		mg/kg	
			Toluene	2009/08/24	<0.020		mg/kg	
			Ethylbenzene	2009/08/24	<0.010		mg/kg	
			Xylenes (Total)	2009/08/24	<0.040		mg/kg	
			m & p-Xylene	2009/08/24	<0.040		mg/kg	
			o-Xylene	2009/08/24	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/08/24	<12		mg/kg	
			(C6-C10)	2009/08/24	<12		mg/kg	
		RPD [Q38578-01]	Benzene	2009/08/24	NC		%	50
			Toluene	2009/08/24	NC		%	50
			Ethylbenzene	2009/08/24	NC		%	50
			Xylenes (Total)	2009/08/24	NC		%	50
			m & p-Xylene	2009/08/24	NC		%	50
			o-Xylene	2009/08/24	NC		%	50
			F1 (C6-C10) - BTEX	2009/08/24	NC		%	50
			(C6-C10)	2009/08/24	NC		%	50
3368582	MB7	Matrix Spike						
		[Q38579-01]	O-TERPHENYL (sur.)	2009/08/24		115	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/24		102	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/08/24		100	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/08/24		110	%	50 - 130
		Spiked Blank	O-TERPHENYL (sur.)	2009/08/24		79	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/24		91	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/08/24		85	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/08/24		94	%	80 - 120
		Method Blank	O-TERPHENYL (sur.)	2009/08/24		80	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/24	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/08/24	<10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/08/24	<10		mg/kg	
		RPD [Q38578-01]	F2 (C10-C16 Hydrocarbons)	2009/08/24	NC		%	50

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA945182

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3368582	MB7	RPD [Q38578-01]	F3 (C16-C34 Hydrocarbons)	2009/08/24	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/24	NC		%	50
3369127	JP6	Method Blank	Moisture	2009/08/24	<0.3		%	
		RPD [Q38578-01]	Moisture	2009/08/24	1.5		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

474

A945/82 TP/JC

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

86425

CHAIN OF CUSTODY

Page: 1 of 2

Invoice To: Require Report? Yes ☒ No ☐

Company Name: SENES CONSULTANTS Ltd.
Contact Name: LAWRENCE BOROWSKI
Address:
Prov: PC:
Contact #s: Ph: 4034512979 Fax:

Report To:

LAWRENCE BOROWSKI
lborowski@SRK.com
Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #: DCS 2009 Standing offer
Project #: 34807
Project Name: ROBERTS BAY
Location:
Sampler's Initials: LB.

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
☐ AT1 ____ ℓ →
☐ CCME ____
☐ OTHER ____

REPORT DISTRIBUTION:
EMAIL ADDRESS(S):
lborowski@SRK.com
cgravelle@dcsltd.com

SERVICE REQUESTED:
☒ **RUSH** (Please ensure you contact the lab to reserve)
Date Required: ASAP
☐ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter ☐ Flashpoint ☐ pH (1:1)	TCLP ☐ BTEX ☐ Metals	WATERS: ☐ BTEX F1 ☐ VOCs	☐ BTEX F1-F2 ☐ BTEX F1-F4	Routine Water Package ☐ Turb ☐ F	REGULATED METALS (CCME / AT1)[3] Total ☐ Preserved ☐ Not Preserved	Dissolved ☐ Preserved ☐ Not Preserved ☐ Filtered ☐ Not Filtered	Mercury ☐ Total ☐ Dissolved	☐ Ammonia ☐ TKN ☐ COD	☐ TOC ☐ DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	~~306~~ 300 - GN1	S	AUG 23/09	X																	
2	301 - GN2	S	"	X																	
3	302 - GN3	S	"	X																	
4	303 - GE1	S	"	X																	
5	304 - GE2	S	"	X																	
6	305 - GE3	S	"	X																	
7	~~306 - GE4~~	~~S~~	~~"~~	~~X~~	NO SAMPLE																
8	307 - GS1	S	"	X																	
9	308 - GS2	S	"	X																	
10	309 - GS3	S	"	X																	
11	310 - GS4	S	"	X																	
12	311 - TP1	S	"	X																	

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: [signature] Date/Time: Aug 23/09
Sign and Print: LAWRENCE BOROWSKI
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	TP 10:45 24/08/09	4	4	4	✓
	CUSTODY SEAL YES / NO				

474

A945182-TD/JC

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

86426

CHAIN OF CUSTODY

Page: 2 of 2

Invoice To: Require Report? Yes [X] No [ ]

Company Name: SENES CONSULTANTS Ltd
Contact Name: LAWRENCE BOROWSKI
Address:
Prov: PC:
Contact #s: Ph: 403 45/2979 Fax:

Report To:

LAWRENCE BOROWSKI
lborowski@srk.com
Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #: DCS 2009 Standing offer
Project #: 34807
Project Name: ROBERTS BAY
Location:
Sampler's Initials: LB.

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
[ ] AT1
[ ] CCME
[ ] OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S):
lborowski@srk.com
cgravelle@dcsltd.com

SERVICE REQUESTED:
[X] **RUSH** (Please ensure you contact the lab to reserve)
Date Required: ASAP.
[ ] REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter / Flashpoint / pH (1:1)	TCLP / BTEX / Metals	WATERS: BTEX F1 / VOCs	BTEX F1-F2 / BTEX F1-F4	Routine Water Package / Turb / F	REGULATED METALS (CCME / AT1)[3] Total / Preserved / Not Preserved	Dissolved / Preserved / Not Preserved / Filtered / Not Filtered	Mercury / Total / Dissolved	Ammonia / TKN / COD	TOC / DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	312 - TP2	S		X																	
2	313 - TP3A	S		X																	
3	314 - TP3B	S		X																	
4	315 - TP4	S		X																	
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: LBorowski **Date/Time:** Aug 23/09 11:00 am
Sign and Print: LAWRENCE BOROWSKI
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	TD 10:25h 24/08/09	4	4	4	✓
	CUSTODY SEAL YES / NO				

Your Project #: 34807 ROBERTS BAY
Your C.O.C. #: 81106

Attention: LAWRENCE BOROWSKI
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
ON
CANADA L4B 3N4

Report Date: 2009/08/27
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A945755
Received: 2009/08/26, 8:00

Sample Matrix: Soil
Samples Received: 9

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	9	2009/08/26	2009/08/26	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
CCME Hydrocarbons (F2-F4 in soil)	8	2009/08/26	2009/08/26	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
CCME Hydrocarbons (F2-F4 in soil)	1	2009/08/27	2009/08/27	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
Moisture	9	N/A	2009/08/26	EENVSOP-00139	Carter SSMA 51.2

Encryption Key

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

SHELYCE MORRISON, Project Manager
Email: shelyce.morrison@maxxamanalytics.com
Phone# (780) 577-7115 Ext:7115

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Job #: A945755
Report Date: 2009/08/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: LB

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		Q43089	Q43275	Q43276	Q43277	Q43279		
Sampling Date		2009/08/24	2009/08/24	2009/08/24	2009/08/24	2009/08/24		
COC Number		81106	81106	81106	81106	81106		
	Units	**320-GE1**	**321-GE2**	**322-GN1**	**323-GN2**	**325-TP31**	**RDL**	**QC Batch**
Physical Properties								
Moisture	%	71	26	8.3	13	22	0.3	3375870

RDL = Reportable Detection Limit

Maxxam ID		Q43280	Q43281	Q43282	Q43410		
Sampling Date		2009/08/24	2009/08/24	2009/08/24	2009/08/24		
COC Number		81106	81106	81106	81106		
	Units	**326-TP32**	**327-GS1**	**328-GS2**	**324-GN3**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	25	13	11	23	0.3	3375870

RDL = Reportable Detection Limit

Maxxam Job #: A945755
Report Date: 2009/08/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: LB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		Q43089	Q43275	Q43276	Q43277		
Sampling Date		2009/08/24	2009/08/24	2009/08/24	2009/08/24		
COC Number		81106	81106	81106	81106		
	Units	**320-GE1**	**321-GE2**	**322-GN1**	**323-GN2**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	17000	140	24	<10	10	3376234
F3 (C16-C34 Hydrocarbons)	mg/kg	10000	100	74	27	10	3376234
F4 (C34-C50 Hydrocarbons)	mg/kg	860	41	54	<10	10	3376234
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3376234
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	108	87	84	87		3376234

RDL = Reportable Detection Limit

Maxxam ID		Q43279	Q43280	Q43281	Q43282		
Sampling Date		2009/08/24	2009/08/24	2009/08/24	2009/08/24		
COC Number		81106	81106	81106	81106		
	Units	**325-TP31**	**326-TP32**	**327-GS1**	**328-GS2**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	10	37	<10	69	10	3376234
F3 (C16-C34 Hydrocarbons)	mg/kg	79	98	12	80	10	3376234
F4 (C34-C50 Hydrocarbons)	mg/kg	13	24	<10	19	10	3376234
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3376234
Surrogate Recovery (%)							
O-TERPHENYL (sur.)	%	85	98	86	92		3376234

RDL = Reportable Detection Limit

Maxxam Job #: A945755
Report Date: 2009/08/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: LB

PETROLEUM HYDROCARBONS (CCME)

Maxxam ID		Q43410		
Sampling Date		2009/08/24		
COC Number		81106		
	Units	**324-GN3**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	3376234
F3 (C16-C34 Hydrocarbons)	mg/kg	110	10	3376234
F4 (C34-C50 Hydrocarbons)	mg/kg	21	10	3376234
Reached Baseline at C50	mg/kg	Yes		3376234
Surrogate Recovery (%)				
O-TERPHENYL (sur.)	%	91		3376234

RDL = Reportable Detection Limit

Maxxam Job #: A945755
Report Date: 2009/08/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: LB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q43089		Q43275	Q43276		
Sampling Date		2009/08/24		2009/08/24	2009/08/24		
COC Number		81106		81106	81106		
	Units	**320-GE1**	**RDL**	**321-GE2**	**322-GN1**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	0.046	0.017	<0.0050	<0.0050	0.0050	3375413
Toluene	mg/kg	0.092	0.068	<0.020	<0.020	0.020	3375413
Ethylbenzene	mg/kg	0.37	0.034	<0.010	<0.010	0.010	3375413
Xylenes (Total)	mg/kg	5.7	0.14	0.24	<0.040	0.040	3375413
m & p-Xylene	mg/kg	3.0	0.14	0.11	<0.040	0.040	3375413
o-Xylene	mg/kg	2.6	0.068	0.14	<0.020	0.020	3375413
F1 (C6-C10) - BTEX	mg/kg	170	41	24	<12	12	3375413
(C6-C10)	mg/kg	180	41	24	<12	12	3375413
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	105		104	100		3375413
D10-ETHYLBENZENE (sur.)	%	87		110	110		3375413
D4-1,2-DICHLOROETHANE (sur.)	%	86		83	82		3375413
D8-TOLUENE (sur.)	%	102		108	108		3375413

RDL = Reportable Detection Limit

Maxxam Job #: A945755
Report Date: 2009/08/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: LB

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q43277	Q43279	Q43280	Q43281		
Sampling Date		2009/08/24	2009/08/24	2009/08/24	2009/08/24		
COC Number		81106	81106	81106	81106		
	Units	**323-GN2**	**325-TP31**	**326-TP32**	**327-GS1**	**RDL**	**QC Batch**
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3375413
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3375413
Ethylbenzene	mg/kg	<0.010	0.018	0.021	<0.010	0.010	3375413
Xylenes (Total)	mg/kg	<0.040	0.13	0.14	<0.040	0.040	3375413
m & p-Xylene	mg/kg	<0.040	0.087	0.10	<0.040	0.040	3375413
o-Xylene	mg/kg	<0.020	0.040	0.041	<0.020	0.020	3375413
F1 (C6-C10) - BTEX	mg/kg	<12	<12	<12	<12	12	3375413
(C6-C10)	mg/kg	<12	<12	<12	<12	12	3375413
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	97	99	97	100		3375413
D10-ETHYLBENZENE (sur.)	%	117	101	119	102		3375413
D4-1,2-DICHLOROETHANE (sur.)	%	99	98	99	91		3375413
D8-TOLUENE (sur.)	%	108	109	111	105		3375413

RDL = Reportable Detection Limit

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		Q43282	Q43410		
Sampling Date		2009/08/24	2009/08/24		
COC Number		81106	81106		
	Units	**328-GS2**	**324-GN3**	**RDL**	**QC Batch**
Volatiles					
Benzene	mg/kg	<0.0050	<0.0050	0.0050	3375413
Toluene	mg/kg	<0.020	<0.020	0.020	3375413
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	3375413
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	3375413
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	3375413
o-Xylene	mg/kg	<0.020	<0.020	0.020	3375413
F1 (C6-C10) - BTEX	mg/kg	<12	<12	12	3375413
(C6-C10)	mg/kg	<12	<12	12	3375413
Surrogate Recovery (%)					
4-BROMOFLUOROBENZENE (sur.)	%	113	100		3375413
D10-ETHYLBENZENE (sur.)	%	103	96		3375413
D4-1,2-DICHLOROETHANE (sur.)	%	90	94		3375413
D8-TOLUENE (sur.)	%	96	100		3375413

RDL = Reportable Detection Limit

General Comments

Sample Q43089-01: BTEX/F1 detection limits raised due to high moisture content

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: 34807 ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EA945755

QA/QC Batch Num Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3375413 DR3	Matrix Spike	4-BROMOFLUOROBENZENE (sur.)	2009/08/26		98	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/26		84	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/26		100	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/26		108	%	60 - 140
		Benzene	2009/08/26		98	%	60 - 140
		Toluene	2009/08/26		106	%	60 - 140
		Ethylbenzene	2009/08/26		115	%	60 - 140
		m & p-Xylene	2009/08/26		116	%	60 - 140
		o-Xylene	2009/08/26		120	%	60 - 140
		(C6-C10)	2009/08/26		103	%	60 - 140
	Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/26		101	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/26		90	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/26		86	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/26		107	%	60 - 140
		Benzene	2009/08/26		85	%	60 - 140
		Toluene	2009/08/26		91	%	60 - 140
		Ethylbenzene	2009/08/26		95	%	60 - 140
		m & p-Xylene	2009/08/26		95	%	60 - 140
		o-Xylene	2009/08/26		91	%	60 - 140
		(C6-C10)	2009/08/26		119	%	80 - 120
	Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/26		100	%	60 - 140
		D10-ETHYLBENZENE (sur.)	2009/08/26		86	%	30 - 130
		D4-1,2-DICHLOROETHANE (sur.)	2009/08/26		87	%	60 - 140
		D8-TOLUENE (sur.)	2009/08/26		105	%	60 - 140
		Benzene	2009/08/26	<0.0050		mg/kg	
		Toluene	2009/08/26	<0.020		mg/kg	
		Ethylbenzene	2009/08/26	<0.010		mg/kg	
		Xylenes (Total)	2009/08/26	<0.040		mg/kg	
		m & p-Xylene	2009/08/26	<0.040		mg/kg	
		o-Xylene	2009/08/26	<0.020		mg/kg	
		F1 (C6-C10) - BTEX	2009/08/26	<12		mg/kg	
		(C6-C10)	2009/08/26	<12		mg/kg	
	RPD	Benzene	2009/08/26	NC		%	50
		Toluene	2009/08/26	NC		%	50
		Ethylbenzene	2009/08/26	NC		%	50
		Xylenes (Total)	2009/08/26	NC		%	50
		m & p-Xylene	2009/08/26	NC		%	50
		o-Xylene	2009/08/26	NC		%	50
		F1 (C6-C10) - BTEX	2009/08/26	NC		%	50
		(C6-C10)	2009/08/26	NC		%	50
3375870 JP6	Method Blank	Moisture	2009/08/26	<0.3		%	
	RPD	Moisture	2009/08/26	6.5		%	20
3376234 MB7	Matrix Spike	O-TERPHENYL (sur.)	2009/08/26		110	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2009/08/26		105	%	50 - 130
		F3 (C16-C34 Hydrocarbons)	2009/08/26		112	%	50 - 130
		F4 (C34-C50 Hydrocarbons)	2009/08/26		123	%	50 - 130
	Spiked Blank	O-TERPHENYL (sur.)	2009/08/26		93	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2009/08/26		101	%	80 - 120
		F3 (C16-C34 Hydrocarbons)	2009/08/26		104	%	80 - 120
		F4 (C34-C50 Hydrocarbons)	2009/08/26		107	%	80 - 120
	Method Blank	O-TERPHENYL (sur.)	2009/08/26		102	%	50 - 130
		F2 (C10-C16 Hydrocarbons)	2009/08/26	<10		mg/kg	
		F3 (C16-C34 Hydrocarbons)	2009/08/26	<10		mg/kg	
		F4 (C34-C50 Hydrocarbons)	2009/08/26	<10		mg/kg	
	RPD	F2 (C10-C16 Hydrocarbons)	2009/08/26	NC		%	50

SENES CONSULTANTS LIMITED
Attention: LAWRENCE BOROWSKI
Client Project #: 34807 ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA945755

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3376234	MB7	RPD	F3 (C16-C34 Hydrocarbons)	2009/08/26	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/26	NC		%	50

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

62

EA9457555/MB/JL

81106

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

CHAIN OF CUSTODY

Page: _____ of _____

Invoice To: Require Report? Yes [X] No [ ]

Company Name: SENES CONSULTANTS Ltd.
Contact Name: LAWRENCE BOROWSKI
Address:
Prov: PC:
Contact #s: Ph: 403 451 2979 Fax:

Report To:

LAWRENCE BOROWSKI
lborowski@SRK.com
Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #: DCS 2009 STANDING offer
Project #: 34807
Project Name: ROBERTS BAY
Location:
Sampler's Initials: LB.

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use
[ ] AT1 _____
[ ] CCME _____
[ ] OTHER _____

REPORT DISTRIBUTION:

EMAIL ADDRESS(S):
lborowski@SRK.com

SERVICE REQUESTED:

[X] **RUSH** (Please ensure you contact the lab to reserve)
Date Required: asap
[ ] REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter / Flashpoint / pH (1:1)	TCLP / BTEX / Metals	WATERS: BTEX F1 / VOCs	BTEX F1-F2 / BTEX F1-F4	Routine Water Package / Turb / F	REGULATED METALS (CCME / AT1)[3]: Total Preserved / Not Preserved	Dissolved Preserved Filtered / Not Preserved Not Filtered	Mercury: Total / Dissolved	Ammonia / TKN / COD	TOC / DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	320-GE1	S	Aug 24/09	X																	
2	321-GE2	"	Aug 24/09	X																	
3	322-GN1	"	Aug 24/09	X																	
4	323-GN2	"	Aug 24/09	X																	
5	324-GN4	"	Aug 24/09	X																	
6	325-TP31	"	Aug 24/09	X																	
7	326-TP32	"	Aug 24/09	X																	
8	327-GS1	"	Aug 24/09	X																	
9	328-GS2	"	Aug 24/09	X																	
10																					
11																					
12																					

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: LBorowski Date/Time: Aug 24/09 6:20pm
Sign and Print: LAWRENCE BOROWSKI
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	26/08/09. SZ 8:00AM	2	1	1	Y
	CUSTODY SEAL (YES) / NO				

Your Project #: 34807
Site: ROBERTS BAY
Your C.O.C. #: 81117

Attention: HENRY WONG
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
ON
CANADA L4B 3N4

Report Date: 2009/08/28

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A946401
Received: 2009/08/28, 8:00

Sample Matrix: Soil
Samples Received: 6

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	6	2009/08/28	2009/08/28	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
CCME Hydrocarbons (F2-F4 in soil)	6	2009/08/28	2009/08/28	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
Moisture	6	N/A	2009/08/28	EENVSOP-00139	Carter SSMA 51.2

Encryption Key

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

SHELYCE MORRISON, Project Manager
Email: shelyce.morrison@maxxamanalytics.com
Phone# (780) 577-7115 Ext:7115

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Total cover pages: 1

Maxxam Analytics

Maxxam Job #: A946401
Report Date: 2009/08/28

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: HW

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q47299	Q47300	Q47301	Q47302		
Sampling Date		2009/08/27	2009/08/27	2009/08/27	2009/08/27		
COC Number		81117	81117	81117	81117		
	Units	**400**	**401**	**402**	**403**	**RDL**	**QC Batch**
Physical Properties							
Moisture	%	12	10	13	13	0.3	3381036
Ext. Pet. Hydrocarbon							
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	2500	10000	10	3380750
F3 (C16-C34 Hydrocarbons)	mg/kg	<10	<10	1200	3700	10	3380750
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	35	89	10	3380750
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes		3380750
Volatiles							
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	3380678
Toluene	mg/kg	<0.020	<0.020	<0.020	<0.020	0.020	3380678
Ethylbenzene	mg/kg	<0.010	<0.010	0.055	0.61	0.010	3380678
Xylenes (Total)	mg/kg	<0.040	<0.040	0.63	9.0	0.040	3380678
m & p-Xylene	mg/kg	<0.040	<0.040	0.39	5.6	0.040	3380678
o-Xylene	mg/kg	<0.020	<0.020	0.24	3.4	0.020	3380678
F1 (C6-C10) - BTEX	mg/kg	<12	<12	83	710	12	3380678
(C6-C10)	mg/kg	<12	<12	84	720	12	3380678
Surrogate Recovery (%)							
4-BROMOFLUOROBENZENE (sur.)	%	98	74	112	118		3380678
D10-ETHYLBENZENE (sur.)	%	85	91	88	102		3380678
D4-1,2-DICHLOROETHANE (sur.)	%	87	92	103	104		3380678
D8-TOLUENE (sur.)	%	106	125	96	95		3380678
O-TERPHENYL (sur.)	%	106	89	109	120		3380750

RDL = Reportable Detection Limit

Maxxam Analytics

Maxxam Job #: A946401
Report Date: 2009/08/28

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: HW

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		Q47303	Q47304		
Sampling Date		2009/08/27	2009/08/27		
COC Number		81117	81117		
	Units	**404**	**405**	**RDL**	**QC Batch**
Physical Properties					
Moisture	%	13	12	0.3	3381036
Ext. Pet. Hydrocarbon					
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	10	3380750
F3 (C16-C34 Hydrocarbons)	mg/kg	14	<10	10	3380750
F4 (C34-C50 Hydrocarbons)	mg/kg	<10	<10	10	3380750
Reached Baseline at C50	mg/kg	Yes	Yes		3380750
Volatiles					
Benzene	mg/kg	<0.0050	<0.0050	0.0050	3380678
Toluene	mg/kg	<0.020	<0.020	0.020	3380678
Ethylbenzene	mg/kg	<0.010	<0.010	0.010	3380678
Xylenes (Total)	mg/kg	<0.040	<0.040	0.040	3380678
m & p-Xylene	mg/kg	<0.040	<0.040	0.040	3380678
o-Xylene	mg/kg	<0.020	<0.020	0.020	3380678
F1 (C6-C10) - BTEX	mg/kg	<12	<12	12	3380678
(C6-C10)	mg/kg	<12	<12	12	3380678
Surrogate Recovery (%)					
4-BROMOFLUOROBENZENE (sur.)	%	97	94		3380678
D10-ETHYLBENZENE (sur.)	%	97	97		3380678
D4-1,2-DICHLOROETHANE (sur.)	%	96	93		3380678
D8-TOLUENE (sur.)	%	87	101		3380678
O-TERPHENYL (sur.)	%	111	92		3380750

RDL = Reportable Detection Limit

Maxxam Job #: A946401
Report Date: 2009/08/28

SENES CONSULTANTS LIMITED
Client Project #: 34807
Site Reference: ROBERTS BAY
Sampler Initials: HW

General Comments

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807
P.O. #:
Site Reference: ROBERTS BAY

Quality Assurance Report

Maxxam Job Number: EA946401

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3380678	DR3	Matrix Spike						
		[Q47300-01]	4-BROMOFLUOROBENZENE (sur.)	2009/08/28		86	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/28		98	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/28		97	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/28		128	%	60 - 140
			Benzene	2009/08/28		89	%	60 - 140
			Toluene	2009/08/28		113	%	60 - 140
			Ethylbenzene	2009/08/28		94	%	60 - 140
			m & p-Xylene	2009/08/28		99	%	60 - 140
			o-Xylene	2009/08/28		94	%	60 - 140
			(C6-C10)	2009/08/28		92	%	60 - 140
		Spiked Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/28		104	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/28		113	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/28		93	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/28		119	%	60 - 140
			Benzene	2009/08/28		99	%	60 - 140
			Toluene	2009/08/28		112	%	60 - 140
			Ethylbenzene	2009/08/28		98	%	60 - 140
			m & p-Xylene	2009/08/28		99	%	60 - 140
			o-Xylene	2009/08/28		99	%	60 - 140
			(C6-C10)	2009/08/28		98	%	80 - 120
		Method Blank	4-BROMOFLUOROBENZENE (sur.)	2009/08/28		90	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/08/28		99	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/08/28		98	%	60 - 140
			D8-TOLUENE (sur.)	2009/08/28		107	%	60 - 140
			Benzene	2009/08/28	<0.0050		mg/kg	
			Toluene	2009/08/28	<0.020		mg/kg	
			Ethylbenzene	2009/08/28	<0.010		mg/kg	
			Xylenes (Total)	2009/08/28	<0.040		mg/kg	
			m & p-Xylene	2009/08/28	<0.040		mg/kg	
			o-Xylene	2009/08/28	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/08/28	<12		mg/kg	
			(C6-C10)	2009/08/28	<12		mg/kg	
		RPD [Q47299-01]	Benzene	2009/08/28	NC		%	50
			Toluene	2009/08/28	NC		%	50
			Ethylbenzene	2009/08/28	NC		%	50
			Xylenes (Total)	2009/08/28	NC		%	50
			m & p-Xylene	2009/08/28	NC		%	50
			o-Xylene	2009/08/28	NC		%	50
			F1 (C6-C10) - BTEX	2009/08/28	NC		%	50
			(C6-C10)	2009/08/28	NC		%	50
3380750	LD2	Matrix Spike						
		[Q47300-01]	O-TERPHENYL (sur.)	2009/08/28		91	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/28		86	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/08/28		85	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/08/28		102	%	50 - 130
		Spiked Blank	O-TERPHENYL (sur.)	2009/08/28		99	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/28		95	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/08/28		103	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/08/28		112	%	80 - 120
		Method Blank	O-TERPHENYL (sur.)	2009/08/28		106	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/08/28	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/08/28	<10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/08/28	<10		mg/kg	
		RPD [Q47299-01]	F2 (C10-C16 Hydrocarbons)	2009/08/28	NC		%	50

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807
P.O. #:
Site Reference: ROBERTS BAY

Quality Assurance Report (Continued)

Maxxam Job Number: EA946401

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3380750	LD2	RPD [Q47299-01]	F3 (C16-C34 Hydrocarbons)	2009/08/28	NC		%	50
			F4 (C34-C50 Hydrocarbons)	2009/08/28	NC		%	50
3381036	JP6	Method Blank	Moisture	2009/08/28	<0.3		%	
		RPD [Q47299-01]	Moisture	2009/08/28	16.6		%	20

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

169

A946401/MW/JE

81117

Maxxam Analytics — CHAIN OF CUSTODY

Page: 1 of 1

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

Invoice To: Require Report? Yes [X] No [ ]

Company Name: SENES
Contact Name: Henry Wong
Address:
Prov: PC:
Contact #s: Ph: Fax:

Report To: Henry Wong hwong@dcsltd.ca

Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #: DCS 2009 Standing
Project #: Roberts Bay
Project Name: 54807
Location:
Sampler's Initials: HW.

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
[ ] AT1
[X] CCME Tier 1 Residential
[ ] OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S): hwong@dcsltd.ca

SERVICE REQUESTED:
[X] RUSH (Please ensure you contact the lab to reserve) Rush
Date Required: Aug 28
[ ] REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter / Flashpoint / pH (1:1)	TCLP / BTEX / Metals	WATERS: BTEX F1 / VOCs	BTEX F1-F2 / BTEX F1-F4	Routine Water Package / Turb / F	REGULATED METALS (CCME / AT1)[3]: Total Preserved / Not Preserved	Dissolved Preserved / Not Preserved / Filtered / Not Filtered	Mercury: Total / Dissolved	Ammonia / TKN / COD	TOC / DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	400	S	Aug 27/2009	X																	1
2	401	S	"	X																	1
3	402	S	"	X																	1
4	403	S	"	X																	1
5	404	S	"	X																	1
6	405	S	"	X																	1
7																					
8																					
9																					
10																					
11																					
12																					

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: HWong Date/Time: Aug 27/2009
Sign and Print: Henry Wong
COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	TD Aug 28/09 08:00h	19	19	19	NO
	CUSTODY SEAL YES / NO				

WATER CHEMISTRY

SENES

Your C.O.C. #: 86424

Attention: GAVIN DOMITTER
QUANTUM ENVIRONMENTAL GROUP
400 - 4400 Dominion Street
Burnaby, AB
CANADA V5G 4G3

Report Date: 2009/08/04
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A938820
Received: 2009/07/27, 13:24

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS (MeOH extract)	1	2009/07/27	2009/07/29	EENVSOP-00005 EENVSOP-00002	EPA 8260C/CCME
CCME Hydrocarbons (F2-F4 in soil)	1	2009/07/27	2009/07/28	EENVSOP-00007 EENVSOP-00006	CWS PHCS Tier 1
CCME Hydrocarbons (F4G in soil)	1	2009/07/29	2009/07/29	EENVSOP-00121	CWS PHCS Tier 1
Moisture (1)	1	N/A	2009/07/28		

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (pp, total), CO3,HCO3,OH	2	N/A	2009/07/28	EENVSOP-00054	SM 2320-B
Alkalinity (pp, total), CO3,HCO3,OH	1	N/A	2009/07/29	EENVSOP-00054	SM 2320-B
Biochemical Oxygen Demand	1	2009/07/27	2009/08/01	EIND SOP-00010	SM 5210 B
Biochemical Oxygen Demand	3	2009/07/28	2009/08/02	EIND SOP-00010	SM 5210 B
Chloride by Automated Colourimetry	4	N/A	2009/07/29	EENVSOP-00055	EPA 325.2
Chemical Oxygen Demand	1	N/A	2009/07/28	EENVSOP-00064	SM 5220D
Total Coliforms and E.Coli	1	2009/07/27	2009/07/28	EIND SOP-00013	SM 9223 A,B
Total Coliforms and E.Coli	3	2009/07/28	2009/07/29	EIND SOP-00013	SM 9223 A,B
Conductivity	2	N/A	2009/07/28	EENVSOP-00054	SM 2510-B
Conductivity	1	N/A	2009/07/29	EENVSOP-00054	SM 2510-B
Hardness	3	N/A	2009/07/27	CAL WI-00053	AEMM, Method 423
Elements by ICP - Dissolved	3	N/A	2009/07/29	CAL SOP-00192	EPA SW846 6010B
Ion Balance	3	N/A	2009/07/27	CAL WI-00053	SM 1030E
Sum of cations, anions	3	N/A	2009/07/27		
Ammonia-N (Total)	1	N/A	2009/07/29	EENVSOP-00058	EPA 350.1
Nitrate and Nitrite	3	N/A	2009/07/29		
Nitrate + Nitrite-N (calculated)	3	N/A	2009/07/27		
Nitrogen, (Nitrite, Nitrate) by IC	2	N/A	2009/07/28	CAL SOP-00060	SM 4110-B
Nitrogen, (Nitrite, Nitrate) by IC	1	N/A	2009/07/29	CAL SOP-00060	SM 4110-B
Oil & Grease (sheen)	4	2009/07/28	2009/07/28	EENVSOP-00121 V.1	
pH	1	N/A	2009/07/29	EENVSOP-00054	SM 4500-H B
pH (Alkalinity titrator)	2	N/A	2009/07/28	EENVSOP-00054	SM 4500-H+B
pH (Alkalinity titrator)	1	N/A	2009/07/29	EENVSOP-00054	SM 4500-H+B

../2

Your C.O.C. #: 86424

Attention: GAVIN DOMITTER
QUANTUM ENVIRONMENTAL GROUP
400 - 4400 Dominion Street
Burnaby, AB
CANADA V5G 4G3

Report Date: 2009/08/04
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sulphate by Automated Colourimetry	4	N/A	2009/07/29	EENVSOP-00057	EPA 375.4
Total Dissolved Solids (Calculated)	3	N/A	2009/07/27		SM 1030E
Total Suspended Solids (NFR)	2	2009/07/28	2009/07/28	EENVSOP-00073	SM 2540 D
Total Suspended Solids (NFR)	2	2009/07/29	2009/07/29	EENVSOP-00073	SM 2540 D

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Solvent Scan (liquid waste, volatiles) (2)	1	2009/07/28	2009/07/29	CAL SOP-00104	EPA 8260 C

(1) This test was performed by Maxxam Ontario (From Edmonton)
(2) This test was performed by Maxxam Calgary

Encryption Key

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

BONNIE PULLISHY,
Email: bonnie.pullishy@maxxamanalytics.com
Phone# (780) 577-7100

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

For Service Group specific validation please refer to the Validation Signature Page
Total cover pages: 2

AT1 BTEX AND F1-F4 IN SOIL (SOIL)

Maxxam ID		P95468		
Sampling Date		2009/07/24		
COC Number		86424		
	Units	**MILL SURFACE**	**RDL**	**QC Batch**
Physical Properties				
Moisture	%	1.9	0.3	3305782
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/kg	22	10	3305697
F3 (C16-C34 Hydrocarbons)	mg/kg	8300	10	3305697
F4 (C34-C50 Hydrocarbons)	mg/kg	2300	10	3305697
Reached Baseline at C50	mg/kg	No	N/A	3305697
OIL & GREASE				
F4SG (Heavy Hydrocarbons-Grav.)	mg/kg	12000	500	3310365
Volatiles				
Benzene	mg/kg	<0.0050	0.0050	3305676
Toluene	mg/kg	<0.020	0.020	3305676
Ethylbenzene	mg/kg	<0.010	0.010	3305676
Xylenes (Total)	mg/kg	<0.040	0.040	3305676
m & p-Xylene	mg/kg	<0.040	0.040	3305676
o-Xylene	mg/kg	<0.020	0.020	3305676
F1 (C6-C10) - BTEX	mg/kg	<12	12	3305676
(C6-C10)	mg/kg	<12	12	3305676
Surrogate Recovery (%)				
4-BROMOFLUOROBENZENE (sur.)	%	111	N/A	3305676
D10-ETHYLBENZENE (sur.)	%	100	N/A	3305676
D4-1,2-DICHLOROETHANE (sur.)	%	116	N/A	3305676
D8-TOLUENE (sur.)	%	97	N/A	3305676
O-TERPHENYL (sur.)	%	99	N/A	3305697

N/A = Not Applicable
RDL = Reportable Detection Limit

RCAP - PARTIAL ROUTINE (WATER)

Maxxam ID		P95343			P95412		
Sampling Date		2009/07/24			2009/07/24		
COC Number		86424			86424		
	Units	**UN-NAMED POND**	**RDL**	**QC Batch**	**ROBERTS LAKE**	**RDL**	**QC Batch**
Calculated Parameters							
Anion Sum	meq/L	1.3	N/A	3305527	2.1	N/A	3305527
Cation Sum	meq/L	1.3	N/A	3305527	2.1	N/A	3305527
Hardness (CaCO3)	mg/L	43	0.5	3305513	36	0.5	3305513
Ion Balance	N/A	0.97	0.01	3305520	0.98	0.01	3305520
Dissolved Nitrate (NO3)	mg/L	0.01	0.01	3305640	<0.01	0.01	3305640
Nitrate plus Nitrite (N)	mg/L	0.003	0.003	3305535	<0.003	0.003	3305535
Dissolved Nitrite (NO2)	mg/L	<0.01	0.01	3305640	<0.01	0.01	3305640
Total Dissolved Solids	mg/L	67	10	3305544	120	10	3305544
Misc. Inorganics							
Conductivity	uS/cm	130	1	3305161	240	1	3305161
pH	N/A	7.89	N/A	3305160	7.44	N/A	3305160
Anions							
Alkalinity (PP as CaCO3)	mg/L	<0.5	0.5	3305152	<0.5	0.5	3305152
Alkalinity (Total as CaCO3)	mg/L	37	0.5	3305152	27	0.5	3305152
Bicarbonate (HCO3)	mg/L	45	0.5	3305152	32	0.5	3305152
Carbonate (CO3)	mg/L	<0.5	0.5	3305152	<0.5	0.5	3305152
Hydroxide (OH)	mg/L	<0.5	0.5	3305152	<0.5	0.5	3305152
Dissolved Sulphate (SO4)	mg/L	<1	1	3309462	5	1	3309462
Dissolved Chloride (Cl)	mg/L	20	1	3309464	52 (1)	2	3309464
Nutrients							
Dissolved Nitrate (N)	mg/L	0.003	0.003	3309578	<0.003	0.003	3307834
Dissolved Nitrite (N)	mg/L	<0.003	0.003	3309578	<0.003	0.003	3307834
Elements							
Dissolved Calcium (Ca)	mg/L	11	0.3	3308711	5.4	0.3	3308711
Dissolved Iron (Fe)	mg/L	0.13	0.06	3308711	<0.06	0.06	3308711
Dissolved Magnesium (Mg)	mg/L	4.0	0.2	3308711	5.6	0.2	3308711
Dissolved Manganese (Mn)	mg/L	<0.004	0.004	3308711	<0.004	0.004	3308711
Dissolved Potassium (K)	mg/L	1.3	0.3	3308711	2.0	0.3	3308711
Dissolved Sodium (Na)	mg/L	8.5	0.5	3308711	30	0.5	3308711

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

RCAP - PARTIAL ROUTINE (WATER)

Maxxam ID		P95445		
Sampling Date		2009/07/24		
COC Number		86424		
	Units	**WTS DISCHARGE**	**RDL**	**QC Batch**
Calculated Parameters				
Anion Sum	meq/L	1.3	N/A	3305527
Cation Sum	meq/L	1.2	N/A	3305527
Hardness (CaCO3)	mg/L	41	0.5	3305513
Ion Balance	N/A	0.96	0.01	3305520
Dissolved Nitrate (NO3)	mg/L	<0.01	0.01	3305641
Nitrate plus Nitrite (N)	mg/L	<0.003	0.003	3305535
Dissolved Nitrite (NO2)	mg/L	<0.01	0.01	3305641
Total Dissolved Solids	mg/L	66	10	3305544
Misc. Inorganics				
Conductivity	uS/cm	130	1	3308330
pH	N/A	7.74	N/A	3308329
Anions				
Alkalinity (PP as CaCO3)	mg/L	<0.5	0.5	3308319
Alkalinity (Total as CaCO3)	mg/L	38	0.5	3308319
Bicarbonate (HCO3)	mg/L	47	0.5	3308319
Carbonate (CO3)	mg/L	<0.5	0.5	3308319
Hydroxide (OH)	mg/L	<0.5	0.5	3308319
Dissolved Sulphate (SO4)	mg/L	<1	1	3309524
Dissolved Chloride (Cl)	mg/L	19	1	3309528
Nutrients				
Dissolved Nitrate (N)	mg/L	<0.003	0.003	3307834
Dissolved Nitrite (N)	mg/L	<0.003	0.003	3307834
Elements				
Dissolved Calcium (Ca)	mg/L	10	0.3	3308711
Dissolved Iron (Fe)	mg/L	0.12	0.06	3308711
Dissolved Magnesium (Mg)	mg/L	3.7	0.2	3308711
Dissolved Manganese (Mn)	mg/L	<0.004	0.004	3308711
Dissolved Potassium (K)	mg/L	1.3	0.3	3308711
Dissolved Sodium (Na)	mg/L	8.7	0.5	3308711

RDL = Reportable Detection Limit

GAS PLANT WASTE WATER ANALYSIS (WATER)

Maxxam ID		P95452		
Sampling Date		2009/07/24		
COC Number		86424		
	Units	**WWTS DISHCHARGE**	**RDL**	**QC Batch**
CONVENTIONALS				
Total Ammonia (N)	mg/L	0.12	0.05	3311547
Demand Parameters				
Total Chemical Oxygen Demand	mg/L	13 (1)	5	3305734
Misc. Inorganics				
pH	N/A	7.73	N/A	3310443
Total Suspended Solids	mg/L	7	1	3305893
Anions				
Dissolved Sulphate (SO4)	mg/L	<1	1	3309462
Dissolved Chloride (Cl)	mg/L	19	1	3309464
Physical Properties				
Visible Sheen	N/A	No	N/A	3306305

RDL = Reportable Detection Limit
(1) Sample was received unpreserved.

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		P95343	P95412		
Sampling Date		2009/07/24	2009/07/24		
COC Number		86424	86424		
	Units	**UN-NAMED POND**	**ROBERTS LAKE**	**RDL**	**QC Batch**
Demand Parameters					
Biochemical Oxygen Demand	mg/L	<3 (1)	<3 (1)	3	3322227
Misc. Inorganics					
Total Suspended Solids	mg/L	2	6	1	3309579
Microbiological Param.					
E.Coli DST	mpn/100mL	4	<1	1	3311552
Total Coliforms DST	mpn/100mL	35 (2)	1 (2)	1	3311552
Physical Properties					
Visible Sheen	N/A	No	No	N/A	3306305

RDL = Reportable Detection Limit
(1) Detection limit raised based on sample volume used for analysis.
(2) Sample was analyzed after holding time expired.

Maxxam ID		P95445			P95452		
Sampling Date		2009/07/24			2009/07/24		
COC Number		86424			86424		
	Units	**WTS DISCHARGE**	**RDL**	**QC Batch**	**WWTS DISHCHARGE**	**RDL**	**QC Batch**
Demand Parameters							
Biochemical Oxygen Demand	mg/L	3	2	3322222	8 (1)	3	3322227
Misc. Inorganics							
Total Suspended Solids	mg/L	<1	1	3305893	N/A	N/A	N/A
Microbiological Param.							
E.Coli DST	mpn/100mL	<1	1	3307106	>2420	1	3311552
Total Coliforms DST	mpn/100mL	<1	1	3307106	>2420 (2)	1	3311552
Physical Properties							
Visible Sheen	N/A	No	N/A	3306305	N/A	N/A	N/A

N/A = Not Applicable
RDL = Reportable Detection Limit
(1) Detection limit raised based on sample volume used for analysis.
(2) Sample was analyzed after holding time expired.

SOLVENT SCAN (WATER)

Maxxam ID		P95487	P95487		
Sampling Date		2009/07/24	2009/07/24		
COC Number		86424	86424		
	Units	**UNKNOWN #2**	**UNKNOWN #2 Lab-Dup**	**RDL**	**QC Batch**
Volatiles					
Benzene	mg/kg	<180	<180	180	3309062
2-Butanone (MEK)	mg/kg	<220000	<220000	220000	3309062
Carbon disulfide	mg/kg	40000	61000	18000	3309062
Carbon tetrachloride	mg/kg	<180	<180	180	3309062
Chlorobenzene	mg/kg	<180	<180	180	3309062
Dichloromethane	mg/kg	<1800	<1800	1800	3309062
Cyclohexanone	mg/kg	<2200000	<2200000	2200000	3309062
Ethyl acetate	mg/kg	<44000	<44000	44000	3309062
Ethylbenzene	mg/kg	<180	<180	180	3309062
Ethyl ether	mg/kg	<1800	<1800	1800	3309062
4-Methyl-2-pentanone (MIBK)	mg/kg	<110000	<110000	110000	3309062
2-Nitropropane	mg/kg	<1100000	<1100000	1100000	3309062
Tetrachloroethene	mg/kg	<180	<180	180	3309062
Toluene	mg/kg	<180	<180	180	3309062
1,1,1-trichloroethane	mg/kg	<180	<180	180	3309062
1,1,2-trichloroethane	mg/kg	<180	<180	180	3309062
Trichloroethene	mg/kg	<180	<180	180	3309062
m & p-Xylene	mg/kg	<350	<350	350	3309062
o-Xylene	mg/kg	<180	<180	180	3309062
Surrogate Recovery (%)					
4-BROMOFLUOROBENZENE (sur.)	%	95	95	N/A	3309062
D4-1,2-DICHLOROETHANE (sur.)	%	93	96	N/A	3309062
D8-TOLUENE (sur.)	%	98	98	N/A	3309062

N/A = Not Applicable
RDL = Reportable Detection Limit

Package 1	5.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

SOLVENT SCAN (WATER) Comments

Sample P95487-01 Solvent Scan (liquid waste, volatiles): Detection limits raised due to dilution to bring analyte within the calibrated range.

Results relate only to the items tested.

QUANTUM ENVIRONMENTAL GROUP
Attention: GAVIN DOMITTER
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EA938820

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3305152	SB8	Calibration Check	Alkalinity (Total as CaCO3)	2009/07/27		100	%	80 - 120
		BLANK	Alkalinity (PP as CaCO3)	2009/07/28	<0.5		mg/L	
			Alkalinity (Total as CaCO3)	2009/07/28	0.8, RDL=0.5		mg/L	
			Bicarbonate (HCO3)	2009/07/28	0.9, RDL=0.5		mg/L	
			Carbonate (CO3)	2009/07/28	<0.5		mg/L	
			Hydroxide (OH)	2009/07/28	<0.5		mg/L	
		RPD	Alkalinity (PP as CaCO3)	2009/07/28	NC		%	20
			Alkalinity (Total as CaCO3)	2009/07/28	0.8		%	20
			Bicarbonate (HCO3)	2009/07/28	0.8		%	20
			Carbonate (CO3)	2009/07/28	NC		%	20
			Hydroxide (OH)	2009/07/28	NC		%	20
3305160	SB8	Calibration Check	pH	2009/07/27		102	%	97 - 103
		RPD	pH	2009/07/28	0.9		%	5
3305161	SB8	Calibration Check	Conductivity	2009/07/27		100	%	80 - 120
		BLANK	Conductivity	2009/07/27	<1		uS/cm	
		RPD	Conductivity	2009/07/28	0.4		%	20
3305676	DR3	MATRIX SPIKE	4-BROMOFLUOROBENZENE (sur.)	2009/07/28		102	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/07/28		110	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/07/28		111	%	60 - 140
			D8-TOLUENE (sur.)	2009/07/28		105	%	60 - 140
			Benzene	2009/07/28		91	%	60 - 140
			Toluene	2009/07/28		92	%	60 - 140
			Ethylbenzene	2009/07/28		98	%	60 - 140
			m & p-Xylene	2009/07/28		104	%	60 - 140
			o-Xylene	2009/07/28		98	%	60 - 140
			(C6-C10)	2009/07/28		110	%	60 - 140
		SPIKE	4-BROMOFLUOROBENZENE (sur.)	2009/07/28		107	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/07/28		102	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/07/28		105	%	60 - 140
			D8-TOLUENE (sur.)	2009/07/28		103	%	60 - 140
			Benzene	2009/07/28		91	%	60 - 140
			Toluene	2009/07/28		92	%	60 - 140
			Ethylbenzene	2009/07/28		101	%	60 - 140
			m & p-Xylene	2009/07/28		102	%	60 - 140
			o-Xylene	2009/07/28		95	%	60 - 140
			(C6-C10)	2009/07/28		100	%	80 - 120
		BLANK	4-BROMOFLUOROBENZENE (sur.)	2009/07/28		105	%	60 - 140
			D10-ETHYLBENZENE (sur.)	2009/07/28		105	%	30 - 130
			D4-1,2-DICHLOROETHANE (sur.)	2009/07/28		111	%	60 - 140
			D8-TOLUENE (sur.)	2009/07/28		101	%	60 - 140
			Benzene	2009/07/28	<0.0050		mg/kg	
			Toluene	2009/07/28	<0.020		mg/kg	
			Ethylbenzene	2009/07/28	<0.010		mg/kg	
			Xylenes (Total)	2009/07/28	<0.040		mg/kg	
			m & p-Xylene	2009/07/28	<0.040		mg/kg	
			o-Xylene	2009/07/28	<0.020		mg/kg	
			F1 (C6-C10) - BTEX	2009/07/28	<12		mg/kg	
			(C6-C10)	2009/07/28	<12		mg/kg	
		RPD	Benzene	2009/07/28	NC		%	50
			Toluene	2009/07/28	NC		%	50
			Ethylbenzene	2009/07/28	NC		%	50
			Xylenes (Total)	2009/07/28	NC		%	50
			m & p-Xylene	2009/07/28	NC		%	50
			o-Xylene	2009/07/28	NC		%	50
			F1 (C6-C10) - BTEX	2009/07/28	NC		%	50

QUANTUM ENVIRONMENTAL GROUP
Attention: GAVIN DOMITTER
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938820

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3305676	DR3	RPD	(C6-C10)	2009/07/28	NC		%	50
3305697	JT7	MATRIX SPIKE	O-TERPHENYL (sur.)	2009/07/28		81	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/07/28		90	%	50 - 130
			F3 (C16-C34 Hydrocarbons)	2009/07/28		99	%	50 - 130
			F4 (C34-C50 Hydrocarbons)	2009/07/28		107	%	50 - 130
		SPIKE	O-TERPHENYL (sur.)	2009/07/28		89	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/07/28		100	%	80 - 120
			F3 (C16-C34 Hydrocarbons)	2009/07/28		110	%	80 - 120
			F4 (C34-C50 Hydrocarbons)	2009/07/28		117	%	80 - 120
		BLANK	O-TERPHENYL (sur.)	2009/07/28		105	%	50 - 130
			F2 (C10-C16 Hydrocarbons)	2009/07/28	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2009/07/28	<10		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2009/07/28	<10		mg/kg	
		RPD	F2 (C10-C16 Hydrocarbons)	2009/07/28	NC		%	50
			F3 (C16-C34 Hydrocarbons)	2009/07/28	7.2		%	50
			F4 (C34-C50 Hydrocarbons)	2009/07/28	2.1		%	50
3305734	LF1	Calibration Check	Total Chemical Oxygen Demand	2009/07/28		102	%	80 - 120
		MATRIX SPIKE	Total Chemical Oxygen Demand	2009/07/28		104	%	80 - 120
		BLANK	Total Chemical Oxygen Demand	2009/07/28	<5		mg/L	
		RPD	Total Chemical Oxygen Demand	2009/07/28	NC		%	20
3305782	JP6	BLANK	Moisture	2009/07/28	<0.3		%	
		RPD	Moisture	2009/07/28	0.9		%	20
3305893	RW3	MATRIX SPIKE	Total Suspended Solids	2009/07/28		100	%	80 - 120
		SPIKE	Total Suspended Solids	2009/07/28		97	%	80 - 120
		BLANK	Total Suspended Solids	2009/07/28	<1		mg/L	
		RPD	Total Suspended Solids	2009/07/28	0 (1)		%	20
3307106	JA6	BLANK	E.Coli DST	2009/07/28	<1		mpn/100mL	
			Total Coliforms DST	2009/07/28	<1		mpn/100mL	
3307834	KM7	Calibration Check	Dissolved Nitrate (N)	2009/07/28		100	%	80 - 120
			Dissolved Nitrite (N)	2009/07/28		97	%	80 - 120
		MATRIX SPIKE	Dissolved Nitrate (N)	2009/07/28		100	%	80 - 120
			Dissolved Nitrite (N)	2009/07/28		97	%	80 - 120
		BLANK	Dissolved Nitrate (N)	2009/07/28	0.003, RDL=0.003		mg/L	
			Dissolved Nitrite (N)	2009/07/28	<0.003		mg/L	
		RPD	Dissolved Nitrate (N)	2009/07/28	0		%	20
			Dissolved Nitrite (N)	2009/07/28	NC		%	20
3308319	MG5	Calibration Check	Alkalinity (Total as CaCO3)	2009/07/29		101	%	80 - 120
		BLANK	Alkalinity (PP as CaCO3)	2009/07/29	<0.5		mg/L	
			Alkalinity (Total as CaCO3)	2009/07/29	<0.5		mg/L	
			Bicarbonate (HCO3)	2009/07/29	<0.5		mg/L	
			Carbonate (CO3)	2009/07/29	<0.5		mg/L	
			Hydroxide (OH)	2009/07/29	<0.5		mg/L	
		RPD	Alkalinity (PP as CaCO3)	2009/07/29	NC		%	20
			Alkalinity (Total as CaCO3)	2009/07/29	0.7		%	20
			Bicarbonate (HCO3)	2009/07/29	0.7		%	20
			Carbonate (CO3)	2009/07/29	NC		%	20
			Hydroxide (OH)	2009/07/29	NC		%	20
3308329	MG5	Calibration Check	pH	2009/07/29		100	%	97 - 103
		RPD	pH	2009/07/29	1.1		%	5
3308330	MG5	Calibration Check	Conductivity	2009/07/29		101	%	80 - 120
		BLANK	Conductivity	2009/07/29	2, RDL=1		uS/cm	
		RPD	Conductivity	2009/07/29	0.6		%	20
3308711	RI3	Calibration Check	Dissolved Calcium (Ca)	2009/07/29		106	%	80 - 120
			Dissolved Iron (Fe)	2009/07/29		94	%	80 - 120
			Dissolved Magnesium (Mg)	2009/07/29		105	%	80 - 120

QUANTUM ENVIRONMENTAL GROUP
Attention: GAVIN DOMITTER
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938820

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3308711	RI3	Calibration Check	Dissolved Manganese (Mn)	2009/07/29		105	%	80 - 120
			Dissolved Potassium (K)	2009/07/29		105	%	80 - 120
			Dissolved Sodium (Na)	2009/07/29		105	%	80 - 120
		MATRIX SPIKE	Dissolved Calcium (Ca)	2009/07/29		91	%	80 - 120
			Dissolved Iron (Fe)	2009/07/29		NC	%	80 - 120
			Dissolved Magnesium (Mg)	2009/07/29		84	%	80 - 120
			Dissolved Manganese (Mn)	2009/07/29		90	%	80 - 120
			Dissolved Potassium (K)	2009/07/29		92	%	80 - 120
			Dissolved Sodium (Na)	2009/07/29		NC	%	80 - 120
		BLANK	Dissolved Calcium (Ca)	2009/07/29	<0.3		mg/L	
			Dissolved Iron (Fe)	2009/07/29	<0.06		mg/L	
			Dissolved Magnesium (Mg)	2009/07/29	<0.2		mg/L	
			Dissolved Manganese (Mn)	2009/07/29	<0.004		mg/L	
			Dissolved Potassium (K)	2009/07/29	<0.3		mg/L	
			Dissolved Sodium (Na)	2009/07/29	<0.5		mg/L	
		RPD	Dissolved Calcium (Ca)	2009/07/29	0.4		%	20
			Dissolved Iron (Fe)	2009/07/29	0.2		%	20
			Dissolved Magnesium (Mg)	2009/07/29	0.8		%	20
			Dissolved Manganese (Mn)	2009/07/29	0.6		%	20
			Dissolved Potassium (K)	2009/07/29	3.3		%	20
			Dissolved Sodium (Na)	2009/07/29	1.3 (2)		%	20
3309062	WW1	SPIKE	4-BROMOFLUOROBENZENE (sur.)	2009/07/28		95	%	74 - 121
			D4-1,2-DICHLOROETHANE (sur.)	2009/07/28		90	%	70 - 121
			D8-TOLUENE (sur.)	2009/07/28		99	%	80 - 117
			Benzene	2009/07/28		99	%	70 - 130
			2-Butanone (MEK)	2009/07/28		71	%	70 - 130
			Carbon disulfide	2009/07/28		115	%	70 - 130
			Carbon tetrachloride	2009/07/28		82	%	70 - 130
			Chlorobenzene	2009/07/28		96	%	70 - 130
			Dichloromethane	2009/07/28		93	%	70 - 130
			Cyclohexanone	2009/07/28		71	%	70 - 130
			Ethyl acetate	2009/07/28		70	%	70 - 130
			Ethylbenzene	2009/07/28		103	%	70 - 130
			Ethyl ether	2009/07/28		102	%	70 - 130
			4-Methyl-2-pentanone (MIBK)	2009/07/28		82	%	70 - 130
			2-Nitropropane	2009/07/28		82	%	70 - 130
			Tetrachloroethene	2009/07/28		94	%	70 - 130
			Toluene	2009/07/28		98	%	70 - 130
			1,1,1-trichloroethane	2009/07/28		87	%	70 - 130
			1,1,2-trichloroethane	2009/07/28		74	%	70 - 130
			Trichloroethene	2009/07/28		93	%	70 - 130
			m & p-Xylene	2009/07/28		112	%	70 - 130
			o-Xylene	2009/07/28		104	%	70 - 130
		BLANK	4-BROMOFLUOROBENZENE (sur.)	2009/07/29		95	%	74 - 121
			D4-1,2-DICHLOROETHANE (sur.)	2009/07/29		89	%	70 - 121
			D8-TOLUENE (sur.)	2009/07/29		97	%	80 - 117
			Benzene	2009/07/29	<0.00040		mg/kg	
			2-Butanone (MEK)	2009/07/29	<0.050		mg/kg	
			Carbon disulfide	2009/07/29	<0.0040		mg/kg	
			Carbon tetrachloride	2009/07/29	<0.00040		mg/kg	
			Chlorobenzene	2009/07/29	<0.00040		mg/kg	
			Dichloromethane	2009/07/29	<0.0040		mg/kg	
			Cyclohexanone	2009/07/29	<0.50		mg/kg	
			Ethyl acetate	2009/07/29	<0.010		mg/kg	
			Ethylbenzene	2009/07/29	<0.00040		mg/kg	

QUANTUM ENVIRONMENTAL GROUP
Attention: GAVIN DOMITTER
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938820

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3309062	WW1	BLANK	Ethyl ether	2009/07/29	<0.00040		mg/kg	
			4-Methyl-2-pentanone (MIBK)	2009/07/29	<0.025		mg/kg	
			2-Nitropropane	2009/07/29	<0.25		mg/kg	
			Tetrachloroethene	2009/07/29	<0.00040		mg/kg	
			Toluene	2009/07/29	<0.00040		mg/kg	
			1,1,1-trichloroethane	2009/07/29	<0.00040		mg/kg	
			1,1,2-trichloroethane	2009/07/29	<0.00040		mg/kg	
			Trichloroethene	2009/07/29	<0.00040		mg/kg	
			m & p-Xylene	2009/07/29	<0.00080		mg/kg	
			o-Xylene	2009/07/29	<0.00040		mg/kg	
		RPD [P95487-01]	Benzene	2009/07/29	NC		%	40
			2-Butanone (MEK)	2009/07/29	NC		%	40
			Carbon disulfide	2009/07/29	NC		%	40
			Carbon tetrachloride	2009/07/29	NC		%	40
			Chlorobenzene	2009/07/29	NC		%	40
			Dichloromethane	2009/07/29	NC		%	40
			Cyclohexanone	2009/07/29	NC		%	40
			Ethyl acetate	2009/07/29	NC		%	40
			Ethylbenzene	2009/07/29	NC		%	40
			Ethyl ether	2009/07/29	NC		%	40
			4-Methyl-2-pentanone (MIBK)	2009/07/29	NC		%	40
			2-Nitropropane	2009/07/29	NC		%	40
			Tetrachloroethene	2009/07/29	NC		%	40
			Toluene	2009/07/29	NC		%	40
			1,1,1-trichloroethane	2009/07/29	NC		%	40
			1,1,2-trichloroethane	2009/07/29	NC		%	40
			Trichloroethene	2009/07/29	NC		%	40
			m & p-Xylene	2009/07/29	NC		%	40
			o-Xylene	2009/07/29	NC		%	40
3309462	MKA	MATRIX SPIKE	Dissolved Sulphate (SO4)	2009/07/29		NC	%	80 - 120
		SPIKE	Dissolved Sulphate (SO4)	2009/07/29		102	%	80 - 120
		BLANK	Dissolved Sulphate (SO4)	2009/07/29	<1		mg/L	
		RPD	Dissolved Sulphate (SO4)	2009/07/29	5.0 (2)		%	20
3309464	MKA	MATRIX SPIKE	Dissolved Chloride (Cl)	2009/07/29		106	%	80 - 120
		SPIKE	Dissolved Chloride (Cl)	2009/07/29		103	%	80 - 120
		BLANK	Dissolved Chloride (Cl)	2009/07/29	<1		mg/L	
		RPD	Dissolved Chloride (Cl)	2009/07/29	1		%	20
3309524	MKA	MATRIX SPIKE	Dissolved Sulphate (SO4)	2009/07/29		N/C	%	80 - 120
		SPIKE	Dissolved Sulphate (SO4)	2009/07/29		104	%	80 - 120
		BLANK	Dissolved Sulphate (SO4)	2009/07/29	<1		mg/L	
		RPD	Dissolved Sulphate (SO4)	2009/07/29	0.2 (2)		%	20
3309528	MKA	MATRIX SPIKE	Dissolved Chloride (Cl)	2009/07/29		107	%	80 - 120
		SPIKE	Dissolved Chloride (Cl)	2009/07/29		102	%	80 - 120
		BLANK	Dissolved Chloride (Cl)	2009/07/29	<1		mg/L	
		RPD	Dissolved Chloride (Cl)	2009/07/29	0.3		%	20
3309578	JQ	Calibration Check	Dissolved Nitrate (N)	2009/07/29		100	%	80 - 120
			Dissolved Nitrite (N)	2009/07/29		97	%	80 - 120
		MATRIX SPIKE	Dissolved Nitrate (N)	2009/07/29		101	%	80 - 120
			Dissolved Nitrite (N)	2009/07/29		98	%	80 - 120
		BLANK	Dissolved Nitrate (N)	2009/07/29	<0.003		mg/L	
			Dissolved Nitrite (N)	2009/07/29	<0.003		mg/L	
		RPD	Dissolved Nitrate (N)	2009/07/29	1		%	20
			Dissolved Nitrite (N)	2009/07/29	NC		%	20
3309579	RW3	MATRIX SPIKE	Total Suspended Solids	2009/07/29		100	%	80 - 120
		SPIKE	Total Suspended Solids	2009/07/29		97	%	80 - 120

QUANTUM ENVIRONMENTAL GROUP
Attention: GAVIN DOMITTER
Client Project #:
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938820

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3309579	RW3	BLANK	Total Suspended Solids	2009/07/29	<1		mg/L	
		RPD	Total Suspended Solids	2009/07/29	NC (1)		%	20
3310365	AR6	SPIKE	F4SG (Heavy Hydrocarbons-Grav.)	2009/07/29		106	%	70 - 130
		BLANK	F4SG (Heavy Hydrocarbons-Grav.)	2009/07/29	<500		mg/kg	
		RPD	F4SG (Heavy Hydrocarbons-Grav.)	2009/07/29	20.6		%	50
3310443	SB8	Calibration Check	pH	2009/07/29		101	%	97 - 103
		RPD	pH	2009/07/29	0.7		%	5
3311547	KB9	MATRIX SPIKE	Total Ammonia (N)	2009/07/29		93	%	80 - 120
		SPIKE	Total Ammonia (N)	2009/07/29		107	%	86 - 110
		BLANK	Total Ammonia (N)	2009/07/29	<0.05		mg/L	
		RPD	Total Ammonia (N)	2009/07/29	NC		%	20
3311552	JA6	BLANK	E.Coli DST	2009/07/29	<1		mpn/100mL	
			Total Coliforms DST	2009/07/29	<1		mpn/100mL	
3322222	HW	Calibration Check	Biochemical Oxygen Demand	2009/08/01		95	%	81 - 119
		BLANK	Biochemical Oxygen Demand	2009/08/01	<2		mg/L	
3322227	HW	Calibration Check	Biochemical Oxygen Demand	2009/08/02		98	%	81 - 119
		BLANK	Biochemical Oxygen Demand	2009/08/02	<2		mg/L	

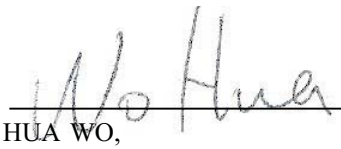
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Calibration Check: A calibration standard analyzed at different times to evaluate on-going calibration accuracy.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) Detection limit raised based on sample volume used for analysis.
(2) Detection limits raised due to dilution to bring analyte within the calibrated range.

Validation Signature Page

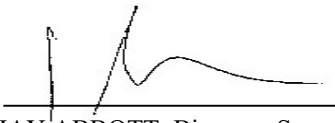
Maxxam Job #: A938820

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

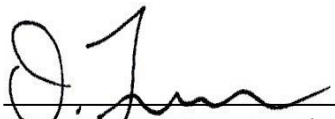
DIANE ZACHARKIW, Scientific Specialist



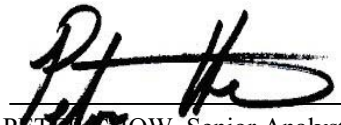
HUA WO,



JAY ABBOTT, Bioassay Supervisor



ORLA JORGENSEN, Organics Supervisor



PETER CHOW, Senior Analyst

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

321 PLEASE RUSH EMAIL RESULTS TO gdomitter@qmlp.ca

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8 | Ph: (403) 291-3077 | Fax: (403) 735-2240 | Toll free: (800) 386-7247
Edmonton: 9331 – 48 Street, T6B 2R4 | Ph: (780) 465-1212 | Fax: (780) 450-4187 | Toll free: (877) 465-8889
www.maxxamanalytics.com

86424 A938820

CHAIN OF CUSTODY

Page: 1 of 1

Invoice To: Require Report? Yes ☑ No ☐

Company Name: Quantum Murray LP.
Contact Name: Gavin Domitter
Address: 100 - 3600 Viking Way, Richmond
Prov: BC PC:
Contact #s: Ph: (604) 314-4629 Fax: (604) 238-2236

Report To: (PLEASE EMAIL AS PER ABOVE)
AS PER INVOICE ADDRESS
Prov: PC:
Ph: Fax:

PO # / AFE #:
Quotation #:
Project #:
Project Name:
Location:
Sampler's Initials:

DETECTION LIMIT REQUIREMENTS:
Check the applicable criterion and indicate land use
☐ AT1
☐ CCME
☑ OTHER

REPORT DISTRIBUTION:
EMAIL ADDRESS(S):

SERVICE REQUESTED:
☑ RUSH (Please ensure you contact the lab to reserve)
Date Required: ASAP-
☐ REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)[1]	Assessment ICP Metals[2]	Paint Filter ☒	Flashpoint ☒	pH (1:1)	TCLP ☐	BTEX ☐	Metals ☐	WATERS: BTEX F1 ☐ VOCs	BTEX F1-F2 ☐	BTEX F1-F4	Routine Water Package	Turb ☐	F ☐	Total ☐ Preserved	Total ☐ Not Preserved	Dissolved ☐ Preserved ☐ Filtered	Dissolved ☐ Not Preserved ☐ Not Filtered	Mercury ☐ Total ☐ Dissolved	Ammonia ☐	TKN ☐	COD ☐	TOC ☐	DOC ☐	REGULATED METALS (CCME / AT1)[2]	OTHER TEST(S): Total PCB	TPH	Aliphatics	GC Solvent Scan (call to discuss)	pH, TSS, O&G	BODs, coliforms	*HOLD for 60 Days	# of Containers Submitted
1	Un-named Pond	W																✓																					
2	Roberts Lake	W																✓																					
3	WTS Discharge Potabl.	W																M																					
4	WWTS Discharge -	W	outside water.															~~M~~																					
5	Mill Surface	S	09/07/24																												✓	✓							
6	Unknown #1	S	↓																												✓								
7	Unknown #2	L	↓							✓																								✓					
8																																						
9																																						
10																																						
11																																						
12																																						

*All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #:

Relinquished By: Date/Time: 09/07/26 10:35 pm
Sign and Print:

COMMENTS/SPECIAL INSTRUCTIONS:

# JARS USED & NOT SUBMITTED	Received By	Temperature			Ice
	27/07/09 12:35 RT	4	7	6	Y
	CUSTODY SEAL (YES) / NO				

Maxxam Analytics International Corporation o/a Maxxam Analytics CAL FCD-00357 Rev6 08/12

Your Project #: 34807 ROBERTS BAY
Your C.O.C. #: 67076

Attention: HENRY WONG
SENES CONSULTANTS LIMITED
RICHMOND HILL
121 GRANTON DRIVE, UNIT 12
Vancouver, ON
CANADA L4B 3N4

Report Date: 2009/07/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: A938567
Received: 2009/07/24, 14:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (pp, total), CO3,HCO3,OH	1	N/A	2009/07/26	EENVSOP-00054	SM 2320-B
Cadmium - low level CCME (Total)	1	2009/07/25	2009/07/26	CAL SOP-00191	EPA SW-846 6020A
Chloride (IC)	1	N/A	2009/07/27	EENVSOP-00055	SM 4110-B
Conductivity	1	N/A	2009/07/26	EENVSOP-00054	SM 2510-B
Hardness	1	N/A	2009/07/27	CAL WI-00053	AEMM, Method 423
Elements by ICP - Dissolved	1	N/A	2009/07/27	CAL SOP-00192	EPA SW846 6010B
Elements by ICP - Total	1	2009/07/26	2009/07/27	CAL SOP-00192	EPA SW846 6010B
Elements by ICPMS - Total	1	2009/07/26	2009/07/26	CAL SOP-00191	EPA SW-846 6020A
Ion Balance	1	N/A	2009/07/27	CAL WI-00053	SM 1030E
Sum of cations, anions	1	N/A	2009/07/27		
Nitrate and Nitrite	1	N/A	2009/07/27		
Nitrate + Nitrite-N (calculated)	1	N/A	2009/07/27		
Nitrogen, (Nitrite, Nitrate) by IC	1	N/A	2009/07/26	CAL SOP-00060	SM 4110-B
pH (Alkalinity titrator)	1	N/A	2009/07/26	EENVSOP-00054	SM 4500-H+B
Sulphate (SO4)	1	N/A	2009/07/27	EENVSOP-00055	SM 4110-B
Total Dissolved Solids (Calculated)	1	N/A	2009/07/27		SM 1030E

Encryption Key

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

BONNIE PULLISHY,
Email: bonnie.pullishy@maxxamanalytics.com
Phone# (780) 577-7100

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

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

Total cover pages: 1

Maxxam Job #: A938567
Report Date: 2009/07/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: HW

RCAP - PARTIAL ROUTINE (WATER)

Maxxam ID		P93573		
Sampling Date		2009/07/23		
COC Number		67076		
	Units	**TP09-1**	**RDL**	**QC Batch**
Calculated Parameters				
Anion Sum	meq/L	2.8	N/A	3301767
Cation Sum	meq/L	2.8	N/A	3301767
Hardness (CaCO3)	mg/L	120	0.5	3301765
Ion Balance	N/A	0.99	0.01	3301766
Dissolved Nitrate (NO3)	mg/L	ND	0.01	3301768
Nitrate plus Nitrite (N)	mg/L	ND	0.003	3301769
Dissolved Nitrite (NO2)	mg/L	ND	0.01	3301768
Total Dissolved Solids	mg/L	150	10	3301770
Misc. Inorganics				
Conductivity	uS/cm	280	1	3301936
pH	N/A	8.21	N/A	3301935
Anions				
Alkalinity (PP as CaCO3)	mg/L	ND	0.5	3301933
Alkalinity (Total as CaCO3)	mg/L	99	0.5	3301933
Bicarbonate (HCO3)	mg/L	120	0.5	3301933
Carbonate (CO3)	mg/L	ND	0.5	3301933
Hydroxide (OH)	mg/L	ND	0.5	3301933
Nutrients				
Dissolved Nitrate (N)	mg/L	ND	0.003	3301963
Dissolved Nitrite (N)	mg/L	ND	0.003	3301963
Elements				
Dissolved Calcium (Ca)	mg/L	36	0.3	3302037
Dissolved Iron (Fe)	mg/L	ND	0.06	3302037
Dissolved Magnesium (Mg)	mg/L	8.1	0.2	3302037
Dissolved Manganese (Mn)	mg/L	0.004	0.004	3302037
Dissolved Potassium (K)	mg/L	2.8	0.3	3302037
Dissolved Sodium (Na)	mg/L	6.6	0.5	3302037

ND = Not detected
RDL = Reportable Detection Limit

Maxxam Job #: A938567
Report Date: 2009/07/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: HW

REGULATED METALS (CCME/AT1) - TOTAL

Maxxam ID		P93573		
Sampling Date		2009/07/23		
COC Number		67076		
	Units	**TP09-1**	**RDL**	**QC Batch**
Low Level Elements				
Total Cadmium (Cd)	ug/L	0.062	0.005	3301763
Elements				
Total Aluminum (Al)	mg/L	0.11	0.001	3301995
Total Antimony (Sb)	mg/L	0.0054	0.0002	3301995
Total Arsenic (As)	mg/L	0.016	0.0002	3301995
Total Barium (Ba)	mg/L	0.10	0.01	3302074
Total Beryllium (Be)	mg/L	ND	0.001	3301995
Total Boron (B)	mg/L	0.02	0.02	3302074
Total Calcium (Ca)	mg/L	37	0.3	3302074
Total Chromium (Cr)	mg/L	ND	0.001	3301995
Total Cobalt (Co)	mg/L	ND	0.0003	3301995
Total Copper (Cu)	mg/L	0.0038	0.0002	3301995
Total Iron (Fe)	mg/L	0.14	0.06	3302074
Total Lead (Pb)	mg/L	0.0035	0.0002	3301995
Total Lithium (Li)	mg/L	ND	0.02	3302074
Total Magnesium (Mg)	mg/L	8.3	0.2	3302074
Total Manganese (Mn)	mg/L	0.009	0.004	3302074
Total Molybdenum (Mo)	mg/L	0.013	0.0002	3301995
Total Nickel (Ni)	mg/L	0.0025	0.0005	3301995
Total Phosphorus (P)	mg/L	ND	0.1	3302074
Total Potassium (K)	mg/L	2.8	0.3	3302074
Total Selenium (Se)	mg/L	ND	0.0002	3301995
Total Silicon (Si)	mg/L	0.3	0.1	3302074
Total Silver (Ag)	mg/L	0.0001	0.0001	3301995
Total Sodium (Na)	mg/L	6.2	0.5	3302074
Total Strontium (Sr)	mg/L	0.06	0.02	3302074
Total Sulphur (S)	mg/L	11	0.2	3302074
Total Thallium (Tl)	mg/L	ND	0.0002	3301995
Total Tin (Sn)	mg/L	ND	0.001	3301995
Total Titanium (Ti)	mg/L	0.002	0.001	3301995
Total Uranium (U)	mg/L	0.0046	0.0001	3301995
Total Vanadium (V)	mg/L	ND	0.001	3301995

ND = Not detected
RDL = Reportable Detection Limit

Maxxam Job #: A938567
Report Date: 2009/07/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: HW

REGULATED METALS (CCME/AT1) - TOTAL

Maxxam ID		P93573		
Sampling Date		2009/07/23		
COC Number		67076		
	Units	**TP09-1**	**RDL**	**QC Batch**
Total Zinc (Zn)	mg/L	0.005	0.003	3301995

RDL = Reportable Detection Limit

Maxxam Job #: A938567
Report Date: 2009/07/27

SENES CONSULTANTS LIMITED
Client Project #: 34807 ROBERTS BAY

Sampler Initials: HW

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		P93573		
Sampling Date		2009/07/23		
COC Number		67076		
	Units	**TP09-1**	**RDL**	**QC Batch**
Anions				
Dissolved Chloride (Cl)	mg/L	6.8	0.5	3304004
Dissolved Sulphate (SO4)	mg/L	33 (1)	0.5	3304005

RDL = Reportable Detection Limit
(1) Matrix spike non calculable due to high concentration of original analyte.

General Comments

Results relate only to the items tested.

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807 ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report

Maxxam Job Number: EA938567

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3301933	MG5	Calibration Check	Alkalinity (Total as CaCO3)	2009/07/26		100	%	80 - 120
		BLANK	Alkalinity (PP as CaCO3)	2009/07/26	ND, RDL=0.5		mg/L	
			Alkalinity (Total as CaCO3)	2009/07/26	0.5, RDL=0.5		mg/L	
			Bicarbonate (HCO3)	2009/07/26	0.6, RDL=0.5		mg/L	
			Carbonate (CO3)	2009/07/26	ND, RDL=0.5		mg/L	
			Hydroxide (OH)	2009/07/26	ND, RDL=0.5		mg/L	
		RPD	Alkalinity (PP as CaCO3)	2009/07/26	NC		%	20
			Alkalinity (Total as CaCO3)	2009/07/26	0.9		%	20
			Bicarbonate (HCO3)	2009/07/26	0.9		%	20
			Carbonate (CO3)	2009/07/26	NC		%	20
			Hydroxide (OH)	2009/07/26	NC		%	20
3301935	MG5	Calibration Check	pH	2009/07/26		101	%	97 - 103
		RPD	pH	2009/07/26	0.007		%	5
3301936	MG5	Calibration Check	Conductivity	2009/07/26		102	%	80 - 120
		BLANK	Conductivity	2009/07/26	1, RDL=1		uS/cm	
		RPD	Conductivity	2009/07/26	0		%	20
3301963	KM7	Calibration Check	Dissolved Nitrate (N)	2009/07/26		99	%	80 - 120
			Dissolved Nitrite (N)	2009/07/26		96	%	80 - 120
		MATRIX SPIKE	Dissolved Nitrate (N)	2009/07/26		103	%	80 - 120
			Dissolved Nitrite (N)	2009/07/26		100	%	80 - 120
		BLANK	Dissolved Nitrate (N)	2009/07/26	0.003, RDL=0.003		mg/L	
			Dissolved Nitrite (N)	2009/07/26	ND, RDL=0.003		mg/L	
		RPD	Dissolved Nitrate (N)	2009/07/26	NC		%	20
			Dissolved Nitrite (N)	2009/07/26	NC		%	20
3301995	EO1	Calibration Check	Total Aluminum (Al)	2009/07/26		89	%	80 - 120
			Total Antimony (Sb)	2009/07/26		84	%	80 - 120
			Total Arsenic (As)	2009/07/26		88	%	80 - 120
			Total Beryllium (Be)	2009/07/26		87	%	80 - 120
			Total Chromium (Cr)	2009/07/26		84	%	80 - 120
			Total Cobalt (Co)	2009/07/26		83	%	80 - 120
			Total Copper (Cu)	2009/07/26		82	%	80 - 120
			Total Lead (Pb)	2009/07/26		86	%	80 - 120
			Total Molybdenum (Mo)	2009/07/26		91	%	80 - 120
			Total Nickel (Ni)	2009/07/26		81	%	80 - 120
			Total Selenium (Se)	2009/07/26		87	%	80 - 120
			Total Silver (Ag)	2009/07/26		89	%	80 - 120
			Total Thallium (Tl)	2009/07/26		86	%	80 - 120
			Total Tin (Sn)	2009/07/26		91	%	80 - 120
			Total Titanium (Ti)	2009/07/26		85	%	80 - 120
			Total Uranium (U)	2009/07/26		89	%	80 - 120
			Total Vanadium (V)	2009/07/26		87	%	80 - 120
			Total Zinc (Zn)	2009/07/26		83	%	80 - 120
		MATRIX SPIKE	Total Aluminum (Al)	2009/07/26		NC	%	80 - 120
			Total Antimony (Sb)	2009/07/26		105	%	80 - 120
			Total Arsenic (As)	2009/07/26		91	%	80 - 120
			Total Beryllium (Be)	2009/07/26		86	%	80 - 120
			Total Chromium (Cr)	2009/07/26		89	%	80 - 120
			Total Cobalt (Co)	2009/07/26		91	%	80 - 120
			Total Copper (Cu)	2009/07/26		82	%	80 - 120
			Total Lead (Pb)	2009/07/26		95	%	80 - 120
			Total Molybdenum (Mo)	2009/07/26		109	%	80 - 120
			Total Nickel (Ni)	2009/07/26		87	%	80 - 120
			Total Selenium (Se)	2009/07/26		88	%	80 - 120
			Total Silver (Ag)	2009/07/26		99	%	80 - 120
			Total Thallium (Tl)	2009/07/26		95	%	80 - 120

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807 ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938567

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3301995	EO1	MATRIX SPIKE	Total Tin (Sn)	2009/07/26		82	%	80 - 120
			Total Titanium (Ti)	2009/07/26		NC	%	80 - 120
			Total Uranium (U)	2009/07/26		99	%	80 - 120
			Total Vanadium (V)	2009/07/26		100	%	80 - 120
			Total Zinc (Zn)	2009/07/26		84	%	80 - 120
		BLANK	Total Aluminum (Al)	2009/07/26	ND, RDL=0.001		mg/L	
			Total Antimony (Sb)	2009/07/26	ND, RDL=0.0002		mg/L	
			Total Arsenic (As)	2009/07/26	ND, RDL=0.0002		mg/L	
			Total Beryllium (Be)	2009/07/26	ND, RDL=0.001		mg/L	
			Total Chromium (Cr)	2009/07/26	ND, RDL=0.001		mg/L	
			Total Cobalt (Co)	2009/07/26	ND, RDL=0.0003		mg/L	
			Total Copper (Cu)	2009/07/26	0.0002, RDL=0.0002		mg/L	
			Total Lead (Pb)	2009/07/26	ND, RDL=0.0002		mg/L	
			Total Molybdenum (Mo)	2009/07/26	ND, RDL=0.0002		mg/L	
			Total Nickel (Ni)	2009/07/26	ND, RDL=0.0005		mg/L	
			Total Selenium (Se)	2009/07/26	ND, RDL=0.0002		mg/L	
			Total Silver (Ag)	2009/07/26	ND, RDL=0.0001		mg/L	
			Total Thallium (Tl)	2009/07/26	ND, RDL=0.0002		mg/L	
			Total Tin (Sn)	2009/07/26	ND, RDL=0.001		mg/L	
			Total Titanium (Ti)	2009/07/26	ND, RDL=0.001		mg/L	
			Total Uranium (U)	2009/07/26	ND, RDL=0.0001		mg/L	
			Total Vanadium (V)	2009/07/26	ND, RDL=0.001		mg/L	
			Total Zinc (Zn)	2009/07/26	ND, RDL=0.003		mg/L	
		RPD	Total Aluminum (Al)	2009/07/26	12.0 (1)		%	20
			Total Antimony (Sb)	2009/07/26	NC		%	20
			Total Arsenic (As)	2009/07/26	4.4		%	20
			Total Beryllium (Be)	2009/07/26	NC		%	20
			Total Chromium (Cr)	2009/07/26	NC		%	20
			Total Cobalt (Co)	2009/07/26	NC		%	20
			Total Copper (Cu)	2009/07/26	0.1		%	20
			Total Lead (Pb)	2009/07/26	1.3		%	20
			Total Molybdenum (Mo)	2009/07/26	10.1		%	20
			Total Nickel (Ni)	2009/07/26	0.4		%	20
			Total Selenium (Se)	2009/07/26	NC		%	20
			Total Silver (Ag)	2009/07/26	NC		%	20
			Total Thallium (Tl)	2009/07/26	NC		%	20
			Total Tin (Sn)	2009/07/26	NC		%	20
			Total Titanium (Ti)	2009/07/26	5.4		%	20
			Total Uranium (U)	2009/07/26	0.7		%	20
			Total Vanadium (V)	2009/07/26	NC		%	20
			Total Zinc (Zn)	2009/07/26	NC		%	20
3302037	SG8	Calibration Check	Dissolved Calcium (Ca)	2009/07/26		101	%	80 - 120
			Dissolved Iron (Fe)	2009/07/26		91	%	80 - 120
			Dissolved Magnesium (Mg)	2009/07/26		98	%	80 - 120
			Dissolved Manganese (Mn)	2009/07/26		99	%	80 - 120
			Dissolved Potassium (K)	2009/07/26		98	%	80 - 120
			Dissolved Sodium (Na)	2009/07/26		98	%	80 - 120
		MATRIX SPIKE	Dissolved Calcium (Ca)	2009/07/26		NC	%	80 - 120
			Dissolved Iron (Fe)	2009/07/26		89	%	80 - 120
			Dissolved Magnesium (Mg)	2009/07/26		NC	%	80 - 120
			Dissolved Manganese (Mn)	2009/07/26		91	%	80 - 120
			Dissolved Potassium (K)	2009/07/26		99	%	80 - 120
			Dissolved Sodium (Na)	2009/07/26		97	%	80 - 120
		BLANK	Dissolved Calcium (Ca)	2009/07/26	ND, RDL=0.3		mg/L	
			Dissolved Iron (Fe)	2009/07/26	ND, RDL=0.06		mg/L	

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807 ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938567

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3302037	SG8	BLANK	Dissolved Magnesium (Mg)	2009/07/26	ND, RDL=0.2		mg/L	
			Dissolved Manganese (Mn)	2009/07/26	ND, RDL=0.004		mg/L	
			Dissolved Potassium (K)	2009/07/26	ND, RDL=0.3		mg/L	
			Dissolved Sodium (Na)	2009/07/26	ND, RDL=0.5		mg/L	
		RPD	Dissolved Calcium (Ca)	2009/07/26	1.2		%	20
			Dissolved Magnesium (Mg)	2009/07/26	0.7		%	20
			Dissolved Potassium (K)	2009/07/26	0.3		%	20
			Dissolved Sodium (Na)	2009/07/26	0.5		%	20
3302074	SG8	Calibration Check	Total Barium (Ba)	2009/07/27		104	%	80 - 120
			Total Boron (B)	2009/07/27		105	%	80 - 120
			Total Calcium (Ca)	2009/07/27		101	%	80 - 120
			Total Iron (Fe)	2009/07/27		106	%	80 - 120
			Total Lithium (Li)	2009/07/27		104	%	80 - 120
			Total Magnesium (Mg)	2009/07/27		102	%	80 - 120
			Total Manganese (Mn)	2009/07/27		102	%	80 - 120
			Total Phosphorus (P)	2009/07/27		108	%	80 - 120
			Total Potassium (K)	2009/07/27		102	%	80 - 120
			Total Silicon (Si)	2009/07/27		106	%	80 - 120
			Total Sodium (Na)	2009/07/27		102	%	80 - 120
			Total Strontium (Sr)	2009/07/27		104	%	80 - 120
		MATRIX SPIKE	Total Barium (Ba)	2009/07/27		106	%	80 - 120
			Total Boron (B)	2009/07/27		108	%	80 - 120
			Total Calcium (Ca)	2009/07/27		NC	%	80 - 120
			Total Iron (Fe)	2009/07/27		NC	%	80 - 120
			Total Lithium (Li)	2009/07/27		105	%	80 - 120
			Total Magnesium (Mg)	2009/07/27		104	%	80 - 120
			Total Manganese (Mn)	2009/07/27		105	%	80 - 120
			Total Phosphorus (P)	2009/07/27		112	%	80 - 120
			Total Potassium (K)	2009/07/27		107	%	80 - 120
			Total Sodium (Na)	2009/07/27		NC	%	80 - 120
			Total Strontium (Sr)	2009/07/27		105	%	80 - 120
		SPIKE	Total Sulphur (S)	2009/07/27		101	%	80 - 120
		BLANK	Total Barium (Ba)	2009/07/27	ND, RDL=0.01		mg/L	
			Total Boron (B)	2009/07/27	ND, RDL=0.02		mg/L	
			Total Calcium (Ca)	2009/07/27	ND, RDL=0.3		mg/L	
			Total Iron (Fe)	2009/07/27	ND, RDL=0.06		mg/L	
			Total Lithium (Li)	2009/07/27	ND, RDL=0.02		mg/L	
			Total Magnesium (Mg)	2009/07/27	ND, RDL=0.2		mg/L	
			Total Manganese (Mn)	2009/07/27	ND, RDL=0.004		mg/L	
			Total Phosphorus (P)	2009/07/27	ND, RDL=0.1		mg/L	
			Total Potassium (K)	2009/07/27	ND, RDL=0.3		mg/L	
			Total Silicon (Si)	2009/07/27	ND, RDL=0.1		mg/L	
			Total Sodium (Na)	2009/07/27	ND, RDL=0.5		mg/L	
			Total Strontium (Sr)	2009/07/27	ND, RDL=0.02		mg/L	
			Total Sulphur (S)	2009/07/27	ND, RDL=0.2		mg/L	
		RPD	Total Barium (Ba)	2009/07/27	1.2		%	20
			Total Boron (B)	2009/07/27	5.6		%	20
			Total Calcium (Ca)	2009/07/27	0.2		%	20
			Total Iron (Fe)	2009/07/27	1		%	20
			Total Lithium (Li)	2009/07/27	NC		%	20
			Total Magnesium (Mg)	2009/07/27	0.002		%	20
			Total Manganese (Mn)	2009/07/27	1.0		%	20
			Total Phosphorus (P)	2009/07/27	NC		%	20
			Total Potassium (K)	2009/07/27	1.2		%	20
			Total Silicon (Si)	2009/07/27	1.6		%	20

SENES CONSULTANTS LIMITED
Attention: HENRY WONG
Client Project #: 34807 ROBERTS BAY
P.O. #:
Site Reference:

Quality Assurance Report (Continued)

Maxxam Job Number: EA938567

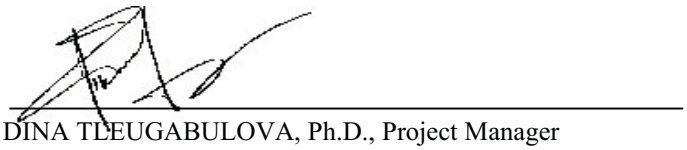
QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3302074	SG8	RPD	Total Sodium (Na)	2009/07/27	1.3		%	20
			Total Strontium (Sr)	2009/07/27	0.9		%	20
			Total Sulphur (S)	2009/07/27	0.4		%	20
3304004	KM7	Calibration Check	Dissolved Chloride (Cl)	2009/07/27		97	%	80 - 120
		MATRIX SPIKE [P93573-01]	Dissolved Chloride (Cl)	2009/07/27		101	%	80 - 120
		BLANK	Dissolved Chloride (Cl)	2009/07/27	ND, RDL=0.5		mg/L	
		RPD [P93573-01]	Dissolved Chloride (Cl)	2009/07/27	4.6		%	20
3304005	KM7	Calibration Check	Dissolved Sulphate (SO4)	2009/07/27		99	%	80 - 120
		MATRIX SPIKE [P93573-01]	Dissolved Sulphate (SO4)	2009/07/27		NC	%	80 - 120
		BLANK	Dissolved Sulphate (SO4)	2009/07/27	ND, RDL=0.5		mg/L	
		RPD [P93573-01]	Dissolved Sulphate (SO4)	2009/07/27	5.0		%	20

ND = Not detected
NC = Non-calculable
RPD = Relative Percent Difference
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Validation Signature Page

Maxxam Job #: A938567

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



DINA TLEUGABULOVA, Ph.D., Project Manager

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. SCC and CALA have approved this reporting process and electronic report format.

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290513

- FINAL REPORT -

Prepared For: Quantum Murray LP

Address: 100-3600 Viking Way
Richmond, BC
V6V 1N6

Attn: Gavin Domitter **Facsimile:** (604) 270-7389

Final report has been reviewed and approved by:

Angelique Ruzindana
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association of Environmental Analytical Laboratories (CAEAL) as a testing laboratory for specific tests registered with CAEAL.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290513

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Camp Tap **Taiga Sample ID:** 001

Client Project:
Sample Type: Potable
Received Date: 03-Aug-09
Sampling Date: 02-Aug-09
Sampling Time: 19:30
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Physicals						
Alkalinity, Total (as CaCO3)	34.0	0.4	mg/L	04-Aug-09	SM2320:B	
Conductivity, Specific (@ 25°C)	131	0.4	µS/cm	04-Aug-09	SM2510:B	
pH	7.70		pH units	04-Aug-09	SM4500-H:B	
Major Ions						
Chloride	25.6	0.7	mg/L	07-Aug-09	SM4110:B	
Hardness	16.6	0.7	mg/L	07-Aug-09	SM2340:B	
Magnesium	1.1	0.1	mg/L	07-Aug-09	SM4110:B	
Nitrate	0.04	0.01	mg/L	07-Aug-09	SM4110:B	
Nitrite	< 0.01	0.01	mg/L	07-Aug-09	SM4110:B	
Sodium	8.5	0.1	mg/L	07-Aug-09	SM4110:B	
Sulphate	< 1	1	mg/L	07-Aug-09	SM4110:B	
Microbiology						
Coliforms, Fecal	< 1	1	CFU/100mL	03-Aug-09	SM9222:D	
Coliforms, Total	1.0	1.0	MPN/100mL	03-Aug-09	SM9223:B	

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290513

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Camp Tap **Taiga Sample ID: 001**

Escherichia coli	< 1.0	1.0	MPN/100mL	03-Aug-09	SM9223:B
Trace Metals, Dissolved					
Cadmium	< 0.05	0.05	µg/L	06-Aug-09	EPA200.8
Cobalt	< 0.1	0.1	µg/L	06-Aug-09	EPA200.8
Copper	5.2	0.2	µg/L	06-Aug-09	EPA200.8
Lead	0.5	0.1	µg/L	06-Aug-09	EPA200.8
Nickel	0.7	0.1	µg/L	06-Aug-09	EPA200.8
Trace Metals, Total					
Arsenic	2.0	0.2	µg/L	06-Aug-09	EPA200.8
Chromium	0.3	0.1	µg/L	06-Aug-09	EPA200.8
Iron	187	5	µg/L	06-Aug-09	EPA200.8
Manganese	2.0	0.1	µg/L	06-Aug-09	EPA200.8
Mercury	< 0.01	0.01	µg/L	06-Aug-09	EPA200.8
Zinc	6.6	0.4	µg/L	06-Aug-09	EPA200.8
Subcontracted Organics					
Benzene	< 0.001	0.001	mg/L	07-Aug-09	EPA8021B
Ethylbenzene	< 0.001	0.001	mg/L	07-Aug-09	EPA8021B
Hydrocarbons, Total Extractable	< 0.1	0.1	mg/L	07-Aug-09	Alta.Env.Met
Hydrocarbons, Total Purgeable	< 0.01	0.01	mg/L	07-Aug-09	EPA8021B
Polychlorinated Biphenyls	< 0.1	0.1	ug/L	10-Aug-09	EPA8082
Toluene	< 0.001	0.001	mg/L	07-Aug-09	EPA8021B
Xylenes	< 0.001	0.001	mg/L	07-Aug-09	EPA8021B

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290513

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater System **Taiga Sample ID:** 002

Client Project:
Sample Type: Wastewater
Received Date: 03-Aug-09
Sampling Date: 02-Aug-09
Sampling Time: 19:30
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Physicals						
pH	7.98		pH units	04-Aug-09	SM4500-H:B	
Solids, Total Suspended	28	3	mg/L	06-Aug-09	SM2540:D	
Inorganics - Nutrients						
Biochemical Oxygen Demand	80	2	mg/L	04-Aug-09	SM5210:B	
Microbiology						
Coliforms, Fecal	130000	10000	CFU/100mL	03-Aug-09	SM9222:D	
Organics						
Oil and Grease, visible	NonVisual			06-Aug-09	Visual Exam	

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290513

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater System

Taiga Sample ID: 002

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290542

- FINAL REPORT -

Prepared For: Quantum Murray LP

Address: 100-3600 Viking Way
Richmond, BC
V6V 1N6

Attn: Gavin Domitter **Facsimile:** (604) 270-7389

Final report has been reviewed and approved by:

Angelique Ruzindana
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association of Environmental Analytical Laboratories (CAEAL) as a testing laboratory for specific tests registered with CAEAL.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290542

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater **Taiga Sample ID: 001**

Client Project:
Sample Type: Wastewater
Received Date: 07-Aug-09
Sampling Date: 06-Aug-09
Sampling Time: 17:50
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Physicals						
pH	7.89		pH units	07-Aug-09	SM4500-H:B	
Solids, Total Suspended	42	3	mg/L	11-Aug-09	SM2540:D	
Inorganics - Nutrients						
Biochemical Oxygen Demand	79	2	mg/L	07-Aug-09	SM5210:B	
Microbiology						
Coliforms, Fecal	1320000	10000	CFU/100mL	07-Aug-09	SM9222:D	
Organics						
Oil and Grease, visible	NonVisual			10-Aug-09	Visual Exam	

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290542

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater **Taiga Sample ID: 001**

*** Taiga analytical methods are based on the following standard analytical methods**
SM - Standard Methods for the Examination of Water and Wastewater
EPA - United States Environmental Protection Agency

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290542

- FINAL REPORT -

Prepared For: Quantum Murray LP

Address: 100-3600 Viking Way
Richmond, BC
V6V 1N6

Attn: Gavin Domitter **Facsimile:** (604) 270-7389

Final report has been reviewed and approved by:

Angelique Ruzindana
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association of Environmental Analytical Laboratories (CAEAL) as a testing laboratory for specific tests registered with CAEAL.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290542

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater **Taiga Sample ID: 001**

Client Project:
Sample Type: Wastewater
Received Date: 07-Aug-09
Sampling Date: 06-Aug-09
Sampling Time: 17:50
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Physicals						
pH	7.89		pH units	07-Aug-09	SM4500-H:B	
Solids, Total Suspended	42	3	mg/L	11-Aug-09	SM2540:D	
Inorganics - Nutrients						
Biochemical Oxygen Demand	79	2	mg/L	07-Aug-09	SM5210:B	
Microbiology						
Coliforms, Fecal	1320000	10000	CFU/100mL	07-Aug-09	SM9222:D	
Organics						
Oil and Grease, visible	NonVisual			10-Aug-09	Visual Exam	

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290542

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater **Taiga Sample ID: 001**

*** Taiga analytical methods are based on the following standard analytical methods**
SM - Standard Methods for the Examination of Water and Wastewater
EPA - United States Environmental Protection Agency

ReportDate: Wednesday, August 12, 2009
Print Date: Wednesday, August 12, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290556

- FINAL REPORT -

Prepared For: Quantum Murray LP

Address: 100-3600 Viking Way
Richmond, BC
V6V 1N6

Attn: Gavin Domitter **Facsimile:** (604) 270-7389

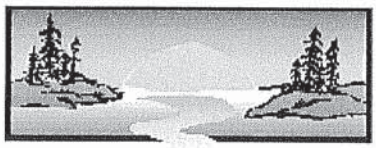
Final report has been reviewed and approved by:

Angelique Ruzindana
Quality Assurance Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association of Environmental Analytical Laboratories (CAEAL) as a testing laboratory for specific tests registered with CAEAL.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Monday, August 17, 2009
Print Date: Monday, August 17, 2009



Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290556

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater **Taiga Sample ID: 001**

Client Project:
Sample Type: Wastewater
Received Date: 10-Aug-09
Sampling Date: 09-Aug-09
Sampling Time: 18:45
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Inorganics - Physicals						
pH	11.4		pH units	11-Aug-09	SM4500-H:B	
Solids, Total Suspended	152	3	mg/L	14-Aug-09	SM2540:D	
Inorganics - Nutrients						
Biochemical Oxygen Demand	36	2	mg/L	10-Aug-09	SM5210:B	
Microbiology						
Coliforms, Fecal	< 4	4	CFU/100mL	10-Aug-09	SM9222:D	
Organics						
Oil and Grease, visible	NonVisual			11-Aug-09	Visual Exam	

ReportDate: Monday, August 17, 2009
Print Date: Monday, August 17, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290556

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wastewater **Taiga Sample ID: 001**

*** Taiga analytical methods are based on the following standard analytical methods**
SM - Standard Methods for the Examination of Water and Wastewater
EPA - United States Environmental Protection Agency

ReportDate: Monday, August 17, 2009
Print Date: Monday, August 17, 2009

INCINERATOR WASTE CHEMISTRY

SENES

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290585

- FINAL REPORT -

Prepared For: Quantum Murray LP

Address: 100-3600 Viking Way
Richmond, BC
V6V 1N6

Attn: Gavin Domitter **Facsimile:** (604) 270-7389

Final report has been reviewed and approved by:

Judy Mah
Client Service Officer

NOTES:

- Test methods and data are validated by the laboratory's Quality Assurance Program. Taiga Environmental Laboratory is accredited by the Canadian Association of Environmental Analytical Laboratories (CAEAL) as a testing laboratory for specific tests registered with CAEAL.
- Routine methods are based on recognized procedures from sources such as
  - Standard Methods for the Examination of Water and Wastewater APHA AWWA WEF;
  - Environment Canada
  - USEPA
- Samples shall be kept for thirty (30) days after the final report is issued. All microbiological samples shall be disposed of immediately upon completion of analysis to minimize biohazardous risks to laboratory personnel. Please contact the laboratory if you have any special requirements.
- Final results are based on the specific tests at the time of analysis and do not represent the conditions during sampling.

ReportDate: Wednesday, August 19, 2009
Print Date: Wednesday, August 19, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290585

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Incinerator **Taiga Sample ID: 001**

Client Project:
Sample Type: Ash
Received Date: 14-Aug-09
Sampling Date:
Sampling Time:
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Subcontracted Organics						
Acenaphthylene	0.71	0.05	mg/kg	17-Aug-09	EPA8270	
Acenapthene	0.16	0.05	mg/kg	17-Aug-09	EPA8270	
Anthracene	0.557	0.003	mg/kg	17-Aug-09	EPA8270	
Benzo(a)anthracene	0.13	0.01	mg/kg	17-Aug-09	EPA8270	
Benzo(a)pyrene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(b)fluoranthene	0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(g,h,i)perylene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(j)fluoranthene	0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(k)fluoranthene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Chrysene	0.21	0.05	mg/kg	17-Aug-09	EPA8270	
Dibenzo(a,h)anthracene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Fluoranthene	0.50	0.01	mg/kg	17-Aug-09	EPA8270	
Fluorene	0.66	0.05	mg/kg	17-Aug-09	EPA8270	
Indeno(1,2,3-cd)pyrene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Index of Additive Cancer Risk	0.089	0.001		17-Aug-09	EPA8270	

ReportDate: Wednesday, August 19, 2009
Print Date: Wednesday, August 19, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290585

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Incinerator **Taiga Sample ID: 001**

Index of Additive Cancer Risk	0.170	0.001		17-Aug-09	EPA8270
Naphthalene	3.10	0.01	mg/kg	17-Aug-09	EPA8270
Phenanthrene	2.22	0.01	mg/kg	17-Aug-09	EPA8270
Pyrene	0.50	0.01	mg/kg	17-Aug-09	EPA8270

ReportDate: Wednesday, August 19, 2009
Print Date: Wednesday, August 19, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290585

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wood Burn Ashes **Taiga Sample ID: 002**

Client Project:
Sample Type: Ash
Received Date: 14-Aug-09
Sampling Date:
Sampling Time:
Location: Roberts Bay
Report Status: **Final**

Test Parameter	Result	Detection Limit	Units	Analysis Date	Analytical Method *	Qualifer
Subcontracted Organics						
Acenaphthylene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Acenapthene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Anthracene	< 0.003	0.003	mg/kg	17-Aug-09	EPA8270	
Benzo(a)anthracene	< 0.01	0.01	mg/kg	17-Aug-09	EPA8270	
Benzo(a)pyrene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(b)fluoranthene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(g,h,i)perylene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(j)fluoranthene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Benzo(k)fluoranthene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Chrysene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Dibenzo(a,h)anthracene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Fluoranthene	< 0.01	0.01	mg/kg	17-Aug-09	EPA8270	
Fluorene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Indeno(1,2,3-cd)pyrene	< 0.05	0.05	mg/kg	17-Aug-09	EPA8270	
Index of Additive Cancer Risk	< 0.001	0.001		17-Aug-09	EPA8270	

ReportDate: Wednesday, August 19, 2009
Print Date: Wednesday, August 19, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.: 290585

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wood Burn Ashes **Taiga Sample ID: 002**

Index of Additive Cancer Risk	< 0.001	0.001		17-Aug-09	EPA8270
Naphthalene	0.09	0.01	mg/kg	17-Aug-09	EPA8270
Phenanthrene	< 0.01	0.01	mg/kg	17-Aug-09	EPA8270
Pyrene	< 0.01	0.01	mg/kg	17-Aug-09	EPA8270

ReportDate: Wednesday, August 19, 2009
Print Date: Wednesday, August 19, 2009

Taiga Environmental Laboratory
4601-52nd Ave., Box 1500, Yellowknife, NT. X1A 2R3
Tel: (867)-669-2788 Fax: (867)-669-2718

Taiga Batch No.:
290585

- CERTIFICATE OF ANALYSIS -

Client Sample ID: Wood Burn Ashes **Taiga Sample ID: 002**

*** Taiga analytical methods are based on the following standard analytical methods**

SM - Standard Methods for the Examination of Water and Wastewater

EPA - United States Environmental Protection Agency

ReportDate: Wednesday, August 19, 2009
Print Date: Wednesday, August 19, 2009

LETTER FROM MAXXAM ON PEAT RESULTS (ET1101 LOCATION)

Maxxam Analytics Inc

24-August-2009

Attn: Lawrence Borowski, Senes Consultants Ltd.

Re: Product Characterizations

Sample : A944714 Q34800 (Client ID V09-SW1)

The sample outlined above was submitted to Maxxam Analytics, Edmonton Environmental for analysis of CCME Fraction 2 – Fraction 4 hydrocarbons in August 2009.

GC/FID analysis of sample Q34800 (Client ID V09-SW1) was performed using a 100% dimethylpolysiloxane (DB-1) chromatographic column. This type of column provides separation that approximates boiling point or carbon number distribution. The sample was extracted using acetone and hexane prior to analysis. This solvent mixture is consistent with the Canada Wide Standard for Petroleum Hydrocarbon analysis in soil (CWS-PHC).

The GC/FID chromatogram of sample Q34800 (Client ID V09-SW1) is attached.

Based on our review of this chromatogram, the hydrocarbon concentrations reported for sample Q34800 (Client ID V09-SW1) cannot be classified as petroleum-based.

Hydrocarbon concentrations reported for this sample can be primarily attributed to the naturally occurring sample matrix. Our review of these chromatograms confirmed that no distinguishable hydrocarbon pattern was detected.

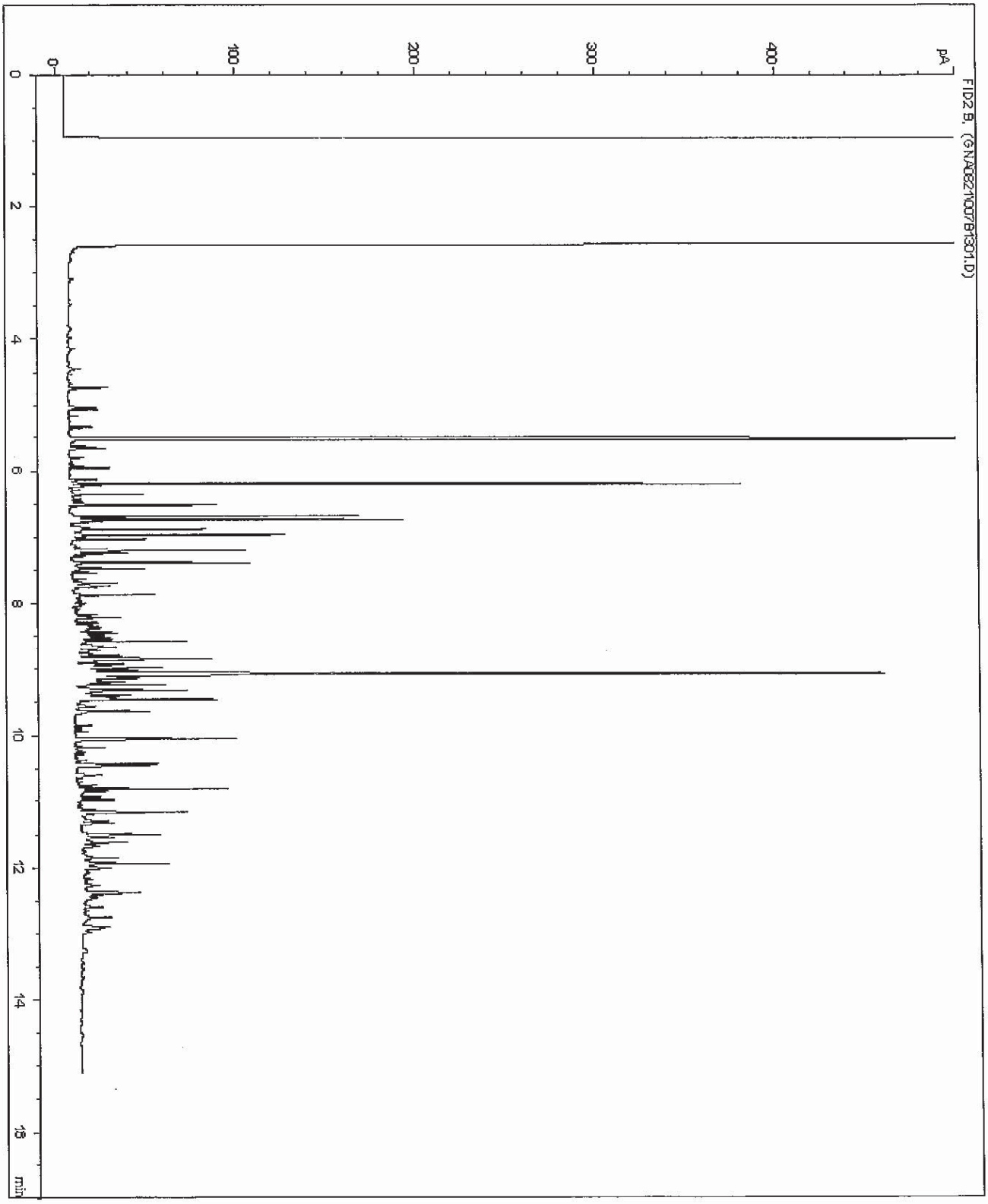
Best Regards,

Lisa Cummings, BSc.
Extractables Supervisor
Maxxam Analytics, Edmonton Environmental

The reported hydrocarbon resemblance was obtained by visual comparison of the sample chromatogram with a library of reference product chromatograms. Since variables such as the degree and type of weathering and the presence of non petrogenic hydrocarbons cannot be duplicated in reference spectra, the resemblance information must be regarded as approximate and qualitative and as such, Maxxam can assume no liability for any conclusions drawn from these data.

Data File C:\HPCHEM\1\DATA\GNA0821\007B1301.D

Sample Name: Q34800



*** End of Report ***

APPENDIX B

DAILY REPORTS (SEE CD-ROM)

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; Ron Bosel –Quantum Murray		

WEATHER

Temperature (°C)	-2C at 5:00pm	Maximum: -1C at 7:00 am	Average -1.5 C
Wind Chill	-11C	**Wind Speed**	52-58 kph with gusts between 67 and 76 kph
Barometric Pressure	100.4 to 100.8	**Tendency**	rising
Relative Humidity	96%	**Precipitation (mm)**	1.4 mm (yesterday)
Conditions	Blizzard in am; blowing snow in pm. Winds abating by late afternoon		

WORK IN PROGRESS

Helicopter did not leave Yellowknife today. It is expected that the helicopter should be here early tomorrow afternoon.
It is anticipated that the helicopter will be used to take the captain from the barge at Newmont to scout out a landing point as early as tomorrow afternoon.
However, all the equipment is not on this barge. There is a second barge that was last reported somewhere off Victoria Island. If this barge stopped during the storm it may still be 2 or 3 days away. If it continued through the storm it may arrive on Saturday. Rom Bosel was attempting to get the location of this barge, but didn't report back.
The absolute earliest that the crew will go to the site will be Saturday, Sept 27th. Realistically, Sept 28th is the target date.
Lawrence

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	September 26, 2008
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; Ron Bosel Quantum Murray		

WEATHER

Temperature (°C)	-5C Minimum	Maximum: -4C	Average -4.5C
Wind Chill	-11 am ; -8 pm	**Wind Speed**	NNE 30kph am NNE 11 kph pm
Barometric Pressure	102.1	**Tendency**	Rising
Relative Humidity	89%	**Precipitation (mm)**	1.7 mm (yesterday)
Conditions	Cloudy, windy, light snow in am. Cloudy, freezing drizzle at 6:00 pm		

WORK IN PROGRESS

- Helicopter departed Yellowknife at 10:00 am. Arrived Cambridge Bay at 5:00 pm.
- Still unable to contact the second barge. It is understood that barges change tugs at Johannson Bay. The name of the new tug is unknown. It is not known if it stopped during the storm or kept going. This would make a difference of a few days to its arrival time.
- NTCL are not returning calls.
- Representative from Newmont Mine advises that they were instructed by NTCL to store the equipment over winter!!!!
- It is still unknown whether the equipment needs to be offloaded and reloaded on a shallow draft barge.
- Quantum Murray plans a trip to Newmont tomorrow, to determine what equipment had arrived there, and whether it needs to be reloaded. They also plan to take the captain to Ida Bay and determine the best landing site. Currently there is no plan to move the crew to the site tomorrow.
- I have asked to be included in the trip. However, Great Slave Helicopters plans to position fuel at the site on this trip. Depending on weight restrictions I may be bumped!

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	27 September 2008
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; Ron Bosel-Quantum Murray		

WEATHER

Temperature (°C)	Low-6C at 7:00 am	Maximum: -4 C at 2:00 pm	Average -5C
Wind Chill	-8C	**Wind Speed**	S 8kph
Barometric Pressure	102.1	**Tendency**	Falling
Relative Humidity	96%	**Precipitation (mm)**	Trace
Conditions	Cloudy, light freezing rain. Some clearing in afternoon. Cloudy by 6:00 pm		

WORK IN PROGRESS

- Second barge has been located. It is at Newmont Mine

- Helicopter trip to the site was cancelled due to freezing rain.

- Tomorrow's plan it to move fuel, survey equipment and tools to the site. Boat captain to be taken to Ida bay to determine landing spot. Determination will be made if equipment needs to be reloaded and to check progress of unloading at Newmont Mine. A determination will be made when the barges will reach Ida Bay.

- Current forecast is a front moving in around midnight, snow tomorrow and temperatures of -9C

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	September 28, 2008
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; Ron Bosel-Quantum Murray		

WEATHER

Temperature (°C)	Low -7C at 7:00 am	Maximum: -4C at 4:30 pm	Average : -5.5C
Wind Chill	-12 C	**Wind Speed**	ENE 11 kph to ENE 26 kph
Barometric Pressure	102.1 kpa	**Tendency**	Rising during the day, Falling in the evening
Relative Humidity	100%	**Precipitation (mm)**	trace
Conditions	Fog depositing ice in am, turning to fog about noon, then snow grains		

WORK IN PROGRESS

- Helicopter grounded all day due to weather.
- Monday: Ron Bosel and Wally Wallster (foreman) to go to Newmont via Newmont's fixed wing aircraft (only 2 seats available). While there, they will see what has to be done with the barges at Newmont, then use the helicopter based at Newmont to take the captain to the Ida bay site to scout a landing site.
- Depending on weather reports from the fixed wing aircraft, the helicopter may make a fuel supply trip to Ida Bay.
- Forecast for tonight, Monday and Tuesday is for periods of light snow with temperatures of -4C to -5C. Pilots have advised us that freezing rain is a possibility at temperatures warmer than -9C

ROBERTS AND IDA BAY SITE REMEDIATION
DAILY REPORT

Date Wednesday- Saturday, 22- 25 April 2009
Project ID PWGSC: ?
SENES/ DCS: 34807

Site Personnel

Department Representative:	SENES/ DCS		
	Resident Eng-	Henry Wong	Onsite 22- 25 April
Remediation Contractor:	Quantum Murray/ Stan Dean & Sons Ltd.:		
	Superintendent-	John Weigel	Onsite 16 April
	Foreman/ Op.-	Wally Wallster	Onsite 16 April
	Operator-	Don Boxer	Onsite 16 April
	Labourer-	Roy Barreau	Onsite 16 April
	Mechanic-	Leon Nessel	Onsite 17 April
	Cook-	Romek Shlatycli	Onsite 17 April
Sub-Contractor	Neyo Driling & Blasting Inc.		
	President	Archie Emblau	Onsite 22- 25 April
	Driller	Donald Frost	Onsite 22- 25 April
	Driller's Helper	Brent Emblau	Onsite 22- 25 April

Weather

Temperature:	(?) -20 to -30 ^{0}C
Precipitation:	None
Condition:	Overcast to Clear
	Moderate to Strong Winds

General

Winter Road Transport (2009):

The remediation contractor mobilized a work crew to the Ida Bay Mine Site to carry out the Winter Road Transport (2009) portion of their work schedule. The crew arrived at the site on April 16 and set-up a temporary working-camp. The Winter Road Transport comprised work to prepare equipment, establish a route between Ida Bay and Roberts Bay and then move equipment from Ida Bay to Roberts Bay.

Following set-up of the temporary camp, a plane (on skis) was chartered from Yellowknife to bring the Department Representative, a Neyo Drilling and Blasting Inc. (Neyo) crew and supplies to the Ida Bay site. The drilling and blasting sub-contractor was mobilized to the site to collapse the roof of the Ida Bay Mine Site Adit prior to moving the drill to Roberts Bay.

Neyo completed the drilling and blast on April 23. The adit roof was collapsed and then covered with waste rock.

A chartered planed arrived the morning of April 25 to take the Department Representative and Neyo crew back to Yellowknife. The contractor anticipates completing the equipment and materials move to Roberts Bay April 29.

Work in Progress

- 01.53.00 Mobilization
  - Moving equipment to Robert's Bay

- 03.05.11 Mine Opening Seal
  - Drill, blast and collapse of the Ida Bay Mine Site Adit
  - Sixty-six holes were advanced on 1.5 meter spacing approximately 9 meters back of the adit entrance

- 31.23.10 Excavating and Backfilling
  - Covered the collapsed Ida Bay Adit

Health & Safety and Environmental Issues

Morning tailgate meetings were conducted daily.

Site personnel undertook review of the Quantum Marry Health & Safety Responsibilities and Rules Orientation Booklet and signed an acknowledgement of the review. Standard Operating Procedures for Cold Weather Hazards were included in the orientation review.

The contractor reported a diesel spill of approximately 120 litres on April 21 to the project team. A NWT Spill Report was filed and sent to the Spill . The contractor constructed a waste rock berm to contain the spill and tried applying absorbent pads; however, recovery was limited because fuel was mixing into snow and rock terrain. Snow and diesel were then burnt off from the spill area using a propane tiger torch. Ice cover prevented any fuel from reaching natural ground. A rock cap was placed over the spill area to delineate the area and prevent any exposure to wildlife.

A copy of the Spill Report and contractor's report is attached at the rear of this document.

Comments, Concerns and Correspondence

The spill area was uncovered and reviewed by the resident engineer and contractor's site superintendent the morning of April 23. The spill area was underlain by snow, ice and uneven rock terrain. The following was determined:

- No distinct visual evidence of the diesel spill was observed
- Some hydrocarbon odour was noted in the area
- Excavation of the area would not be carried right now due to the frozen ground and snow interference
- The area was recovered and would be reviewed again when the ground surface has thawed during the summer work program

Site Visitors

None.

Photos

See attached.

April 22, 2009 – Arrived at Ida Bay Mine Site (IBMS).

April 22, 2009 – IBMS: Temporary Camp.

April 23, 2009 – Excavator: Fuel Drainage System.

April 23, 2009 – IBMS: Review of Diesel Spill Area.

April 23, 2009 – Transporting Materials to Roberts Bay Mine Site.

April 23, 2009 – Roberts Bay Mine Site (RBMS): Temporary Equipment Staging Area.

April 23, 2009 – RBMS: Unloading.

April 23, 2009 – Roberts Bay Mine Site.

April 23, 2009 – RBMS: Tailings Pond.

April 23, 2009 – IBMS: Drilling and Setting up Blast at Adit.

April 23, 2009 – IBMS: Collapsed Adit.

April 24, 2009 – Roberts Bay Mine Site.

NWT SPILL REPORT

(Oil, Gas, Hazardous Chemicals or other Materials)

Northwest Territories

24 – Hour Report Line
Phone: (867) 920-8130
Fax: (867) 873-6924

A Report Date and Time: APRIL 25/2009 1:10 PM

B Date and Time of spill (if known): APRIL 25/2009 11:30 AM

C ☑ Original Report ☐ Update no._____

Spill Number:

D Location and map coordinates (if known) and direction (if moving)
IDA BAY MINE 68° 14' 2" N 106° 31' 46" W SPILL CONTAINED AND REMOVED. NO LEAKAGE FROM SPILL SITE.

E Partly responsible for spill
QUANTUM MURRAY LP

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)
DIESEL FUEL, APPROX. 120 LITRES

G Cause of spill
ACCIDENTAL OPENING OF FUEL TANK VALVE WHILE DIGGING MACHINE OUT OF SNOW BANK

H Is spill terminated? ☑ yes ☐ no

I If spill is continuing, give estimated rate: N/A

J Is further spillage possible? ☐ yes ☑ no

K Extent of contaminated area (in square meters if possible)
0.5 m² APPROX. 1.3 m x 0.3 m

L Factors effecting spill or recovery (weather conditions, terrain, snow cover, etc.)
FROZEN GROUND, SNOW COVER

M Containment (natural depression, dikes, etc.)
NATURAL DEPRESSION 0.3 DEEP & ROCK BERM

N Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials
THE SPILL WAS CONTAINED BY A NATURAL DEPRESSION, BUT A ROCK BERM WAS PLACED AROUND THE SPILL. A PROPANE TIGER TORCH WAS USED TO BURN OFF ALL THE SNOW AND DIESEL FUEL INSIDE THE BERM. A ROCK CAP WAS PLACED OVER THE SPILL AREA.

O Do you require assistance?
☑ no ☐ yes, describe:

P Possible hazards to person, property, or environment; eg: fire, drink water, fish or wildlife
NONE. FUEL REMOVED. AREA CONTAINED & COVERED.

Q Comments or recommendations
SPILL AREA WILL BE TESTED WHEN CREW RETURNS TO IDA BAY FOR SITE REMEDIATION WORK IN JULY 2009.
ANY CONTAMINATED SOIL WILL BE EXCAVATED, PACKAGED AND TRANSPORTED OFF SITE FOR PROPER DISPOSAL.

FOR SPILL LINE USE ONLY

Lead agency:

Spill significance:

Lead Agency contact and time:

Is this file now closed? ☐ yes ☐ no

Reported by	Position, Employer, Location	Telephone
JOHN WIEGEL	SITE SUPERINTENDENT QUANTUM MURRAY LP, IDA BAY	8816 514 2605
Reported to	**Position, Employer, Location**	**Telephone**
Rod Bosel	GENERAL SUPERINTENDENT QUANTUM MURRAY LP, BURNABY BC	604 238-2220

NWT 1752/0202

Fuel Spill Report at Ida Bay Mine – April 21, 2009

QMLP personnel at Ida Bay Mine were preparing equipment for transport to Roberts Bay Mine. The equipment had been mobilized to Ida Bay Mine in September 2008 but could not be moved to Roberts Bay until spring 2009 when it could be transported overland by ice road.

To prepare for transport the work crew had to dig the equipment out of the snow that had accumulated on and around the equipment during the winter, then get the equipment operational and ready to move. During snow removal from around the engine compartment of a CAT 325DL excavator a fuel tank drain valve was inadvertently opened. No fuel was noticed leaking from the fuel tank probably due to the frozen conditions around the valve outlet.

The excavator was subsequently started and the engine left running to warm up the machine for operation. When the machine later stopped running investigation by the Site Superintendent revealed the fuel leak. The excavator had originally contained almost 1/4 of a tank of fuel (approximately 120 litres).

The fuel valve was closed and wired shut, the excavator was then partially fuelled and moved from the spill area. Examination of the spill area revealed that the leaked fuel had collected in a natural depression below the machine, was contained and not migrating from the immediate spill area, and the underlying ground was protected by the frozen conditions. A rock berm was constructed around the spill area to further contain the spill area and prevent fuel migration.

Initial attempts to soak up the spill using absorbent pads were unsuccessful as the spill area consisted largely of mushy snow.

It was felt that the consistency of the impacted material would cause additional contamination during excavation and packaging, and removal of rocks in the spill area would likely cause release of fuel from the spill area during attempts to excavate the area.

It was decided that using a propane tiger torch to incinerate the impacted material in place and not disturb the surrounding terrain was the best way to maintain the integrity of the spill area, remove the potential for spreading any fuel and completely remove all traces of the fuel. A tiger torch has a BTU rating of 208,000. Torching the spill area at close range would be completely burn all fuel.

A tiger torch was used to burn all the snow, fuel and ice inside the berm.

A rock cap was finally placed over the spill area to delineate the area and prevent any exposure to wildlife.

The site engineer is scheduled to arrive at site April 22, 2009. The engineer and site superintendent will inspect the spill area and determine whether:

- all fuel in the spill area has been destroyed
- excavation of the area is required
- excavation of the area is feasible in the existing conditions, or
- excavation should be postponed until summer when the ground surface has thawed.

QMLP personnel are scheduled to undertake remediation activities at Roberts Bay Mine starting July 2009.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 22,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	Estimate +25C		
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure		**Tendency**	
Relative Humidity		**Precipitation (mm)**	0
Conditions	Sunny on arrival at 4:00 pm		

WORK IN PROGRESS

- Crew of 8 were on site since July 15th. Camp is set up. Water and sewer set up, but only one toilet is working.
- There is a problem with the camp dining facility. There is only seating for 8 persons. By tomorrow there will be 26 people on site.
- Additional 8 people arrived today, with 2 going out. Overnight camp occupancy was 14.
- Telephones and internet are set up. My phone number is 403 451 0485. **Unable to connect to the internet.** Will try other connections in camp. A wireless router and additional lines will be arriving on Saturday.
- Initial site inspection carried out, for familiarization. The only issue requiring action is direction on the disposal of water in the tailings pond.
- Visitors: Melissa Joy Water Resource Officer, INAC. Apparently she was just passing by, had some free time, and dropped in. She was informed that the camp was just opening and that there were still a number of items to be addressed. A report is anticipated.
- Mosquito quotient: Extreme! Mosquitoes were the worst this writer ever witnessed.
- Contractor will be working an 11 hour day.

Aerial view of camp site at Roberts Bay.

SRK Consulting
Engineers and Scientists

SENES Consultants Limited
Specialists in Energy, Nuclear and Environmental Sciences

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 23,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 22.7C	Low 19.7C	
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny, light wind all day. Scattered clouds in late afternoon.		

WORK IN PROGRESS

- Additional 12 workers arrived on site. A second flight carrying only supplies arrived later in the day.
- Overnight camp occupancy will be 26.
- Safety meeting held in am. This meeting was more to introduce everyone, and explain the format for future meetings which will be mandatory on a daily basis. John Deshutter (Health and Safety Officer) also had us log in as visitors to the site, as required by our Health and Safety specifications.
- Darryl Stowe (chemist), John Wiegle, Gavin and I walked the site this morning attempting to identify hazmat on site. We didn't see any large volumes of contaminated soil, or liquid petroleum products. Darryl started packaging hazmat today, and will be leaving on Saturday.
- Orientation training provided to all new arrivals and others at camp. (Cook and cleaning person were not in attendance). In total 19 persons were given certificates for attendance. (I was one of the attendees)
- Plan trip to Ida Bay tomorrow to develop a plan for completion of the work. Surveyor will also come to the site to do some preliminary surveying. Discussed this work with Vijay, who believed that any remaining rock work can be done in 2010 before the barges are loaded.
- Mosquito quotient: Remains extreme.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 24,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 27.2C	Low 15.8C	
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clouds overnight, clearing by 9:30 am. Sunny, hot all day.		

WORK IN PROGRESS

- Safety meeting at 07:00 am
- First day of work at site.
- Labour crews started picking up wood and metal debris. Two excavators assisting. Area levelled out to receive debris.
- Forwarded photos of water in tailings pond to DCS. No action on site re the tailings pond water issue.
- Darryl (Chemist), completed packaging hazardous material. He has also prepared a spreadsheet detailing his findings. Barrels with content have all been marked, but not consolidated. There is about 200 litres of fuel in the fuel bladder.
- John Weigle, John Deschutter, Richard Johnson (Surveyor) and Lawrence Borowski to Ida Bay. Overall plan will be to send a labour crew to the site to collect and burn wood debris, and collect metal debris. Still have not decided whether to try to bring metal debris back to Roberts Bay using quads, sling it back by helicopter, or ship it off site. There is no trail between the two sites. Our trip today with two Argos was brutally rough, taking 1 hr 15 min each way. It was low tide, so all waste rock at the ocean's edge was exposed, but we were unable to determine how much might need to be moved. Our best estimate is that the waste rock would need to be peeled back for about 25 metres. Two fuel stains need to be cleaned up. Four trenches and the vent raise need to be filled. Two waste rock piles will be graded. There is a question of whether or not anything needs to be (or can be) done with the ramp that was constructed to offload equipment last October. This ramp will be required to load the equipment next August. Except for gathering wood and metal debris (which will be consolidated this year), all remaining work will be done before the barge arrives next summer.
- Road constructed to covered vent raise.

- Some urgency regarding testing. Potable water samples were taken from three sources for testing. Waste water sample taken. Current plan is to start the laboratory work on Sunday. (samples will go out 9:00 am tomorrow). Site encountered some difficulty getting the waste water plant operational. As a result, holding tank capacity is now a concern. Bottled water is currently being used for potable water.

- First day's productivity has been impressive. Crews cleaned up the adit and garage area and have now moved to the old appliances area.

- Mosquito quotient: Remains extreme.

Road constructed to covered vent raise.

Excavators used to move larger items

Two "Gators" were used to haul debris. Crew is offloading wood debris

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 25,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 10.1C	Low 8.6C	
Wind Chill	N/A	**Wind Speed**	Estimate 20 to 25 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clouds overnight, rain started at 4:00 am. Stopped at 8:30 am .Low clouds and fog in am. Plane due in at 9:00 am flew over. Second attempt also unsuccessful. Low clouds and fog persist most of the day.		

WORK IN PROGRESS

- **Status of Hazardous Material handling**

Unknown chemical collection and sampling-3065 litres	Completed	Jul 24/09
Metals soil excavation and packaging 65 cubic metres	Not done	
Hydrocarbon Soil Excavation and packaging -200 cu. metres	Not done	
PCB Ballast and capacitor collection and packaging – 58 kgs	Completed	Jul 24/09
Battery collection and packaging -270 kgs	Completed	Jul 24/09
Asbestos cabinet packaging-255kgs	Not done	
Waste oil collection and packaging – 760 litres	None located	
Fuel bladder fuel collection and packaging – 300 litres	Not done	
Oil/fuel filter collection and packaging-15 (disposed on site)	Completed	Jul 24/09
Glycol collection and packaging – 205 litres	Completed	Jul 24/09
Waste gasoline collection and packaging – 80 litres	identified	
Lead paint coated equipment collection and packaging	Not done	
Compressed gas cylinders collection and packaging -11	staged	
Detonation cord collection and packaging-500 metres	None located	
Unknown chemical /Excavation and analysis	1 sample to be sent out	
Unknown chemical packaging-3065 litres	Completed	Jul 24/09

- Camp occupancy remains at 26 persons
- Crews issued rain gear at the start of the day. Two saws used to cut steel. Pile of wood that had been hauled yesterday was burned. Two “Gators” being used to gather debris from the “appliance” area.
- Two excavators completed demolishing adit 1 steel frame. All steel and debris around adit 1 and the garage area have now been removed.

- Meeting with John Weigle to go over proposed schedules. Blaster is now scheduled to arrive August 1st. Plan to drill and blast in the vicinity of Adit 2. This area will be the primary source for aggregates. Area by Adit 1 will be drilled, blasted and work at adit 1 completed.

- Discussed due diligence items with John Weigle. Chock blocks to be installed on stationary wheeled equipment; all equipment to be checked and drip pans placed as required; signage to be posted as follows: Hazardous materials storage area, open excavation (Adit 1) and no smoking signs at the refuelling site.

- Excavator stockpiling fill material near adit 1.

- Checked refrigerator at appliance area. Coils were removed. Refrigerator will be landfilled. Another battery located in appliance area.

- Surveyor undertook a survey of the footprint of the water in the tailings pond, and an elevation. These will be monitored to determine the rate of evaporation.

- Chemist back to work today. Pallets were moved to the site where the hazardous materials are located. Chemist assisting in loading and banding over pack barrels. These are placed on pallets and crated. The pallets will be moved to a storage site which will be delineated with pylons and signed.

- Discussed closure of the area designated as “appliance area” on the drawings. Work picking up debris in this area is near to completion. However, not every small piece of debris will be picked up. It was agreed that a thin lift of cover material will be spread over the entire area after debris cleanup is completed.

- Spent some time with Dustin, going over the background to the project, investigations that had been carried out, tendering, the specs, and our role. I offered to down load some of this information, but he didn’t bring his laptop to the site. I left him with a hardcopy of the spec, and I’m waiting for his reaction.
- Mosquito quotient: low

Wildlife monitor in his office ensuring that we are safe from bear attacks!

Cutting steel. All steel is being cut to 1 metre lengths

Wood pile set on fire; cutting crew getting started; two “Gators” hauling debris; excavators cleaning up Adit 1. note the fog at the site.

Progress cutting steel by 1:10 pm.

SRK Consulting
Engineers and Scientists

SENES Consultants Limited
Specialists in Energy, Nuclear and Environmental Sciences

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 26,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 9.1C	Low 4.5C	
Wind Chill	N/A	**Wind Speed**	Estimate 20 to 25 kph in am. 25 kph to 30 kph in pm
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clear overnight. Clouds roll in about 11:30 am. Cold winds continue. Very windy.		

WORK IN PROGRESS

- Daily safety meeting.
- Debris cleanup and burning continued. Area designated as old appliance area and old camp area have been completed. Required cap is underway.
- Debris cleanup crew moved to mill building and assay lab. By the end of the day most debris has been picked up. Excavator worked in the vicinity of the mill building all day moving larger items.
- Excavator worked at adit #2. Exposed timbers were removed. In the course of the work about 10 metres of the shaft collapsed. Excavator was then used to collapse the shaft until it was no longer able to do so. Most of the timber was removed by the end of the day. Only one truck load was hauled away, due to the concern that the shaft was under the road. The balance is being hauled away using “Gators”. The adit is now ready for the explosives expert to blast material from along side into the adit for final closure.
- Excavator worked at adit #1. Timbers have been removed, but are still to be collected by the debris crew.
- Met with John Weigle to review plan of action for adits 1 & 2. Measurement for payment for these items was discussed and clarified as required. Agreement for determining fair compensation for covering the collapsed adit at Ida Bay was reached, considering that there was no original ground survey at Ida Bay.
- Two planes today. Darryl Stowe (chemist) departed from the site. A second passenger was medivaced out. Worker was coughing out blood. Medic advised that he seek medical attention. As a result the second plane was diverted to Cambridge Bay, rather than heading direct to Yellowknife.
- Camp population 24.

Panorama of entire site

Panorama of camp area.

Old appliance and camp area after debris cleanup completed.

Adit #2 after shaft collapsed and before timber removed

Adit #2 after timber removed

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 27,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 14.8C	Low 6.3C	
Wind Chill	N/A	**Wind Speed**	Estimate 10 to 15 kph, decreasing in pm
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	trace
Conditions	Sprinkling rain in the morning, cloudy all day.		

WORK IN PROGRESS

- Daily safety meeting.
- Surveyor, completed measurement of truck box capacity (12.30 cu.m.); 12 cu.m. per load will be used. Continued surveying road to Adit 2; surveyed bottom of tailings pond; surveyed available coarse aggregate piles.
- Coarse ore hopper and fine pre hoppers removed.
- Completed hauling fill material to old appliance area, spread with dozer, shaped with excavator, and compacted with the excavator. Due to the thin lift which was placed for aesthetic reasons, only a minimum compactive effort was applied to avoid pumping.
- Labour crews completed cleanup of debris in the mill and assay office areas. Completed the day cutting steel, and picking up any debris around the tailings pond, then making a sweep of the site to pick up any loose debris.
- Excavated area below the tailings pond where the berm had been breached. Only a minor amount of tailings were detected.
- Decision (Matthew, Charles, Vijay) to attempt to stabilize the tailings in the tailings pond without draining the pond.
- Excavator piling up material that will be used to stabilize the tailings pond. Material will be surveyed. As well, buckets will be counted to arrive at a volume.
- Call to Charles Gravelle. Items discussed:
    - The need for a TA to cover recovery of barrels, product and debris from the Roberts Lake seaplane dock area.
    - The need for testing services if hydrocarbon soils are encountered below the fuel bladder.
    - The question of whether diverting the plane yesterday to Cambridge Bay with the ill worker constitutes an emergency flight under the contract.

- Plane routing: Yellowknife to Roberts Bay (bring mechanic), Roberts Bay to Cambridge Bay (take camp attendant home), Cambridge Bay to Roberts Bay (bring in new camp attendant), Roberts Bay to Yellowknife.

- Camp population 25. Camp attendant departed, replacement attendant arrived. Mechanic arrived to work on the generator for about 2 days.

Debris cleanup crew working in mill building

Mill building after debris cleanup completed

Cutting crew cutting debris hauled from the vicinity of the mill

Test strips to locate tailings deposited at the location where the berm was breached. Strip on the left had no tailings. Strip on the right contained tailings

Extent of tailings recovered.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 28,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 15.9C	Low 7.5C	
Wind Chill	N/A	**Wind Speed**	Estimate 10 to 15 kph,
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	trace
Conditions	Sprinkling rain overnight. Cloudy in am; scattered clouds in pm.		

WORK IN PROGRESS

- Daily safety meeting.
- Surveyor advised that volume of water in the tailings pond is 90 cu.m..
- Called Charles Gravelle re need for blasting. Prepared report, appended to this daily report. Note that surveyor was asked to calculate the volume of material to construct the landfill. Based on current design parameters, 4000 cu. m. will be required. This is substantially higher than the anticipated volume of 1750 cu.m.
- Group of workers trained in the use of a plasma cutter. Cutter was used for part of the morning.
- Removed the asbestos board cabinet from the mill.
- Removed all equipment in the mill.
- Demolished the mill structure.
- Test strip of boulders and waste rock placed in the tailings pond.
- Dock construction underway at Roberts Lake.
- Inspected the Roberts Lake area and noted the following:
    - Approximately 146 to 150 empty barrels.
    - Substantial pile of core samples. Most are neatly stacked, but there are some that have spilled out, and there are empty boxes.
    - A minor volume of wood debris.
    - A newly installed recording device, of some type, with a cable running to a depth gauge.

- Camp occupancy 25.
- Wildlife: workers reported a caribou north of the camp yesterday evening.
- Internet service down from 10:30 am until 4:30 pm.today.

Safety supervisor watches as workers are trained on the proper use of a plasma cutter

Approximately 146-150 empty barrels at Roberts Lake.

Some of the core boxes at Roberts Lake. Most core boxes are stacked, intack

Some of the equipment removed from the mill

Material to be landfilled

Material pushed into the tailings pond. Note that boulders are too large. With proper sizing of material the surface should be slightly above the water line, or higher if required for stability.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	July 31,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 14.9C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 5 to 10 kph,
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Cool and cloudy all day.		

WORK IN PROGRESS

- Daily safety meeting.
- Excavated test strips at fuel storage compound, mill/assay building, garage and muskeg area. Contaminated soil at the mill site will be excavated down to bedrock over the entire footprint of the structure. All other sites will be excavated down to permafrost or bedrock. Most of the work will be done tomorrow.
- Full day spent consolidating fuel. Much of the product in the drums has a high water content. One drum of product was extracted from the fuel bladder. Most of it was water. The fuel bladder was rolled up. Soil under the fuel bladders is contaminated. This soil will be excavated down to permafrost.
- Work crews completed cutting steel. Will now start on hoppers and other large objects.
- Continued working on berms at the landfill. The top of the berm is at the design elevation of 70.0.
- Final barrel count from Roberts lake – 200.
- Wildlife Sighting: Wolverine sighted Jul 30th on hills east of the camp.
- Camp occupancy remains at 25
- Mosquito quotient: low

Fuel consolidation. Safety supervisor directed the work.

Test strip at mill site. Bedrock is ~ 300 mm depth. All material within the footprint of the mill will be excavated down to bedrock and removed off site.

Berm at tailings pond being constructed to design elevation of 70 m. Work suspended when supply of fill was depleted. ~ 1000 cu.m. was placed to date.

Workers continue to cut steel.

Adit at the end of the day.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 01,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 13.8 C	Low 5.2C	
Wind Chill	N/A	**Wind Speed**	Estimate ~30 kph in am. Diminishing to light in pm
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	Estimate 10 mm
Conditions	Rain during the night. Rain until ~ 9:00 am. Drizzle until noon. Scattered clouds by mid afternoon..		

WORK IN PROGRESS

- Daily safety meeting.
- Excavator used to crush barrels. All barrels from Roberts Lake and scattered barrels around the site crushed.
- Continued excavating contaminated soil. Muskeg area excavated late yesterday. No sheen in water from overnight rains. 9 boxes filled (18 cu.m.). Excavation at mill and assay-lab sites underway. Volume will be less than estimated. Excavation is being taken down to bedrock.
- Cutting crew cutting hopper with cutting torch.
- Some yard cleanup. Ruts along camp filled in. Trailer moved from borrow source area 5.
- Preparations being made for blasting. Overburden stripped.
- Plane with blasting crew did not arrive. Weather at Roberts bay was marginal. Cambridge Bay was fogged in.
- Wildlife Sighting: Wolf by Roberts Lake.
- Camp occupancy remains at 25
- Mosquito quotient: low in late afternoon.

Excavation in muskeg area. Volume 18 cu.m.

Barrel crushing using the excavator

Tailings pond after boulders removed

Excavation at the mill site

Workers cutting hopper with torch.

Some cleanup around camp. Ruts filled in

SRK Consulting
Engineers and Scientists

SENES Consultants Limited
Specialists in Energy, Nuclear and Environmental Sciences

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 02,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 15.9 C	Low 5.5C	
Wind Chill	N/A	**Wind Speed**	No wind, to light wind
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	Estimate 5 mm
Conditions	Fog during the night until 10:00 am. Rain from 10:00 am until 2:00 pm. Clearing. Sunny by 4:00 pm		

WORK IN PROGRESS

- Daily safety meeting.
- Plane arrived at 2:30 pm from Yellowknife with blasting crew. Plane spent balance of day ferrying food supplies and fuel.
- Completed excavating at mill site to bedrock late yesterday. 18 boxes filled (36 cu.m.). Excavation filled in later in the day.
- Spent all day excavating at fuel bladder area. The smell of product was prevalent at the NE corner. When this was removed there was no longer a smell. Nevertheless, the entire foot print of the fuel bladders will be removed down to permafrost. Rainwater collected in the excavation today did not have a sheen on it. Volume to be excavated will be less than 50% of the estimated volume of 200 cu.m.
- Hopper has been cut up and crushed.
- Neyo Drilling started laying out blast patterns.
- Obtained photos of wood debris at un-named lake, adjacent to the current water intake.
- Crew is spending their time putting boxes together, banding, and moving boxes to storage areas.
- Camp occupancy: Neyo Drilling and Blasting 5 persons arrived. 3 workers departed. Electrician came between planes. Total occupancy 27.
- Mosquito quotient: extreme in late afternoon.

- Gasket on water pump on hydraulic drill defective. Drilling stopped after 1 and one-half holes drilled. Attempts were made to have a new water pump sent up Monday. Difficulty in obtaining parts numbers or any other numbers on the equipment. Gasket material was sent up from Cambridge Bay, arriving at 8:00 pm. Will attempt to cut a gasket to get the equipment working.

Mill area after contaminated soils removed.

Mill area after excavation backfilled

Start of excavation at fuel bladder area (in the rain)

Debris (plywood) in un-named lake that should be removed.

Neyo Drilling and Blasting laying out drill hole patterns

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 03,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 15.3 C	Low 5.7C	
Wind Chill	N/A	**Wind Speed**	10-15 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny, light winds all day.		

WORK IN PROGRESS

- Daily safety meeting.
- Neyo drilling completed laying out blast patterns. Spent most of day waiting for plane with replacement water pump for hydraulic pump. Crew picking up detonator cord and blasting caps. Three garbage bags of detonator cord collected. Small bag of blasting caps collected. Blasting caps will be dumped in one of the holes for the next blast and destroyed.
- Completed excavation at fuel bladder. Excavation carried out down to permafrost. No sheen in water in the excavation.
  There were two fuel bladders. Hydrocarbon smell was present under the smaller fuel bladder, at the north east corner. The second larger fuel bladder had been placed over plywood. There was no evidence that there was any hydrocarbon impacts under the plywood (No smell or staining). Excavation carried out to permafrost under the footprint of both fuel bladders. Water in the excavation did not have a sheen. Volume removed: 34 boxes. 68 cu.m.
- Completed removal of debris from un named lake.
- Mosquito quotient: low
- Camp occupancy 27

Blasting caps collected. Silver blasting caps are live.

Drill rig sits idle, waiting for water pump. Plane will arrive ~ 8:00 PM. Water pump will be installed and night shift will start drilling.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 04,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 13.3 C	Low 6.1C	
Wind Chill	N/A	**Wind Speed**	10-15 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny, light winds all day.		

WORK IN PROGRESS

- Daily safety meeting cancelled.
- With lack of work, crew was given a sleep- in day. Operators worked the afternoon. Labourers had the day off.
- Neyo drilling started drilling last night about 8:30 pm. Drill rig breakdown about 06:00 am. Repairs completed about 9:00 am. Approximately 70 holes drilled by 7:00 pm. Blast planned for about noon tomorrow.
- Approximately one (1) metre of fill placed over the fuel bladder area. This area will be used to stage the contaminated soil boxes.
- Demobilization route to the ocean near the Doris Bay mine scouted today.
- “After” photos taken in the Roberts Lake area.
- Mosquito quotient: low
- Camp occupancy 27

Pad constructed overlapping the fuel bladder area. Pad will be used to stage contaminated soil boxes.

Neyo Drilling and Blasting north of the tailings pond.

Former location of ~ 200 barrels at Roberts Lake.

New dock constructed at Roberts Lake. Frame is trusses from the mill.

3 bags of detonator cord collected.

Excavation at fuel bladder area.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 05,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 13.7 C	Low 7.1C	
Wind Chill	N/A	**Wind Speed**	5-10 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	High clouds during the morning. Clear in afternoon.		

WORK IN PROGRESS

- Daily safety meeting
    - Neyo Drilling and Blasting made a presentation on blasting safety, and explained how the charges would be set and detonated.
    - The following safety procedures were explained, and implemented:
        - All equipment was moved to the vicinity of Adit 2.
        - All personnel, including the cook, housekeeping staff and shift workers assembled on the rocks above adit 2.
        - A head count was made before the blast to confirm that everyone was present.
        - An air horn was sounded 12 times to provide a 2 minute warning.
        - A verbal countdown was given.
        - Following the blast, the blast area was inspected by Neyo Drilling and Blasting.
        - Following the inspection, the air horn was sounded once to indicate an "all clear".
        - Volume blasted 3,840 cu.m.
- Tailings pond:
    - Test results on water in the tailings pond indicate that metal levels are high, therefore the water cannot be pumped from the pond to adit 1 without treatment.
    - Site personnel recommended that the water be bridged using rip rap sized material.(300 mm to 350 mm).
    - INAC has expressed a concern that if water levels rise, new berm material is not impervious, and the berm may leak.
    - Surveys indicate that the freeboard, between current water levels and the top of the berm as it existed, is 10 cm. This freeboard is not sufficient for the solution proposed.
    - Site personnel advanced a solution that would involve excavating a key trench through the new berm material down to the old berm, as it existed, at the location of the tailings breach.
    - The key trench would be filled with a Type 2 sand-bentonite mix and compacted, thus raising the freeboard to approximately 30 cm.

  - Alternative solutions that need to be discussed include eliminating the liner, and storing and treating the water in the pond.
  - Matthew McElwaine (PWGSC) and Vijay Lanji (Quantum Murray) wiil be arriving on site tomorrow.
  - Issues to be discussed in a conference call between Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Charles Gravelle (DCS), Vijay Lanji (Quantum), John Weigle (Quantum), Gavin Domitter (Quantum) and Lawrence Borowski (SENES).
  - Water in the tailings pond has risen 5 cm in the past two weeks. This is a result of rock dumped in the pond and rainfall events.

- Adit 1
  - Crews continued preparing adit 1 to be imploded.
  - The adit was exposed and timbers removed.
  - The entire adit is full of ice (to the ceiling).
  - The adit will be imploded for a distance of approximately 3 metres and backfilled to prevent any thawing in the section that has not been imploded.
  - Solutions for pumping water from the tailings pond into adit 1 are no longer feasible. The adit is frozen solid.
  - Volume to be blasted 1,486 cu.m.

- Neyo Drilling and Blasting moved to the Adit 1 area. Drill pattern laid out and drilling commenced.
- Drilling at adit 1 completed late afternoon. Drill rig moved to area south of adit 1.
- Burning wood continues.
- Excavator being used to separate over sized boulders at the blast site.
- Boxes of contaminated soil moved onto the storage pad at the fuel bladder site.
- Hydrocarbons and other hazmat materials crated.
- Test strip at the tailings pond undertaken. A layer of rip rap placed. The rip rap displaced the tailings which rose into the rip rap. Water was displaced. Accordingly, the test was considered a failure. This method may be successful if an inordinately thick layer of rip rap is placed, which would raise the elevation of the top of the berm.
- Mosquito quotient: high
- Camp occupancy 27

Ice in adit 1. This is at ceiling level.

Workers installing dynomite

Equipment moved away from the blast area.

Blast north of tailing pond

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 06,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 12.1 C	Low 6.1C	
Wind Chill	N/A	**Wind Speed**	5-10 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Cloudy, drizzle starting at noon. Light rain by afternoon.		

WORK IN PROGRESS

- Daily safety meeting
- Drill rig breaks down at 06:00 am. No drilling during the day.
- Adit 1 blasted at 09:00 am. Safety procedures as detailed in August 05 report followed. Camp was evacuated. Horn sounded 12 times, providing the 2 minute warning. Following the blast, the blast area was inspected and the horn sounded to provide the "all clear".
- Excavator sorting the rocks in yesterdays blast area.
- Material from the blast used to backfill adit 1. Additional material hauled in from yesterday's blast area.
- Adit 1 backfilled by end of day.
- Site visit by Matthew McElwaine and Vijay Lanji.
    - Considerable discussion on a number of options to deal with tailings pond issues.
    - EBA designer confirmed that liner must be placed over the tailings.
    - A solution was proposed consisting of the creation of a wet cell and a dry cell within the bermed area. Work in the dry cell can proceed. This would consist of placing the steel.
    - The liner will be placed through the water, then backfilled in accordance with the drawings.
    - As a backup plan, the water will be pumped out, into two lined cells near the mill site that would be constructed. The first cell would receive the contaminated water. The water would be treated and discharged into the second cell. Treated water would be tested, and if criteria is met, 10 day notice to discharge will be given as required under the water license.The liner would then be placed over the tailings.
    - A drawing showing this design will be submitted.
    - The key trench with bentonite seal will be constructed.
    - Issues related to pay items were discussed.
    - A walk around at the site was undertaken.
    - Many phone calls were made, including a call to Dele Morakinyo.
    - Charles Gravelle was not available.

- Plane arrived today shortly afternoon from Yellowknife. Two trips were made to Cambridge Bay. The first trip was for groceries. The second was for fuel. The plane then returned to Yellowknife.

- Camp occupancy:
    - Two workers departed.
    - Archie (blaster) departed.
    - Medic departed. Replacement arrived.
    - Camp occupancy 24

Blast at Adit 1

Aftermath of blast at Adit 1

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 06,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 9.2 C	Low 5.1C	
Wind Chill	N/A	**Wind Speed**	30+ kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Rain ended late evening last night. Rain early morning tapering to showers by 9:00 am. Cloudy from mid afternoon. Windy and cold. Forecast snow on Monday		

WORK IN PROGRESS

- Daily safety meeting
- Drill rig remains inoperative. Parts arrived at 5:00 pm. Night shift will continue drilling.
- Wolf shooting incident: report prepared late last night and distributed. Followed up with the Wildlife officer in Cambridge Bay. At his request, the wolf was skinned, head cut off, and forwarded to Cambridge Bay. The carcass will be incinerated.
- Excavator continued to sort blast material. Some material used to extend pads.
- Workers assembling crates. Cylinders and asbestos board crated for shipment.
- Surveyor prepared drawing of locations for confirmatory testing. Drawing was distributed to Matthew McElwaine, Charles Gravelle and Henry Wong.
- Phone call to DCS, Rick German detailing issues at site. Rick German confirms that DCS will sign off on tailings pond updated drawings.
- Phone calls to Charles Gravelle regarding issues on site and confirmatory sampling requirements.
- Phone calls to Henry Wong regarding availability of sampling staff.
- Health and Safety officer, John DeSchutter left the site and reported to the Stanten Hospital in Yellowknife due to medical issues (high blood pressure) and will not be returning.
- Surveys and updated plans of the proposed landfill continue.
- Camp occupancy 23.

Completed Adit 1

Sorting blast rock north of the tailings pond continues

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 09,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 8.1 C	Low 3.3 C	
Wind Chill	N/A	**Wind Speed**	10-15 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	3 mm estimate
Conditions	Rain in the morning until 9:00 am. Cloudy until noon. Scattered clouds in the afternoon.		

WORK IN PROGRESS

- Daily safety meeting
- Blast south of adit 1at 9:00 am. Blast was not successful. It was concluded that there was water in the holes, which froze, and when the explosives were set they weren't at the bottom of the holes. It was estimated that the yield was ~ 1000 cu.m , down from the target of 1,700 cu.m.
- Continued building the slopes of the berm (south side) around the tailings pond.
- Test pits were excavated at the mill, garage, muskeg, and fuel bladder sites. At the muskeg site, it was noted that permafrost had melted ~ 300 mm and there was a hydrocarbon smell. At the garage site, permafrost had also melted. Fill material at both sites was removed. Material below the original permafrost line was excavated and removed. It is estimated that at these two sites ~ 50 cu.m. were removed. At the garage site staining was still evident, but as the stains were in permafrost, the excavator was unable to remove it. Henry Wong advised us to scrape away at it until it is removed. No issues were encountered at the mill or fuel bladder sites.
- Visitors: Henry Wong – SENES
- Plane today. Blasting crew and worker left
- Camp occupancy 17

Blast south of adit 1

Re excavated muskeg site

Re excavated garage site

Aftermath of the blast

Test section at the tailings pond….considered a failure

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 10,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 9.8 C	Low 4.7 C	
Wind Chill	N/A	**Wind Speed**	15-20 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	trace
Conditions	Cloudy at 7:00 am. Cleared for a short period in am. Clouded over with periodic showers until mid afternoon. Cloudy thereafter.		

WORK IN PROGRESS

- Daily safety meeting
- Completed constructing the south slope at the landfill site.
- Completed backfilling the vent raise and adit 2. Cleaned up the road to Adit 2.
- Contaminated soils loaded into available boxes (9). Need banding clips to complete the work.
- Started sorting blast material south of Adit 1.
- Camp occupancy 17

Backslopes on south side of landfill.

Backslopes on south side of landfill

Excavators backfilling at vent raise and adit 2

Contaminated soil loaded into boxes

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 11,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 11.7 C	Low 0.9 C	
Wind Chill	N/A	**Wind Speed**	15-20 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Cloudy at 7:00 am. Fog at 7:30 am, lifting later in the morning. Scattered clouds most of day.		

WORK IN PROGRESS

- Daily safety meeting
- Conference call with Matthew McElwaine (PWGSC), Dele Morakinyo (INAC), Vijay Lanji (Quantum), Bill Horne (EBA), John Weigle(Quantum), Richard Johnson (Focus), Gavin Dommiter(Quantum) and Lawrence Borowski (SENES). Conference call was in response to comments raised by Bill Horne following his review of Tailings Plan Rev C. At the conclusion of the conference call Tailings Plan Rev D was generated. Salient differences between Tailings Plan Rev C and Tailings Plan Rev D are as follows:
    - Rev D includes stabilizing the tailings before placing the geotextile.
    - Rev D includes pumping contaminated water from the wet cell.
    - Rev D includes retaining contaminated water in a lined dry cell following placement of debris.
- Plan showing Tailings Plan Rev D and writeup prepared and distributed to Charles Gravelle (DCS) and Vijay Lanji. Charles Gravelle to review and forward on to Bill Horne (EBA) for review and comments.
- Access road to adit 2 cleanup completed.
- Bentonite plug on tailings pond berm completed.
- Authorization to construct an intermediate berm across the tailings pond received from Matthew McElwaine.
- Intermediate berm construction commenced. Work completed today included stripping overburden off the the wet cell area and establishing the core of the berm.
- Second excavator culling boulders to be used for stabilizing the tailings.
- Camp occupancy 17

Spreading bentonite for bentonite seal.

Mixing and compacting thin lifts of bentonite seal.

Completed Adit 2

Completed cleanup of road to adit 2

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 12,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 11.0 C	Low 5.5 C	
Wind Chill	N/A	**Wind Speed**	10 - 15 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	trace
Conditions	Cloudy with light rain at 07:00 until ~ 10:00 am. Cloudy with occasional showers throughout the day.		

WORK IN PROGRESS

- Daily safety meeting
- Completed construction of the intermediate berm at the landfill site. Perimeter lined with type 2 material to receive the liner from borrow source 5.
- Liner arrived by plane today at 3:00 pm.
- Banding clips arrived today.
- Work crew resumed banding the contaminated soil boxes.
- Aircraft made 2 flights to Cambridge Bay bringing in fuel (7 drums per load). Crews ferrying fuel between the Roberts Lake dock and the camp site.
- Test results for waste water received. Waste water test results meet specified discharge criteria. Waste water can now be discharged from all the holding tanks.
- Test results for contaminated soil were not received.
- Additional information, requested by Charles, was added to Tailings Pond Rev D plan, and resubmitted. The plan was then submitted to Bill Horne, EBA.
- Discussed queries raised by Bill Horne with Charles.
- Camp occupancy 17

Intermediate berm under construction

Slopes of dry cell being lined with Type 2 material to receive 20 mil liner.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 14,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 18.0 C	Low 3.5 C	
Wind Chill	N/A	**Wind Speed**	0-5 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny all day. Hot; Winds light, mosquito quotient high away from the camp area		

WORK IN PROGRESS

- Daily safety meeting
- Top of type 2 material in landfill surveyed.
- Placed blast fines in bottom of landfill to reach required thickness.
- Started placing tires, steel, and fuel bladder in landfill.
- Workers assembling crates for hydrocarbon contaminated soils.
- Excavator continued stockpiling type 2 material from borrow source 4.
- Excavation in borrow source 4 backfilled with blast rock.
- Meeting with John Weigle and Gavin Domitter to go over all pay items, and identify over runs, and other issues.
- Camp occupancy 16

Excavation and stockpiling at borrow source 4

Blast fine material to fill to required thickness (.5 m) over the liner. Material only placed where steel can be placed. Steel will not be placed against the banks to avoid any chance of the liner being punctured.

Start of debris placement which included the fuel bladder, tires and steel

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 15,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 16.7 C	Low 7.6 C	
Wind Chill	N/A	**Wind Speed**	Varied from calm to >25 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	trace
Conditions	Varied: Cloudy in early am, brief sunny periods, showers in afternoon, scattered clouds in the afternoon.		

WORK IN PROGRESS

- Daily safety meeting
- Completed placing tires, fuel bladder and all steel into the dry cell.
- Surveyed to ensure compliance with elevation limits.
- Site beautification – cleaned up cigarette butts, empty coffee cups, and hand raked small ruts around the site. Cleaned up any boxes, rinsed empty waste water containers, and stored the containers in a tidy manner.
- Cleaned up scattered steel in the steel stockpile area.
- Continue sorting rock.
- Completed backfilling in borrow source 4 area.
- Pumped water from wet cell to dry cell ~5 hours.
- Hose on loader burst. No replacement until Monday.
- Wildlife sighting: A grizzle bear was sighted last night ~ 9:00 pm by persons at the dock. The bear headed north up the valley to a point opposite the landfill area (south west of camp). The bear then headed west, and over a ridge and was gone.
- Camp occupancy 16

Dry pond with all steel placed

Overall view of the landfill area

Pumping system set up. Worker is at the filtering device

Pumping nearing completion

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 18,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 11.0 C	Low 6.8 C	
Wind Chill	N/A	**Wind Speed**	Ne 20kph + in am, light in pm
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	trace
Conditions	Cloudy, cold, windy in am. Fog, drizzle by 10:00 am. Clear, pleasant in pm.		

WORK IN PROGRESS

- Daily safety meeting
- Completed placing type 1 material below the debris.
- Placed tubing, and balance of debris in wet cell.
- No test results on ash.
- Work crew building boxes. 10 assembled.
- Drilling continues.
- Survey monument hole drilled. Monument partially installed, and grout placed (Interrupted by testing requirement)
- Type 1 material placed at east end of dry cell.
- Type 2 material placed over debris in dry cell and packed with the excavator.
- Test samples taken at site ET1011, fuel bladder area and garage. Plane was chartered out of Cambridge Bay to pick up the samples and deliver to Canadian North.
- Wildlife: Wolf, in old camp area south of the tailings pond ~ 3:00 pm
- Grizzle bear, by the creek ~ 200m west of the dock ~ 9:00pm
- Total 17

Drilling rock face.

Debris placement in wet cell.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 19,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 11.7 C	Low 2.5 C	
Wind Chill	N/A	**Wind Speed**	Light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clear all day		

WORK IN PROGRESS

- Daily safety meeting
- Small crew building boxes.
- Progress made in finalizing hazmat issues. Report received from Darryl Stowe assessing his lists against contract items. Descriptions of contents of boxes left by John Dechuter summarized.
- Drill rig broken down in the afternoon.
- Stripped borrow pit 4, and hauled type 2 material from this pit in the afternoon. This pit is a poor source of material as permafrost is near the surface. It will be necessary to scrape away at thawed material daily.
- Survey monument installed.
- Type 2 material in dry cell complete, compacted and surveyed.
- Test results for ashes received. Burn pile results all below detectable limits. Incinerator tests results reported measurable concentrations of various PAH parameters however they are below the CCME 2008 standards for PAHs.
- Numerous emails related to contaminated soil issues.
- Wildlife: Wolf passed within 10 metres of camp trailers, stopped and chewed on the sewage line, then headed east over the rocks. Wolf paid no attention to nearby onlookers. Time 7:00 pm
- Total 17

Compacting Type 2 material over the debris in the dry cell.

Excavating type 2 material from borrow source 4

Type 2 material in dry cell complete

Wolf behind the trailers

Compacting type 2 material over debris in the dry cell

Grizzle Bear by the creek

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 20,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 10.0 C	Low 3.6 C	
Wind Chill	N/A	**Wind Speed**	North 15-20 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny +5C at 7:00 am. Cloudy by 11:00 am front moves in at 3:00 pm. Cloudy, windy and cold		

WORK IN PROGRESS

- Daily safety meeting
- Small crew assembling boxes
- Stripped a larger area in borrow source 4. It is clear that borrow source 4 and borrow source 5 will not yield sufficient quantity to place 1 m lift in the wet cell. Will continue to strip as much of source 4 as possible.
- Hauling and placing type 1 material on dry cell. Nearing completion.
- Hauled ashes into wet cell.
- Surveyor tied in monuments in the Roberts Bay area.
- Held site meeting.
- Much of the day spent trying to locate soil samples that had been “misdirected” to Calgary. Samples will be in Edmonton 8:00 pm, delivered to Maxxam’s lab, and tested starting at 8:00 am tomorrow.
- Drill rig down all day. Should have repaired later this evening and will drill all night.
- Camp :18 persons (Dustin left, Archie the blaster, and a mechanic arrived)

Compacting type 1 cap over the dry cell

Borrow source 4. Permafrost a major issue

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 22,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 10.4 C	3.3 C	
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny light winds all day		

WORK IN PROGRESS

- Daily safety meeting
- Most of morning spent on activities related to the blast at 9:50 am. All equipment and fuel tank moved a safe distance. Following the blast everything was moved back. This was the largest, and final blast at the site. One piece of rock landed on the roof of the camp, above the furnace room.
- The balance of the morning and the afternoon were spent excavating and placing thermistos. Thermistor A was installed on bedrock. Thermistor B was installed on permafrost (there was still tailings). Thermistor C was installed .5 m below original ground. There was < .5 m of water in location A and B. Location C was dry.
- Test results for Aug 18 were received. The test result at the fuel bladder was clean. Test results at the garage were clean except for the furthest south location sampled. Test result at location ET 1011 came back hot. PHCs are the issue. Metals are not. Lab requested (Henry) to provide an alternate PHC analysis. Lab also requested to provide a chromotograph and an opinion as to whether the high result could because of peat.
- Discussed results with John Weigle. More excavations will be carried out at sample locations G2 (283), 256, and 1112 tomorrow afternoon and results shipped out tomorrow.
- Some rock hauled to the two open excavations that are clean. Dressing material (rock) also hauled to the blast area south of adit 1, which is now depleted..
- Camp :14 persons (Blasters departed. Bear monitor returned)

Blast north of landfill

Blast north of landfill

Thermistor at location “A”. Marks on the pipe are at one meter intervals

Setting thermocouple “B”

Hauling Type 1 material from blasted area south of adit 1. This source is nearly depleted.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 23,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 12.7 C	2.5 C	
Wind Chill	N/A	**Wind Speed**	South 15 – 20 kph
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny, high scattered clouds, windy all day		

WORK IN PROGRESS

- Daily safety meeting
- Most of the morning spent addressing contaminated soil issues. Excavations were undertaken, soil samples collected, packaged and shipped to Edmonton.
- The balance of the morning and afternoon were spent capping the dry side of the landfill. Cap is now roughed in, but needs final grading, compaction, and crown placed. Side slopes need to be completed.
- Balance of crew were involved with the fuel resupply (49 barrels in the last two days). Work involved moving full drums from the dock, pumping into the main tank, then returning the empties to the dock to send back.
- Wildlife: Grizzle, in the Roberts Lake dock area ~ 11:00 am
- Camp :14 persons (Blasters departed. Bear monitor returned)

Loading type 1 material. Note how much the pile has been reduced.

Final cap placement

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 24,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 17.2 C	6.3 C	
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clear all day. Light wind		

WORK IN PROGRESS

- Daily safety meeting
- Most of day spent completing installation of the thermistors. Two completed
- Completed dressing blast area number 2 (South of adit 1.)
- Hauling blast rock to borrow source 4. 50 loads hauled today.
- Worked on boxes and filling with contaminated soil in the morning.
- Constructed berm with type 2 material to divert drainage at the north west corner of the landfill. Void south of the berm will be filled with type 1 material.
- Laid out crown of the landfill.
- Sampled floor of four excavations at the garage site.
- Wildlife (yesterday): Two wolves seen together west of the dock
- Camp :14 persons

Final dressing on blast 2 area, south of Adit 1.

Berm at north west corner of landfill. Void to the south will be filled with type 1 material.

Borrow Area 4. Capping with type 1 material just starting

Preparing to grout thermistor A

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 25,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 17.5 C	5.9 C	
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clear all day. Light wind		

WORK IN PROGRESS

- Daily safety meeting
- Completed placement of thermistors, ground rods, grouting and placing protective mounds.
- Completed hauling waste rock to borrow area 4.
- Completed spreading and compacting rock in borrow area 4
- Filled in original garage excavation.
- Remove steel balls from trammel, to reduce weight.
- Wildlife: Wolf, yesterday, approached the trailers, peed on the trailer, chewed the sewer line and moved on.
- Test results from tests taken Aug 23 received. Test results were not promising.
- Today, wolf came by on the same path, east of the trailers, and kept on going.
- Camp :14 persons

Completed blast site 2, south of adit 1

Borrow source backfilled. Excavators are compacting with their tracks

Thermistor A. Ground rod installed, grout placed. Type 2 protection placed. All three thermistors at this stage. Beads and sand in the pipe will be installed when final cap completed.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Lawrence Borowski	**Date:**	August 26,2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Lawrence Borowski; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	High 17.0 C	5.1 C	
Wind Chill	N/A	**Wind Speed**	light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Clear all day. Light wind		

WORK IN PROGRESS

- Daily safety meeting
- Filled in gully between on west side of landfill, between landfill and rock outcrop.
- Continued building boxes and filling with contaminated soil.
- Started placing crown on landfill.
- Excavations at the garage site.
- Test results received from August 24th base samples. All results are clean, except for one sample that needs to be retested.
- Camp :15 persons (cook leaves, Two arrive, Henry Wong and replacement cook)

This will be my final on-site report. Thank you all for your support during the past 36 days. I will be leaving Roberts Bay tomorrow morning. Henry Wong will be replacing me.
Lawrence Borowski

Gully on west side of landfill between landfill and rock outcrop filled to provide positive drainage

Potential contaminated area

Start placement of final crown

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Henry Wong	**Date:**	Friday August 28, 2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Henry Wong; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	12 C		
Wind Chill	N/A	**Wind Speed**	Light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sun and Clouds		

WORK IN PROGRESS

- Daily safety meeting
- Quantum started loading equipment onto the trailer beds preparing for site demobilization
- During the afternoon, the housing and PVC pipe section of Thermistor A was excavated out, PVC pipe section replaced, housing reset and re-grouted.
  - It appeared that the PVC pipe had undergone chemical or heat collapse.
- Verification samples for the Expanded Garage Area contaminant zone were dropped off at the Maxxam Analytics laboratory early morning and results received late afternoon.
  - Samples 403 and 402, situated at the north end of the contaminant zone, continued to exceed the site cleanup objectives
- Impacted soil from the north zone was excavated to bedrock; approximately 10 m^3 of contaminated soil was excavated out and stockpiled.
- Work continued on the construction of the remaining soil boxes and containerization of PHC-contaminated soil from the mill area.
- Vehicle maintenance; Hagglund wheels, airbag
- Camp :14 persons

Landfill Crown.

Camp Overview.

Camp Overview.

Loading Equipment.

Wednesday Remedial Excavation.

North end of Contaminant Zone Advanced to Bedrock.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Henry Wong	**Date:**	Saturday August 29, 2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Henry Wong; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	15 C		
Wind Chill	N/A	**Wind Speed**	Light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny		

WORK IN PROGRESS

- Daily safety meeting
- Quantum continued loading equipment and materials onto the tractor trailer beds in preparation for winter demobilization:
  - containerized soil crates, 10 of 145; and
  - lead painted mining equipment
- The remedial extended-zone-excavation from the Garage Area was backfilled with blast rock today.
- The PVC pipe in Thermistor A collapsed again after resetting the housing; the housing was excavated out again; however, the grout and cut pipe remains locked in the housing
- Work continued on the construction of the remaining soil boxes and containerization of PHC-contaminated soil from the mill area.
- Camp :14 persons

Loading Containerized Soil Crates.

Loaded Mining Equipment.

Extended Garage Area Remediation.

Camp Overview.

Camp Overview.

Camp Overview.

Excavation of Thermistor A housing.

Collapsed PVC Pipe.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Henry Wong	**Date:**	Sunday August 30, 2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Henry Wong; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	11 °C		
Wind Chill	N/A	**Wind Speed**	Light
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sun and clouds		

WORK IN PROGRESS

- Daily safety meeting

- Quantum continued preparing the camp for shutdown:
  - Vehicle maintenance; and
  - Pulling trailer beds out for loading
- The borrow area north of the landfill has been exhausted and closed. The area was restored to blend into the existing topography.

- The extra-work soil crates arrived at Cambridge from Yellowknife Saturday evening. Forty (40) crates were shipped via DC-4 to Cambridge Bay.
- A charted Air Tindi twin otter arrived at site Saturday evening from Yellowknife and dropped off a load of crates (4 crates) and food re-supply. The plane headed to Cambridge Bay to overnight for shuttling the crates to site the next day.
- Low-ceiling fog out of Cambridge Bay delayed the start-up until mid-morning. A total five (5) twin otter loads were shuttled from Cambridge Bay to site; 10:00 – 19:30. Each load hauled five crates to site. A total twenty-nine extra crates have been mobilized to site. Another 15 crates are in Cambridge bay to be shuttled the next day.

- The crew worked at unloading the planes and started assembly of the crates.

- The housing and PVC pipe in Thermistor A were re-installed in the afternoon. After the 2-hour initial grout set and with no evidence of pipe collapse, the thermistor cable and data logger were set up.
- All three (3) thermistor installations are in place and operating. The data logger clocks were set to the current time and date and an initial data download was done to test data retrieval. Temperatures were observed from all in ground bead late evening.

- Camp end of day @ 15 persons

Re-shaped Borrowed Area North of Landfill.

Mobilization of Additional Soil Crates to Site.

Final Installation Setup of Thermistor A.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Henry Wong	**Date:**	Monday August 31, 2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Henry Wong; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	9 °C		
Wind Chill	N/A	**Wind Speed**	Strong gusting winds in the afternoon
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	Intermittent rain through morning
Conditions	Heavy fog through morning		

WORK IN PROGRESS

- Daily safety meeting
- Quantum continued preparing the camp for shutdown:
- Low-ceiling fog at site and Cambridge Bay. The air shuttle of the remaining 15 crates from Cambridge Bay was weathered out. The Air Tindi twin otter returned to Yellowknife late afternoon; 16:00.
- The crew worked on construction of the box crates that were hauled to site yesterday and loaded the PHC impacted soil from the extended garage area remediation. Twenty-nine (29) crates were filled with PHC impacted soil.
- The field work for the as-built landfill topography was completed today.
- Camp @ 15 persons

Site Fogged In.

Construction and Loading of Box Crates.

Remaining PHC-Impacted Soil to be Containerized.

Containerized Impacted Soils.

Site Overview.

Landfill Topography.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Henry Wong	**Date:**	Tuesday Sept. 1, 2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Henry Wong; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	2 °C		
Wind Chill	N/A	**Wind Speed**	80 km to 100 km winds
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	Intermittent rain through day Forecasted 5mm
Conditions	Heavy fog through day		

WORK IN PROGRESS

- No work was carried out today due to weather and pending transport of the remaining crates from Cambridge Bay. An Arctic Sunwest twin otter from Yellowknife has been scheduled for shuttling the crates tomorrow.

- Camp @ 15 persons

Site Overview.

SENES Consultants Limited

1980 - 2005
25
YEARS OF
ENVIRONMENTAL EXCELLENCE
WORLDWIDE
SENES
Consultants
Limited

121 Granton Drive, Unit 12
Richmond Hill, Ontario
Canada L4B 3N4
Tel: (905) 764-9380
Fax: (905) 764-9386
E-mail: senes@senes.ca
Web Site: http://www.senes.ca

MEMORANDUM

TO: Ms. Giselle Cotta – PWGSC 340807
Mr. Matthew McElwaine – PWGSC
Mr. Dele Morakinyo - INAC

FROM: Mr. Pascal Simard 29 April 2010

SUBJ: Roberts Bay and Ida Bay Demobilization Site Visit 29 April 2010

Pursuant to the request of Mr. Matthew McElwaine of PWGSG the writer attended the demobilization site visit held on Thursday 29 April 2010. The following is a list of site visit attendees:

Mr. John Weigel	Stan Dean Ltd. (sub-contractor to Quantum)
Mr. Pascal Simard	Departmental Representative

The Program

Upon completion of the remobilization of all equipment and materials, the Plan was to visit the Roberts Bay and Ida Bay sites to review and inspect the conditions of the trail used, former Ida Bay mine site and structures, and the new laydown area. The purpose of this program was to ensure no additional equipment or material was left behind and required to be mobilized. This was to be preceded by a flow over of the trail used to mobilize the equipment from Ida to Roberts Bay. This was to take upwards of 5 hours. Upon completing the inspection the Departmental Representative and the crew team would fly back to Yellowknife.

Log of Site Visit

Mr. Simard proceeded to the Sunwest land-base hangar at 6:30 AM. The flight was ready to go by 7:30 AM. The weather in Yellowknife was sunny with few clouds and plus one degree Celsius with light winds.

Flight arrived at Ida Bay at approximately 10:30 AM by landing using skis on the Arctic Ocean in front of the Ida Bay Mine Site.

During the visit Messrs. Weigel and Simard where in discussions to confirm how the mobilization work was completed. Mr. Weigel who was responsible for the mobilization of the equipment explained how the mobilization was undertaken. It took about 5 to dry out the equipment and get it ready to mobilize to Roberts Bay and another 5 days in order to get the equipment and materials over to Roberts Bay including the departure day.

The condition of the former mine site and camp at Ida Bay, the trail used and the new laydown area at Roberts Bay was reviewed by Mr. Simard and it was determined the work was completed according to the agreement.

A photograph journal of the site was taken by Mr. Simard. Some select photographs have been attached.

The team left site at approximately 13:30 PM and landed in Yellowknife at 4 PM.

Issues discussed on site aside from those related to the mobilization of equipment and materials:

1. Diesel Fuel spill – A small spill occurred during the mobilization activates in April 2009. The spill was caused when a worker inadvertently opened a valve under a piece of equipment while digging it out of the snow. The former spill area was shown and Mr. Weigel confirmed a maximum of 40 Litres of fuel was spilled. The spill area was scraped off and material was put on a tarp then covered with 4" rock (no sample to be taken there). The remaining soils in place were incinerated using the equipment on site to ensure no residual contamination was left in place. No sheen or odours were observed on the spill area or at the small stock pile. Mr. Simard asked Mr. Weigel that during the next visit, they gather the small stock pile with potential contamination and put it in available 205 litre drums to be removed with the crates.

Photographs

Photo 1: Laydown area at Roberts Bay as seen from west side.

Photo 2: Laydown area at Roberts Bay as seen from west side.

Photo 3: Office Laydown area at Roberts Bay as seen from west side.

Photo 4: Hydrocarbon spill area, in center of photo.

Photo 5: Stock pile of scrapped potentially contaminated soil, covered with 4" gravel.

Photo 6: Trail used for transporting equipment, northern portion.

Photo 7: Trail used for transporting equipment, central portion.

Photo 8: Trail used for transporting equipment, southern portion.

Photo 9: Former laydown area at Ida Bay looking north-eastward.

Photo 10: Former laydown area at Ida Bay looking northward.

Photo 11: Former laydown area at Ida Bay looking south-eastward.

Photo 12: Former laydown area at Ida Bay with landfill cell, looking southward.

Photo 13: Landfill Cell at Ida Bay looking north-westward.

Photo 14: Roberts Bay laydown area, looking northward.

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Pascal Simard	**Date:**	July 21, 2010
Contractor:	Quantum Murray	**Project**	PWGSC:
Site personnel:	Pascal Simard-SENES; John Weigle (site super), Gavin Domitter, Wally Wallster, Donny Boxer-Quantum Murray; Jimmy Evalik-Ekaluktutiak HTO		

WEATHER

Temperature (°C)	High 10 C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 15 km p. h.
Barometric Pressure	Not available	**Tendency**	North-East
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Cool and mostly cloudy to partially cloudy		

WORK IN PROGRESS

- Mobilization to site. Quantum crew (including Pascal Simard from SENES) arrived on site at 6h00pm from Yellowknife and Jimmy Evalik arrived at 8h00pm.
- 5 Drums of fuel was received from Newmont Mine site via helicopter.
- It is obvious that ground is already soft under waste rock and this could be a challenge considering the limited amount of waste rock available.
- Picture were taken by Gavin Domitter and Pascal Simard of the work areas prior to record conditions prior to work being started.
- Day spent mobilizing to site, organizing camp and starting/tuning equipment. A small amount (roughly 10m3) of waste rock was laid down to accommodate entry to bunk house and kitchen trailers as well as machinery running in main area in front of trailers.
- Wildlife Sighting: One Ptarmigan.
- Camp occupancy: 6
- Mosquito quotient: low due to wind

Exploration trench as of July 21st 2010, prior to final grading

Overview of camp area at arrival on July 21st 2010, prior to any site work

Overview of camp area at arrival on July 21st 2010, prior to any site work

Overview of camp area at arrival on July 21st 2010, prior to any site work

Shoreline area at arrival on July 21st 2010, prior to any site work

Overview of old adit area at arrival on July 21st 2010, prior to any site work

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Pascal Simard	**Date:**	July 22, 2010
Contractor:	Quantum Murray	**Project**	PWGSC:
Site personnel:	Pascal Simard-SENES; John Weigle (site super), Gavin Domitter, Wally Wallster, Donny Boxer-Quantum Murray; Jimmy Evalik-Ekaluktutiak HTO		

WEATHER

Temperature (°C)	High 15 C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 5 to 10 kph,
Barometric Pressure	Not available	**Tendency**	West, north-west
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny		

WORK IN PROGRESS

- Orientation H&S meeting and Daily safety meeting.
- Work plan kick off meeting
  Topics discussed:
  - Excavation of shoreline
  - Preparation of demob surface
- Preparation of the area to receive boxed crates and various equipment closer to shore and loading ramp with waste rock to avoid soft ground conditions in late August as well as facilitating loading operations.
- Mr. Domitter, Simard and Weigle did a walk around site to discuss work to be completed at the following areas:
  - Shore line excavation and grading of waste rock
  - Exploration trenches and the vent shaft backfilling. 3 trenches total: 1.2m x 1m x 10m (original, mention in specs), ... (additional, not mention in specs) and .... (additional, not mention in specs).
  - Removal of wood at vent raise.
  - Small rock core debris pile north of exploration trenches (not mention in the specs).
  - Ida Old camp battery related contaminated soils already excavated according to Wally Wallster.
  - Collection of various scattered metal, tin cans and wood debris around Ida Bay old camp, mostly on rock outcrop along seashore.
- Mr. Domitter gathered information for times of high and low tides, after discussion with Mr. Simard and Weigle about a plan of attack, to more precisely determine the adequate area to be excavated. Flags and stakes were put in-situ based on the low and high tide times. Final excavation of the metal impacted waste rock within the low and high tide marks is planned for tomorrow along with the backfilling of the exploration trench and vent. As we speak the high tide is at 0.8m while to seasonal high is apparently at 1.2m. Therefore, it was decided to remove waste rock slightly above the current observed high mark.
- A total of 52 loader buckets (3.8m3 each) of waste rock was removed from the shore line, above the high tide mark for grading purposes and used for the new boxed crates lay down area.
- Rough grading of waste rock above high tide mark along shore line, in preparation of the excavation of the metal impacted waste rock.

- Confirmation sampling at the old batteries site was done on remaining surface soil (0-50mm) by Mr. Simard. Area was pointed out by Willy Evalik who was present during the removal of the batteries.
- Sampling was done by Mr. Simard on the diesel fuel spill stock pile. Stock pile is approximately 3m x 5m and 0.4m high at its apex. No visual signs of hydrocarbons were observed although a faint to medium odour was present at the four composite location sampled.
- 4 very small exploration trenches located approximately 25m to the south of the east end of the exploration trench were back filled to adjacent grade with waste rock. No 1m mound were judged necessary since the exploration holes had a solid rock bottom, were free of water, only 0.75m deep and approximately 1m x 1m in dimension. Approximate locations of the exploration holes were laid out on the field site plan used by Mr. Simard and chained.
- Quantum started moving boxed crates to the final location before loading. A total of 38 crates were moved to the new lay down area.
- Wildlife Sighting: One groundhog, a few birds.
- Camp occupancy remains at 6
- Mosquito quotient: low due to wind

Excavation of shoreline waste rock, looking south, south-west

Bedrock at shoreline, looking south, south-west

Fuel spill stockpile, looking south-east

Small trenches south-east of main exploration trench backfilled and graded, looking north-west

Small trenches south-east of main exploration trench backfilled and graded, looking south-east

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Pascal Simard	**Date:**	July 23, 2010
Contractor:	Quantum Murray	**Project**	PWGSC:
Site personnel:	Pascal Simard-SENES; John Weigle (site super), Gavin Domitter, Wally Wallster, Donny Boxer-Quantum Murray; Jimmy Evalik-Ekaluktutiak HTO		

WEATHER

Temperature (°C)	High 15 C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 5 kph to none
Barometric Pressure	Not available	**Tendency**	East
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny to gradually partly cloudy at end of day		

WORK IN PROGRESS

- Daily safety meeting.
- Work plan kick off meeting
  Topics discussed:
  - Excavation of shoreline
  - Backfilling of exploration trench
  - Moving boxed crates
- Mr. Domitter and Simard did a walk around at the old batteries' site to discuss further excavation to be completed since battery parts and cell parts are still present which yield a concern about more soil needed to be remove. More soil will be remove subsequently.
- Quantum decided to remove the 4 to 5 m3 hydrocarbon impacted spill stock pile from the site to avoid future necessary work if the chemical analysis fails.
- During low tide in the morning, crew proceed with the excavation of metal impacted waste rock above the low tide mark up to 2' above the current high tide. The northern half of the shoreline is excavated to bedrock and the remaining length is sloped accordingly. A total of approximately 40m3 (11 loads) was removed for the remediation of the metal impacted waste rock between the low and high tide marks.
- Backfill of Exploration trench with material excavated from low/high tide marks with additional 1m above ground. Then sloped to the surrounding natural ground with type 1. A total of 13 loads (3.8m3 each) of shoreline material was backfilled into the trench with the addition of a total of 4 loads (3.8m3 each) of type 1 waste rock were brought to cap and grade the exploration trench.
- Wood over vent shaft was removed and one load (3.8m3) of metal impacted waste rock from shoreline was use to backfill the deeper portion of vent shaft. Remaining backfilling, capping and grading will continue tomorrow.
- Rough grading of shoreline between low and high tide marks during low tide.
- Rough grading of waste rock above high tide mark along shore line.
- Continue moving the boxed crates to the final location before loading. A total of 108 boxed crates were moved. The old lay down area is greatly damaged by the loader tracks.
- Mobilization of mining equipment, stored over old adit, closer to loading ramp.

- Mr Simard, Domitter and Weigle did a site visit to the Robert's Bay site at 6h00pm via helicopter (supplied by Newmont mine site). The site in general is in very good condition and work completed appear to have been done in a professional manner:
  - general grading is nicely done
  - no erosion on slopes at any back filled areas
  - small amounts of scattered debris, such as wood, plastic and metal debris, bigger lumber pieces, plywood, steel wired stakes, explosive cable and the odd pop can were observed on site.
  - landfill cell is in good conditions with neither caved or eroded areas
  - borrow areas appeared adequately backfilled and graded with no signs of erosion or collapsing areas and free of surface water
  - the two former adits appeared adequately backfilled with no signs of erosion or collapsing areas and free of surface water
  - old coring
- Mr. Simard left a message today at 10h30 am to Mr. Matthew McElwaine for an update on the project and the work being completed. A second attempt to contact Mr. McElwaine was done at 5h20pm again without success but no message was left this time.
- Wildlife Sighting: One Caribou at Robert's Bay site, one sand piper
- Camp occupancy remains at 6
- Mosquito quotient: high

Shoreline excavation during low tide, looking south

Shoreline excavation, looking south

Soft ground during the relocation of the boxed crates

Roberts Bay site, looking south-west

Roberts Bay site, looking west

Roberts Bay site, looking east to the old adits and borrow area

Roberts Bay site, looking north-east to old adits and borrow area

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Pascal Simard	**Date:**	July 24, 2010
Contractor:	Quantum Murray	**Project**	PWGSC:
Site personnel:	Pascal Simard-SENES; John Weigle (site super), Gavin Domitter, Wally Wallster, Donny Boxer-Quantum Murray; Jimmy Evalik-Ekaluktutiak HTO		

WEATHER

Temperature (°C)	High 15-18 C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 0-5 kph to none
Barometric Pressure	Not available	**Tendency**	East
Relative Humidity	Not available	**Precipitation (mm)**	Less than 1mm
Conditions	Cloudy with periods of light rain in the morning, clearing out to sunny in pm		

WORK IN PROGRESS

- Daily safety meeting.
- Work plan kick off meeting
  Topics discussed:
  - Excavation of shoreline
  - Backfilling of vent shaft and final grading of vent shaft and adit areas
  - Moving boxed crates and various equipment
- Mr. Simard proceeded with sampling of two boxed crates from the Mill area for TCLP (metals) analysis for disposal purposes. According to Mr. Domitter, that is all the required TCLP by the landfill to receive the material. According to Mr. Weigle, all soil was initially stock piled prior to be stored in the boxed crates, therefore should be fairly mixed and representative. Although, it prevent precise identification of where the soil sampled comes from within Mill area.
- After more monitoring of high and low tides it was noticed that some high tide events were too close of the end of the excavation and therefore contaminated material remained within the limits of low/high tides. During this morning low tide, crew proceeded with further excavation of waste rock above the highest tide observed. As it stands now, 3/4 of the affected shoreline is excavated to bedrock and the remaining length is sloped accordingly. A total of approximately additional 20m3 (5 loads) was removed for the remediation of the metal impacted waste rock between the low and high tide marks. More material above high tide mark was needed to be removed due to the sloping of the underlying bedrock.
- Completion of vent shaft backfilling and grading. A total of 3 loads (3.8m3 each) of shoreline material was brought to the vent shaft for capping and grading. Surrounding blasted material was used for final grading.
- Rough grading of shoreline between low and high tide marks during low tide.
- Rough grading of waste rock above high tide mark along shore line.
- Completion of moving the boxed crates to the final location before loading. A total of 40 boxed crates were moved.
- Completion of mobilization of mining and mill equipment closer to loading ramp.
- Finale grading and packing of shoreline and adit areas
- Wildlife Sighting: At 4h45am a Grizzly Bear push on the entry door and the window of the 8 men sleeper (occupants at the time: Simard, Domitter, Boxer and Evalik) but as soon as occupants got

up the bear ran away and after investigating the site it could not be found again. Mr. Evalik stayed up the remaining of the morning hours as monitor.

- Camp occupancy remains at 6
- Mosquito quotient: high

Final grading of shoreline excavation, looking south

Backfilled exploration trench, looking North-east

Backfilled vent shaft and graded, looking west

Overview of damaged tundra, looking south-east

Overview of damaged tundra with backfilled exploration trench in top right corner, looking south-east

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Pascal Simard	**Date:**	July 25, 2010
Contractor:	Quantum Murray	**Project**	PWGSC:
Site personnel:	Pascal Simard-SENES; John Weigle (site super), Gavin Domitter, Wally Wallster, Donny Boxer-Quantum Murray; Jimmy Evalik-Ekaluktutiak HTO		

WEATHER

Temperature (°C)	High 10 C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 30-40 kph
Barometric Pressure	Not available	**Tendency**	East – steady strong
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny		

WORK IN PROGRESS

- Daily safety meeting.
- Work plan kick off meeting
  Topics discussed:
  - Grading of damaged areas
  - Transfer of one damaged boxed crate to a new one (later decided to be repaired instead)
  - Moving super sacs and remaining equipment to loading area
  - Moving trailers to loading area
- Mr. Simard proceeded with sampling of shoreline sediment and soil. One sample was taken within the low and high tide area. Another sample was taken above high tide mark to assess material that is likely going to be washed to shore during rain and spring melt periods in the short to mid-term time frame.
- Impacted spill stock pile was excavated and put into 3 boxed crates and 4 super sacs. Mr Domitter is aware that no cost can be claimed in regard of sampling, excavation, transportation and disposition can be claimed for this item since the spill was the responsibility of the contractor.
- Repair of broken boxed crate (1)
- Transferred 2 broken super sacs into one boxed crate
- Total to be disposed off site after final adjustments of today:
  - Boxed crates 191 (3 fuel spill not to be charged to job, 1 non-haz waste/garbage and 187 excavated material)
  - Super sacs 9 (4 fuel spill not to be charged to job and 5 excavated material
  - 4 garbage bags with various debris collected from the Ida Bay (1 bag) and Roberts Bay (3 bags) sites
  - 1 x 25 Litre pail of soil excavated at former batteries area at Ida Bay
  - 1 x 25 Litre pail of an unknown white granular residu from Roberts Bay. Analysis will dictate what is to be done with this material.
- A total of 478.8 m3 of waste rock material was excavated/moved/graded until today. Mr Simard asked Mr Domitter to provide estimates (qty) for dividing waste rock excavation/move/grading totals into the following categories:
  - Waste rock excavated/moved/graded for building ramp to load onto barge in August

  - Waste rock excavated/moved/graded for making drivable surfaces for equipment and for storing equipment
  - Waste rock excavated/moved/graded for backfill and capping of Adits, Exploration trench and vent shaft and other small trenches in the vicinity
  - Waste rock excavated/moved/graded within low-high tide marks
- Mr Simard also asked Mr Domitter to survey all areas where rough grading occurred such as rough grading of waste rock (according to categories mentioned above) and areas where grading of existing soils occurred only. The survey should also indicate separately the low-high tide related work.
- Rough grading of damaged area caused by relocation of boxed crates
- Excavated (with shovel) an additional 25 litre pail of soil at old batteries' location. Mr. Simard then re-sampled the remaining surface soil. One pail had already been removed when the batteries were removed.
- Walked around old camp site to gather all observed debris (old tin cans, glass, wood, domestic batteries, metal scrap, etc.), a full garbage bag was recovered as well as a 10 foot length of drilling rod.
- Rough grading of former boxed crates lay down area with excavator
- Mr Weigel decided to wait for tomorrow to move any trailers since space available is limited and the first trailers to move would be the sleepers and kitchen
- Wildlife Sighting: Birds and goffers
- Camp occupancy remains at 6
- Mosquito quotient: low due to strong winds

Excavation of additional soils at former location of batteries, looking north, north-east

Gathering of all non-hazardous debris observed at Ida Bay former camp facilities, looking south-west

Scattered debris (mostly glass and rusted metal tins) found during the site clean-up

Former boxed crates lay down area re-graded after their relocation and grading of waste rock for ease of travel with machinery and equipment during loading, looking west

Loading ramp with new lay down area for boxed crates (left) and Mill equipment (far right), looking east, south-east

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Pascal Simard	**Date:**	July 26, 2010
Contractor:	Quantum Murray	**Project**	PWGSC:
Site personnel:	Pascal Simard-SENES; John Weigle (site super), Gavin Domitter, Wally Wallster, Donny Boxer-Quantum Murray; Jimmy Evalik-Ekaluktutiak HTO		

WEATHER

Temperature (°C)	High 10 C	Low 5.0C	
Wind Chill	N/A	**Wind Speed**	Estimate 10 - 20 kph
Barometric Pressure	Not available	**Tendency**	North, Northwest
Relative Humidity	Not available	**Precipitation (mm)**	0
Conditions	Sunny		

WORK IN PROGRESS

- Daily safety meeting.
- Work plan kick off meeting
  Topics discussed:
  - Grading of damaged areas
  - Moving remaining equipment and trailers to loading area
- Mr. Simard, Domitter and Evalik returned to the Roberts Bay site with garbage bags to collect the debris observed during the site visit of July 23. A total of 3 full garbage bags were collected and the site was left free of debris.
- Day was spent moving the remaining equipment as well as 2 trailers (kitchen and bunk house) and the generator trailer.
- Rough grading of damaged area caused by relocation of trailers
- Wildlife Sighting: Birds and goffers
- Camp occupancy remains at 6
- Mosquito quotient: low due to winds

Overview of camp at the end of July's program, looking east

Overview of shoreline, looking west

Small pile of burnt debris recovered during final clean-up at Roberts Bay

Old tracks left from former operations in the vicinity of present work, looking north-east

Roberts Bay/Ida Bay Mine Site Remediation
DAILY REPORT

Prepared by:	Henry Wong	**Date:**	Wednesday Sept. 2, 2009
Contractor:	Quantum Murray	**Project**	PWGSC: 416829
Site personnel:	Henry Wong; John Weigle-Quantum Murray		

WEATHER

Temperature (°C)	3 °C		
Wind Chill	N/A	**Wind Speed**	Light winds
Barometric Pressure	Not available	**Tendency**	
Relative Humidity	Not available	**Precipitation (mm)**	Intermittent light rain through day
Conditions	Heavy fog on and off through day		

WORK IN PROGRESS

- The scheduled Arctic Sunwest charter was held for the morning in Yellowknife because of low ceiling and low visibility at the site and at Cambridge Bay. The plane attempted the traverse following improvement of the site conditions at noon; however, was forced to turn back at 15:00 on confirmation of a sudden development of fog in the area. Because of fuel and daylight concerns the plane landed at the Lupin Mine site. A second attempt for the plane to get to site is scheduled for tomorrow.

- Some initial breakdown of the camp continued today; wooden walkways were taken apart and stored and general organization of the storage seacans was done.

- The field work for the as-built survey was continued today.

- Camp @ 15 persons.

APPENDIX C

PERMITTING, LICENSING AND REPORTING

- **NWB Landuse Permit**
- **Quarry Remits**
- **Long Term Monitoring Plan**
- **Abandonment and Restoration Plan**
- **Results of 2010 Water Sampling**
- **Water Tracking at Unnamed Pond**
- **Health and Safety Report**
- **Spill Report**
- **Wildlife Report**
- **INAC Inspection Report**

NWB Landuse Permit

SENES

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Land Administration
P.O. Box 100
IQALUIT, NU, X0A 0H0
Phone: 867-975-4275
FAX: 867-975-4286

Your file Votre référence

Our file Notre référence

April 30, 2007

Mr. Lou Spagnuolo
A/Director, Contaminated Sites
Indian & Northern Affairs Canada
P. O. Box 2200
Iqaluit, NU X0A 0H0

Dear Mr. Spagnuolo:

Re: Land Use Permit # N2007X0006
Type of Operation: Site Remediation
Location: Ida Bay & Roberts Bay Mine Sites, Kitikmeot, Nunavut, NTS 077A

Please be advised that upon review of the above file, the following term and condition was omitted:

STORAGE ON ICE	**The Permittee shall not erect camps or store material on the surface ice of streams.**

Attached is the revised Terms and Conditions, which include the above condition, that is to be annexed to and forming part of Land Use Permit N2007X0006.

Please ensure that you adhere to the operating conditions annexed to your permit. Should you have any questions regarding any conditions of this permit, please contact Jeff Holwell at (867) 975-4283 or email holwellj@inac-gc.ca.

Sincerely,

Jeff Holwell
Land Administrator Specialist
Land Administration

cc: Manager, Field Operations
RMO - Kitikmeot
NPC
NIRB

Canada

CONDITIONS ANNEXED TO AND FORMING PART OF LAND USE PERMIT NUMBER N2007X0006

31(1)(a) - Location and Area

1.	The Permittee shall not conduct this land use operation on any lands not designated in the accepted application, unless otherwise authorized in writing by the Engineer.	PLANS
2.	The Permittee shall remove from Territorial Lands, all scrap metal, discarded machinery and parts, barrels and kegs, building and building material.	REMOVE WASTE MATERIAL
3.	The Permittee shall locate all camps on gravel, sand or other durable land.	CAMP LOCATION
4.	The Permittee shall locate all lines, trails and right-of-ways to be constructed parallel to streams a minimum of 30 metres from any stream except at crossings unless otherwise authorized in writing by a Land Use Inspector.	PARALLELLING STREAMS

31(1)(b) - Time

5.	The Permittee's Field Supervisor shall contact or meet with a Land Use Inspector at the Iqaluit office of the Department of Indian Affairs and Northern Development, phone number 867-975-4296 , at least 48 hours prior to the commencement of this land use operation.	CONTACT INSPECTOR
6.	The Permittee shall advise a Land Use Inspector at least 10 days prior to the completion of the land use operation of;	REPORTS BEFORE REMOVAL

a) his plans for removal or storage of equipment and materials, and

b) when final clean-up and restoration of the lands used will be completed.

7.	The Permittee shall notify a Land Use Inspector at least 10 days prior to backfilling any sump.	BACKFILLING NOTIFICATION
8.	The Permittee shall complete all clean-up and restoration of the lands used prior to the expiry date of this permit.	CLEAN-UP
9.	The Engineer reserves the right to impose closure of any area to the Permittee in periods when dangers to natural resources are severe.	CLOSURE

31(1)(c) - Equipment

10.	The Permittee shall not use any equipment except of the type, size and number that is listed in the accepted application, unless otherwise authorized in writing by the Land Use Inspector.	ONLY APPROVED EQUIPMENT
11.	The Permittee shall use a forced-air fuel-fired incinerator to incinerate all combustible garbage and debris.	INCINERATORS
12.	The Permittee shall keep all garbage and debris in a covered metal container until disposed of.	GARBAGE CONTAINERS
13.	The Permittee shall not place dirt or debris into streams to serve as ramps for loading or unloading ships or barges, unless authorized in writing by a Land Use Inspector.	DIRT RAMPS

31(1)(d) - Methods and Techniques

14.	The Permittee shall scout proposed lines and routes to select the best location for crossing streams and avoiding terrain obstacles prior to the movement of any vehicle that exerts pressure on the ground in excess of 35 k pa.	DETOURS & CROSSINGS

15.	The Permittee shall slope the sides of excavations and embankments except in solid rock to a horizontal/vertical ratio of 2:1 unless otherwise authorized in writing by the Land Use Inspector.	EXCAVATIONS AND EMBANKMENTS
16.	The Permittee shall not erect camps or store material on the surface ice of streams.	STORAGE ON ICE

31(1)(e) - Type, Location, Capacity and Operation of Facilities

17.	The Permittee shall not locate any sump within 31 metres of the normal high water mark of any stream.	SUMPS FROM WATER
18.	The Permittee shall backfill and restore all sumps prior to the expiry date of this permit.	BACKFILL SUMPS
19.	The Permittee shall ensure that the land use area is kept clean and tidy at all times.	CLEAN WORK AREA

31(1)(f) - Control or Prevention of Flooding, Erosion and Subsidence of Land

20.	The Permittee shall remove any obstruction to natural drainage caused by any part of this land use operation.	NATURAL DRAINAGE
21.	The Permittee shall not cut any stream bank unless authorized in writing by a Land Use Inspector.	STREAM BANKS
22.	The Permittee shall install culverts or bridges as construction of the road progresses, unless otherwise authorized in writing by a Land Use Inspector.	INSTALLATION CULVERTS BRIDGES
23.	The Permittee shall not use the bed of streams for access routes except for the purpose of crossing the streams unless otherwise authorized by a Land Use Inspector.	STREAM BEDS ACCESS
24.	The Permittee shall not ford wet streams unless authorized in writing by a Land Use Inspector.	NO FORDING OF STREAMS

25.	The Permittee shall not construct interceptor or off-shoot drainage ditches unless approved in writing by the Land Use Inspector.	DITCHES
26.	The Permittee shall install erosion control structures as the land use operation progresses unless otherwise authorized by a Land Use Inspector.	EROSION CONTROL WHEN
27.	The Permittee shall insulate the ground surface beneath all structures and facilities associated with this land use operation to: a) prevent any vegetation present from being removed and, b) the ground settling and/or eroding.	INSULATE GROUND SURFACE
28.	The Permittee shall prepare the site in such a manner as to prevent rutting of the ground surface.	PREVENTION OF RUTTING
29.	The Permittee shall not move any equipment or vehicles unless the ground surface is in a state capable of fully supporting the equipment or vehicles without rutting or gouging.	VEHICLE MOVEMENT FREEZE-UP
30.	The Permittee shall suspend overland travel of equipment or vehicles if rutting occurs.	SUSPEND OVERLAND TRAVEL
31.	The Permittee shall establish vegetation on all areas stripped of vegetation during this land use operation to a minimum of seventy (70) percent ground cover unless otherwise authorized in writing by the Engineer.	REVEGETATE STRIPPED AREA

31(1)(g) - Use, Storage, Handling and Disposal of Chemical or Toxic Material

32.	The Permittee shall not use chemicals in connection with the land use operation without the prior approval of the Engineer.	APPROVAL OF CHEMICALS

33.	The Permittee shall deposit all sewage into a sump.	Waste
34.	The Permittee shall burn all garbage and debris at least daily.	GARBAGE DISPOSAL
35.	The Permittee shall remove all non-combustible garbage and debris from the land use area to a disposal site approved in writing by a Land Use Inspector.	REMOVE GARBAGE
36.	The Permittee shall dispose of all combustible waste petroleum products by incineration or removal.	WASTE PETROLEUM DISPOSAL
37.	The Permittee shall dispose of all fluids used to wash machinery and equipment in a sump unless otherwise authorized in writing by a Land Use Inspector.	RIG WASH DISPOSAL
38.	The Permittee shall report all spills immediately in accordance with instructions contained in "Spill Report" form NWT 1752(05/93). Twenty four (24) hour spill report line (867)920-8130.	REPORT CHEMICAL AND PETROLEUM SPILLS

31(1)(h) - Wildlife and Fisheries Habitat

39.	The Permittee shall not unnecessarily damage wildlife habitat in conducting this land use operation.	HABITAT DAMAGE
40.	The Permittee shall construct and maintain all structures placed in streams frequented by fish, in such a manner that will not obstruct passage of fish.	FREE FISH MOVEMENT
41.	The Permittee shall not detonate explosives within fifteen (15) metres of any body of water which is not completely frozen to the bottom.	EXPLOSIVES WATER

42.	Your operation is in an area where bears may be encountered. Proper food handling and garbage disposal procedures will lessen the likelihood of bears being attracted to your operation. Information about the latest bear detection and deterrent techniques can be obtained from the Regional Wildlife Manager (Seeglook Akkeagok) at 867-980-4250.	BEAR/MAN CONFLICT

31(1)(I) - Objects and Places of Recreational, Scenic and Ecological Value

43.	The Permittee shall not feed wildlife.	NO FEEDING WILDLIFE

31(1)(k) - Petroleum Fuel Storage

44.	The Permittee shall not place any petroleum fuel storage containers within thirty one (31) metres of the normal high water mark of any stream.	FUEL BY STREAM
45.	The Permittee shall not allow petroleum products to spread to surrounding lands or into water bodies.	FUEL CONTAINMENT
46.	The Permittee shall construct a dyke around each stationary fuel container or group of stationary fuel containers where any one container has a capacity exceeding 4,000 litres.	DYKE FUEL CONTAINERS
47.	The Permittee shall line the dyke and area enclosed by the dyke with a type of plastic film liner approved by the Engineer.	LINE DYKE
48.	The volume of the dyked area shall be 10% greater than the capacity of the largest fuel container placed therein.	CAPACITY
49.	The Permittee shall ensure that the dyke and the area enclosed by the dyke shall be impermeable to petroleum products at all times.	IMPERMEABLE DYKE

50. The Permittee shall: CHECK FOR LEAKS

a) examine all fuel storage containers for leaks a minimum of once every day.

b) repair all leaks immediately.

51. The Permittee shall mark all stationary petroleum products storage facilities with flags, posts or similar devices so that they are at all times plainly visible to local vehicle travel. MARK FUEL LOCATION

52. The Permittee shall seal all container outlets except the outlet currently in use. SEAL OUTLET

53. The Permittee shall mark all fuel containers with the Permittee's name. MARK CONTAINERS

31(1)(m) - Matters Not Inconsistent with the Regulations

54. The Permittee shall not remove any material from below the ordinary high water mark of any stream without first obtaining written permission from a Land Use Inspector. APPROVAL NEEDED

55. The Permittee shall display a copy of this permit in a conspicuous place in each campsite established to carry out this land use operation. DISPLAY PERMIT

56. The Permittee shall provide in writing to the Engineer, at least forty-eight (48) hours prior to commencement of this land use operation, the following information: IDENTIFY AGENT

a) person or persons, in charge of the field operation to whom notices, orders, and reports may be served;

b) alternates;

c) all the indirect methods for contacting the above person(s).

57. The Permittee shall conduct leach and acid generation tests on the ore and waste rock, in a manner approved by the Engineer. The leachate shall be analyzed for content of heavy metals and all test results shall be submitted to the Engineer. LEACHATE TEST

P.O. BOX 119
GJOA HAVEN, NU X0B 1J0
TEL: (867) 360-6338
FAX: (867) 360-6369

ᓄᓇᕗᑦ ᐃᒪᓕᕆᔨᒃᑯᑦ ᑲᑎᒪᔨᖏᑦ
NUNAVUT WATER BOARD
NUNAVUT IMALIRIYIN KATIMAYINGI
OFFICE DES EAUX DU NUNAVUT

File No.: **1BR-ROB0813**

August 8, 2008

Natalie Plato, Director Contaminated Sites Program
Indian and Northern Affairs Canada
P.O. Box 2200
Iqaluit, NU
X0Z 0H0
platon@inac-ainc.gc.ca

RE: NWB Licence No. 1BR-ROB0813

Dear Ms. Plato:

Please find attached Licence No. **1BR-ROB0813** issued to Indian and Northern Affairs Canada (INAC), Contaminated Sites Program, by the Nunavut Water Board (NWB) pursuant to its authority under Article 13 of the *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*. The terms and conditions of the attached Licence related to water use and waste disposal are an integral part of this approval. A summary of submissions required under various conditions of the Licence is also enclosed with this letter.

If the Licensee contemplates the renewal of this Licence, it is the responsibility of the Licensee to apply to the NWB for its renewal. The past performance of the Licensee, new documentation and information, and issues raised during a public hearing, if the NWB is required to hold one, will be used to determine the terms and conditions of the Licence renewal. Note that if the Licence expires before the NWB issues a new one, then water use and waste disposal must cease, or the Licensee will be in contravention of the *Nunavut Land Claims Agreement* (NLCA) and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* (NWNSRTA). However, the expiry or cancellation of a licence does not relieve the holder from any obligations imposed by the licence. The NWB recommends that an application for the renewal of this Licence be filed at least three months prior to the Licence expiry date.

If the Licensee contemplates or requires an amendment to this licence, the NWB may decide, in the public interest, to hold a public hearing. The Licensee should submit applications for amendment as soon as possible to give the NWB sufficient time to go through the amendment process. The process and timing may vary depending on the scope of the amendment, however a minimum of thirty (30) days is required from time of acceptance by the NWB. It is the responsibility of the Licensee to ensure that all application materials have been received and acknowledged by the Manager of Licensing.

The NWB strongly recommends that the Licensee consult the comments received from interested persons on issues identified. This information is attached for your consideration.

Sincerely,

Thomas Kabloona
A/Chief Executive Officer

TK/tla/kt

Enclosure: Licence No. **1BR-ROB0813**
Comments NIRB, KIA, GN, INAC and EC
Summary of Required Submissions

cc: Kitikmeot Distribution List

Table of Required Submissions

No	Document	Due Date	Reference to Licence	Board Approval Required
1	Final Design and Construction Drawings for remediation of mine openings	October 7, 2008	Part E Item 3	Yes
2	Final Design and Construction Drawings for remediation of Tailings Pond	October 7, 2008	Part E Item 3	Yes
3	Final Design and Construction Drawings for remediation of the existing Landfill	October 7, 2008	Part E Item 3	Yes
4	Final Design and Construction Drawings for the construction of the Solid Waste Disposal Facility	October 7, 2008	Part E Item 3	Yes
5	Tailings Freezeback Report	October 7, 2008	Part E Item 12	Yes
6	Tailings Dewatering Plan	October 7, 2008	Part E Item 13	Yes
7	Quarry Management Plan	Thirty (30) days prior to quarrying	Part E Item 11	Yes
8	Solid Waste Disposal Facility Management Plan	October 7, 2008	Part D Item 10	Yes
9	Operations and Maintenance Plan for Sewage Disposal Facility	September 7, 2008	Part D Item 1	Yes
10	Spill Contingency Plan	September 7, 2008	Part I Item 1	Yes
11	Monitoring Plan	September 7, 2008	Part K Item 1	Yes
12	Quality Assurance/ Quality Control Plan	October 7, 2008	Part K Item 13	Analyst approval
13	Abandonment and Restoration Plan	November 6, 2008	Part J Item 1	Yes
14	As-Built drawings of the Mine Opening remediation, Solid Waste Disposal Facility, and the existing Landfill remediation	within ninety (90) days following the completion of remediation	Part E Item 15	No
15	Close-Out Report	within ninety (90) days following the completion of remediation	Part J Item 2	No

TABLE OF CONTENTS

DECISION **1**

I. INTRODUCTION **3**

II. PRODECURAL HISTORY **4**

III. GENERAL CONSIDERATIONS **4**

A TERM OF LICENCE 4
B REMEDIATION 4
Remediation Action Plan *4*
Mine Opening Remediation *5*
Tailings Pond Remediation *5*
Quarrying and Borrowing *6*
C WASTE MANAGEMENT 7
Tailings Pond Discharge Criteria *7*
Waste Rock *7*
Landfill *8*
Incineration *8*
Sewage Lagoon *9*
D SPILL CONTINGENCY PLAN 9
E MONITORING PROGRAM 9
F ABANDONMENT AND RESTORATION PLAN 10

LICENCE NO. 1BR-ROB0813 ..... **11**

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT **12**

1. SCOPE 12
2. DEFINITIONS 12
3. ENFORCEMENT 14

PART B: GENERAL CONDITIONS **15**

PART C: CONDITIONS APPLYING TO WATER USE **17**

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL **17**

PART E: CONDITIONS APPLYING TO THE UNDERTAKING **19**

PART F: CONDITIONS APPLYING TO CAMPS AND ACCESS INFRASTRUCTURES **21**

PART G: CONDITIONS APPLYING TO DRILLING OPERATIONS **21**

PART H: CONDITIONS APPLYING TO MODIFICATIONS **22**

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING **23**

PART J: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR TEMPORARY CLOSING **23**

PART K: CONDITIONS APPLYING TO THE MONITORING PROGRAM **24**

DECISION

LICENCE NUMBER: 1BR-ROB0813

This is the decision of the Nunavut Water Board (NWB) with respect to an application for a new a Water Licence dated November 30, 2006 made by:

INDIAN AND NORTHERN AFFAIRS CANADA
CONTAMINATED SITES PROGRAM

to allow for the use of water, disposal of waste and watercourse crossings during remediation activities at the former Robert's Bay and Ida Bay Mine sites located within the Kitikmeot Region, Nunavut generally located at the geographical coordinates as follows:

Latitude: 68°10'45" N Longitude: 106° 33' 29" W

Reclamation activities as stated by the Applicant in the Remediation Plan include:

- mobilization of equipment, material and personnel to site;
- enhancement of site access routes;
- camp set-up and operation;
- building and structure demolition;
- debris consolidation and disposal
- construction of a solid waste disposal facility;
- burying of non-hazardous infrastructure and mine site waste onsite;
- draining and remediation of the tailings pond;
- removal of waste rock from above the high tide level and use of waste rock for cover, erosion control, and backfill;
- capping of tailings;
- remediation of existing mine site landfill;
- hazardous material removal, handling and transport off site;
- removal of contaminated soils from site;
- remediation of mine openings
- quarrying of gravel and overburden materials
- temporary storage on site for hazardous materials, equipment and fuels;
- site grading;
- demobilization of equipment, materials/wastes and personnel; and
- site monitoring.

DECISION

After having been satisfied that the application was for a location within an area in which there is no valid Land Use Plan and having undergone a Screening by the Nunavut Impact Review Board (NIRB) in accordance with Article 12 Part 4 of the *Nunavut Land Claims Agreement* (NLCA)[1], the NWB decided that the application could proceed through the regulatory process. In accordance with S.55.1 of the *Nunavut Waters and Nunavut Surface Rights Tribunal Act (NWNSRTA)* and Article 13 of the *NLCA*,

[1] Screening Decision for Indian and Northern Affairs Robert's Bay and Ida Bay Site Remediation Project Proposal, Nunavut Impact Review Board, March 20, 2007

public notice of the application was given and interested persons were invited to make representations to the NWB.

After reviewing the submission of the Applicant and considering the representations made by interested persons, the NWB, having given due regard to the facts and circumstances, the merits of the submissions made to it and to the purpose, scope and intent of the *NLCA* and of the *NWNSRTA*, waived the requirement to hold a public hearing, and determined that:

Licence Number 1BR-ROB0813 be issued subject to the terms and conditions contained therein. (Motion #: 2008-05-L15, dated August 4, 2008)

SIGNED this 8th day of August, 2008 at Gjoa Haven, NU.

Thomas Kabloona
A/Chief Executive Officer

TK/kt

I. INTRODUCTION

The Government of Canada has implemented the Federal Contaminated Sites Action Plan (FCSAP) to clean up federally owned contaminated sites which pose a risk to human health and/or the environment. The Department of Indian Affairs and Northern Development (DIAND) received funding approval for the investigation and remediation of the abandoned Roberts Bay Silver Mine and Ida Bay Silver Deposit in Nunavut.

The Roberts Bay Mine is located on crown land approximately 115 km southwest of the Hamlet of Cambridge Bay. The Ida Bay Silver Deposit is located approximately 7 km north of the Roberts Bay Silver Mine, along the shore of Melville Sound. Access to the sites is by rotary wing aircraft, fixed wing aircraft equipped with floats or by barge.

The Roberts Mining Company first staked the area in 1964 and the silver deposit was discovered in 1965. The following year gold and silver deposits were staked at Ida Bay. Exploration continued in the area from 1967 until 1972 by the Hope Bay Mining Company (later called Hope Bay Mines Limited). Mining was initiated in 1973 via declines constructed at both Ida Bay and Roberts Bay. In 1974 Hope Bay Mines entered a joint venture with Van silver Explorations and Recko Explorations and the Roberts Bay Mine was upgraded and a small mill was constructed. Operations ceased in 1975. Exploration continued in 1980's and 1990's and in 1997 the Roberts Mining Lease was surrendered. The area was re-staked as the ORO5 claim in 1998.

All site assessment activities required to develop a plan for the remediation of Roberts Bay and Ida Bay mine site have been completed. The two year implementation of the remediation plan was scheduled to begin in 2007, with mobilization to site during the summer of 2007 and demobilization from site towards the end of the summer 2009. Site remediation activities will include:

- mobilization of equipment, material and personnel to site;
- enhancement of site access routes;
- camp set-up and operation;
- building and structure demolition;
- debris consolidation and disposal
- construction of a solid waste disposal facility;
- burying of non-hazardous infrastructure and mine site waste onsite;
- draining and remediation of the tailings pond;
- removal of waste rock from above the high tide level and use of waste rock for cover, erosion control, and backfill;
- capping of tailings;
- remediation of existing mine site landfill;
- hazardous material removal, handling and transport off site;
- removal of contaminated soils from site;
- remediation of mine openings
- quarrying of gravel and overburden materials
- temporary storage on site for hazardous materials, equipment and fuels;
- site grading;

- demobilization of equipment, materials/wastes and personnel; and
- site monitoring.

The site remediation activities will be followed by a long term post-remediation monitoring was scheduled to start in 2009.

II. PRODECURAL HISTORY

An Application was filed by Indian and Northern Affairs Canada (INAC) Contaminated Sites Program on October 12, 2006 for water use and waste disposal activities associated with the proposed remediation of the former Roberts Bay and Ida Mine sites. In addition to the Application documents of November 30, 2006, additional information was submitted on February 2007 and October 2007.

On March 20, 2007, the Nunavut Impact Review Board (NIRB) completed its screening of the Application pursuant to Article 12 of the NLCA.

After the NWB provided notice of the Application to the Kitikmeot Distribution List on April 25, 2007, comments were received from Indian and Northern Affairs Canada (INAC) Water Resources Division, Environment Canada (EC), the Government of Nunavut Department of Environment (GN-DOE), and the Kitikmeot Inuit Association by June 1, 2007.

On June 30, 2008, following review of the October 12, 2006 water licence application and the October 30, 2007 additional information submitted to the Board from the INAC Contaminated Sites Directorate, INAC Water Resources Division submitted additional comments to the Board.

III. GENERAL CONSIDERATIONS

A Term of Licence

In accordance with the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* s. 45, the NWB may issue a licence for a term not exceeding twenty-five years. While the Applicant has requested a term of three (3) years, the NWB believes that a term of approximately five (5) years is appropriate. The licence term was supported by INAC Water Resources division in its June 30, 2008 comments, and will allow the Licensee to properly carry out the terms and conditions of the licence and will ensure that sufficient time is given to permit the Licensee to develop, submit and implement the plans required under the licence to the satisfaction of the NWB.

B Remediation

Remediation Action Plan
The Applicant submitted the Remediation Plan entitled "*Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan*" prepared by AMEC Earth & Environmental, dated January 2007

as part of its Water Licence Application. This Plan outlines the key issues, remediation alternatives and preferred options for the remediation of site components.

INAC in its June 30, 2008 comments recommended that the Contaminated Sites Directorate be required to clearly indicate to the NWB that the recommendations of its consultants are the same as the licence terms and conditions.

The Board, having considered the submission of the Applicant and the comments received from INAC, requires as a condition in Part E Item 1 of the Licence that the Licensee implement the preferred options identified in the Remediation Plan entitled "*Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan*" prepared by AMEC Earth & Environmental, dated January 2007.

Mine Opening Remediation

There are two (2) mine openings identified at the Roberts Bay mine site. One adit referred to as Adit #1 located to the northeast of the tailings pond and a second adit referred to as Adit #2 located to the east of Adit #1. A vent raise also exists to the north of Adit #2.

There is one (1) adit at the Ida Bay site located approximately 15m from the ocean shoreline and a vent raise located to the west of the adit.

The preferred remediation option for the adits at Roberts Bay is to infill the adits with waste rock where feasible, drill and blast to drop the top of the adit down upon the waste rock, infill the depression with clean waste rock and to reshape the area to blend with the surrounding environment. It is also preferable for an engineered pre-cast concrete cap to be placed over top of the current concrete capped vent raise at Roberts Bay to ensure that the opening is permanently secured in accordance with current mine safety regulations.

The preferred remediation option for the adit and vent raise at Ida Bay is to infill the adit and vent raise with waste rock, blast the roof of the adit to collapse the roof on the rock and then backfill the depression with waste rock.

INAC, in its May 25, 2007 comments, recommended that the Applicant clearly state how it would reclaim mine openings to instill confidence that the precipitation runoff will not enter and collect within the underground mine workings which can result in the subsurface movement of water, permafrost degradation, and contamination of freshwater resources.

The Board, having considered the submission of the Applicant and the comments received from INAC, requires as a condition of Part E Item 3 of the Licence that the Licensee submit to the Board for approval final design and construction drawings for remediation of the mine openings sixty (60) days following the issuance of the Licence.

Tailings Pond Remediation

During the last year of operation, some ore at the Roberts Bay mine site was subjected to flotation processing with the concentrate shipped offsite for further processing. Tailings

produced during the process were deposited in a tailings pond approximately forty (40) m in diameter with a waste rock berm.

The preferred remediation option is for any standing water within the tailings pond to be drained by pumping the water into the underground mine adit so that it discharges at least 2 m below the current flooded surface. The water in the tailings pond has been found to have metal concentrations above the freshwater aquatic life guidelines but less than the Metal Mining Effluent Regulation (MMER) limits. Following the preferred remediation option: (1) the existing berms around the tailings pond would be enhanced and re-graded to provide stable long term structures; (2) non-hazardous demolition debris from both the Roberts Bay and Ida Bay sites would be buried within the tailings pond and then capped with clean waste rock; (3) tailings and waste rock fines from other areas around the site would be excavated and placed above the existing tailings; and (4) the entire surface of the tailings pond would be covered with no less than 2 m of waste rock.

INAC, in its May 25, 2007 comments, recommended that the Applicant provide the NWB with tailings impoundment construction design plans, signed by an engineer registered in Nunavut, along with data to support the likelihood of freezeback permafrost conditions within the tailings. INAC further recommended that the Applicant should provide an operations and maintenance plan for the tailings pond remediation that describes in more detail how water will be transferred to the underground mine adit.

The Board having considered the submission of the Applicant and the comments received from INAC, requires as a condition in Part E Item 3 of the Licence, that the Licensee submit to the Board for approval, final design and construction drawings for the remediation of the Tailings Pond within sixty (60) days of the issuance of the Licence. The Board further requires as conditions in Part E Items 12 and 13 of the Licence that the Licensee submit to the Board for approval a Tailings Freezeback Report and a Tailings Pond Dewatering Plan within sixty (60) days of licence issuance.

Quarrying and Borrowing

Six borrow areas were identified at the Roberts Bay Site. Borrow material may be used during remediation activities.

INAC, in its May 25, 2007 comments, expressed concern regarding the acid generating and metal leaching potential of the borrow locations. EC, in its June 1, 2007 comments recommended that if quarrying activities are carried out, an undisturbed buffer zone of at least 100 meters be maintained between any proposed quarry operation and the normal high water mark of any water body

The Board having considered the submission of the Applicant and the comments received from INAC and EC, requires as a condition in Part E Item 11 of the Licence that should the Applicant opt to use borrow material or conduct quarrying activities, the Licensee shall submit to the Board thirty (30) days prior to any quarrying activity, a Quarry Management Plan that addresses the concerns expressed by INAC and EC.

C Waste Management

Tailings Pond Discharge Criteria

The water in the tailings pond has been found to have metal concentrations above the freshwater aquatic life guidelines but less than the Metal Mining Effluent Regulation (MMER) limits. An Environmental Site Assessment (ESA) conducted by Rescan determined that there was potential for arsenic to leach from the tailings pond and concluded that additional studies were required to determine whether there would be any future environmental impacts from the tailings impoundment.

EC noted in its June 1, 2007 comments that any discharges from the tailings pond must be protective of the receiving environment and the Applicant should carry out adequate testing to ensure that if tailings water is pumped underground, arsenic levels will not be harmful to the receiving environment. EC further noted in its submission that meeting the requirements of the Fisheries Act is mandatory, irrespective of any other regulatory or permitting system.

As described in section 4.2 of the "*Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan*" prepared by AMEC Earth & Environmental, dated January 2007, the Applicant conducted environmental assessments at the site using Canadian Council of Ministers of the Environment (CCME) Environmental Quality Guidelines (EQG) (1999 updated to 2005). In addition, the Applicant retained UMA to conduct a Human Health and Ecological Risk Assessment (HHERA) which determined site specific remedial objectives (SSRO). The Applicant summarized the relevant assessment guidelines in the above mentioned Remediation Plan identifying the SSROs developed by the HHERA and these guidelines were used to assess completion of the remedial plan with respect to impacted soil and water.

The Board, having considered the submission of the Applicant and the comments received from INAC and EC, requires as a condition of Part D Item 4 and Table 1 of Appendix A of the Licence, that any discharge from the tailings pond not exceed the guidelines developed by the Applicant in its Remediation Plan, Appendix B.

Waste Rock

A variety of waste rock piles remain at the Roberts Bay Mine site, and four main piles of waste rock remain at the Ida Bay mine site. Studies were conducted to characterize the waste rock to determine whether remedial efforts were required, where efforts should be expended and to obtain data to develop the remedial plan. The main conclusions and recommendations of these reports were that waste rock at Ida Bay could be used to backfill mine openings and that waste rock at Roberts Bay could be used to cover and reshape the landfill site, reinforce the tailings pond berm, and backfill mine openings.

EC noted in its June 1, 2007 comments that the site assessments for Roberts Bay indicated the potential for some of the waste rock to be acid generating and recommended that only waste rock that is considered non-acid generating be used in remediation works.

The Board, having considered the submission of the Applicant and the comments received from EC, requires as a condition of Part J Item 2 of the Licence that the Licensee submit a close-out

report containing results of additional ARD and ML sampling and testing on representative waste rock material placed on surface, to confirm that waste rock used during remediation is non-acid generating and non-metal leaching

Landfill
The preferred remediation option for non-hazardous demolition waste is the placement of this waste within the tailings pond footprint and covering this landfill with a minimum thickness of 2 m of non-acid generating waste rock. The preferred remediation option for the existing landfill containing domestic waste is to leave the waste in place and simply provide a waste rock cover to isolate the waste.

INAC, in its May 25, 2007 comments, expressed concern regarding the management of runoff at landfill sites critical when encapsulating waste material so as to minimize leachate production.

The Board, having considered the submission of the Applicant and the comments received from INAC, requires as a condition in Part E Item 3 of the Licence that the Licensee submit to the Board for approval, final design and construction drawings for the remediation of the existing Landfill and construction of the non-hazardous Solid Waste Disposal Facility, sixty (60) days following the issuance of the Licence. Furthermore, the Board requires as a condition in Part D Item 10 of the Licence that the Licensee submit to the Board for approval, sixty (60) days following the issuance of the Licence, a Solid Waste Disposal Facility Management Plan that includes detailed plans for the management of surface runoff.

Incineration
The preferred remediation option for non-hazardous waste involves obtaining the approvals to incinerate wood at the site to reduce the volume of waste requiring transport. The preferred remediation option for hazardous waste involves the mixing and incineration of petroleum products on site to reduce the volume of hazardous waste requiring transport. Combustible solid non-hazardous waste from the operation of the camp will also be incinerated on site.

EC, in its June 1, 2007 comments, expressed concern regarding the burning of waste products that release contaminants to the air which can eventually be deposited on land and water. EC recommended that burning only be considered after all other alternatives for waste disposal had been explored. EC further recommended that the Applicant review incineration options available and provide justification for the selected device to the regulatory authority. Finally EC recommended that should burning be the only alternative available, that the use of appropriate waste incineration technology should be combined with a comprehensive waste management strategy.

The GN, in its May 1, 2007 comments further recommended the use of a dual chamber, forced air incinerator and that emissions from the incinerator should be demonstrated to comply with Canada Wide Standards for dioxins and furans as well as mercury emissions.

The Board also notes condition #22 in the NIRB screening determination directing the proponent to incinerate all waste daily, and remove the ash from incineration activities and non-

combustible wastes from the project site to an approved facility for disposal. In addition, NIRB's condition 26 directs the proponent to ensure that all hazardous materials, including waste oil, are removed from site.

Sewage Lagoon
Two independently operated temporary lagoons will be installed having an individual capacity for forty five (45) days of wastewater storage or one half the duration of the construction season, whichever is less.

INAC, in its May 25, 2007 comments, made recommendations to the Board for the provision of engineered sewage lagoon design plans, an operation and maintenance plan, sampling protocols and abandonment and restoration plans as well as the actual location of the lagoons.

The Board, having considered the submission of the Applicant and the comments received from INAC requires as a condition in Part D Item 1 of the Licence that the Licensee submit to the Board an Operations and Maintenance Manual prepared in accordance with the "*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*".

D Spill Contingency Plan

The Preliminary Contingency Plan was submitted with the application. However, INAC in both is May 25, 2007 and June 30, 2008 comments recommended that an up-to-date spill contingency plan should be provided to the Board prior to the commencement of project activities and that this plan should reference hazardous material storage locations, hazardous materials management practices, on-site personnel contact information, the Nunavut Spill Form and relevant Material Safety Data Sheets (MSDS). EC, in its June 1, 2007 submission also made a number of comments regarding the handling and storage of fuels and hazardous materials and the GN, in its May 1, 2007 comments recommended that the DOE regulations and guidelines for spill contingency and reporting be followed to ensure the plan is adequately developed.

The Board, having considered the submission of the Applicant and the comments received from INAC, EC and GN requires as a condition in Part I Item 1 of the Licence, that the Licensee submit to the Board thirty (30) days following the issuance of the Licence, a site specific Spill Contingency Plan developed in accordance with the Government of Nunavut *Spill Contingency Planning and Reporting Regulations* and the document entitled "*Contingency Planning and Reporting in Nunavut: a Guide to the New Regulations*".

E Monitoring Program

The Board notes and accepts INAC's May 25, 2007 comments recommending that a project specific monitoring program be provided.

To measure the performance of reclamation measures and to assess the mitigation of potential impacts to the environment associated with the appurtenant undertaking over the short and long

term, the Board requires under Part K of the Licence, that the Licensee implement a site specific Monitoring Program. To accomplish these objectives, the Board requires, under Part K Item 1, that the Licensee submit a project specific monitoring plan that includes the details recommended by INAC as well as a Quality Assurance/ Quality Control Plan approved by an Analyst under Part K, Item 13.

F Abandonment and Restoration Plan

To ensure that all facilities are reclaimed in an appropriate manner upon abandonment, the NWB requires all Licensees to prepare and submit an Abandonment and Restoration Plan. The activities proposed under this Licence are for the remediation of the site. The document entitled "*Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan*" prepared by AMEC Earth & Environmental, dated January 2007, outlines the key issues, remediation alternatives and preferred options for the remediation of site components.

INAC, in its May 25, 2007 submission to the Board recommended that an Abandonment and Restoration Plan be submitted for the project. Following review of additional information submitted by the Applicant, INAC in its June 30, 2008 comments recommended that the above mentioned plan be considered as the Roberts Bay Remediation and Closure Plan.

The Board accepts INAC's recommendation and as explained in part A of this Decision requires as a condition in Part E Item 1 of the Licence, that the Licensee implement the preferred options identified in the Remediation Plan entitled "*Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan*" prepared by AMEC Earth & Environmental, dated January 2007.

In addition to the Remediation Plan, the Board requires under Part J Item 1 an Abandonment and Restoration Plan be submitted within ninety (90) days of Licence issuance. This Plan shall address contractor demobilization and site remediation of the camp and access infrastructure constructed to facilitate the remediation of the mine site.

Other conditions for abandonment and restoration have been included under Part J of this Water Licence.

LICENCE NO. 1BR-ROB0813

Pursuant to the *Nunavut Waters and Nunavut Surface Rights Tribunal Act* and the *Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, the Nunavut Water Board, hereinafter referred to as the Board, hereby grants to

INDIAN AND NORTHERN AFFAIRS CANADA
CONTAMINATED SITES PROGRAM

(Licensee)

of

P.O. BOX 2200, IQALUIT, NU X0A 0H0

(Mailing Address)

hereinafter called the Licensee, the right to alter, divert or otherwise use water and/or dispose of waste for a period subject to restrictions and conditions contained within this Licence:

Licence Number **1BR-ROB0813**

Water Management Area **NUNAVUT 07**

Location **ROBERT'S BAY AND IDA BAY MINE SITE REMEDIATION PROJECT**

Purpose **WATER USE AND WASTE DISPOSAL**

Classification of Undertaking **INDUSTRIAL – TYPE "B"**

Quantity of Water Not to Exceed **FIVE (5) CUBIC METRES PER DAY**

Date of Licence **AUGUST 8, 2008**

Expiry Date of Licence **AUGUST 30, 2013**

Dated this 8th day of August, 2008 at Gjoa Haven, NU.

Thomas Kabloona
A/Chief Executive Officer

PART A: SCOPE, DEFINITIONS AND ENFORCEMENT

1. **Scope**

This Licence allows for the use of water and the disposal of waste, for an undertaking classified as Industrial as per Schedule II of the *Regulations* at the Robert's Bay and Ida Bay Mine Site Remediation Project, located approximately 115 km southwest of Cambridge Bay within the Kitikmeot Region, Nunavut, within the general latitude 68°10'45" N and general longitude 106° 33' 29" W

a. This Licence is issued subject to the conditions contained herein with respect to the taking of water and the depositing of waste of any type in any waters or in any place under any conditions where such waste or any other waste that results from the deposits of such waste may enter any waters. Whenever new Regulations are made or existing *Regulations* are amended by the Governor in Council under the *Nunavut Waters and Nunavut Surface Rights Tribunal Act*, or other statutes imposing more stringent conditions relating to the quantity or type of waste that may be so deposited or under which any such waste may be so deposited, this Licence shall be deemed, upon promulgation of such Regulations, to be subject to such requirements; and

b. Compliance with the terms and conditions of this Licence does not absolve the Licensee from responsibility for compliance with the requirements of all applicable Federal, Territorial and Municipal legislation.

2. **Definitions**

"Acid Rock Drainage (ARD)" means the production of acidic leachate, seepage or drainage from tailings, waste rock, borrow material or construction rock that can lead to the release of metals to groundwater or surface water during the life of the Project and beyond closure;

"**Act**" means the *Nunavut Waters and Nunavut Surface Rights Tribunal Act;*

"**Addendum**" means the supplemental text that is added to a full plan or report usually included at the end of the document and is not intended to require a full resubmission of the revised report.

"**Amendment**" means a change to original terms and conditions of this Licence requiring correction, addition or deletion of specific terms and conditions of the Licence; modifications inconsistent with the terms of the set terms and conditions of the Licence;

''**Appurtenant Undertaking**'' means an undertaking in relation to which a use of water or a deposit of waste is permitted by a licence issued by the Board;

"Board" means the Nunavut Water Board established under the *Nunavut Land Claims Agreement* and the *Nunavut Waters and Nunavut Surface Rights Tribunal Act;*

"Contact Water" means any water that may be physically or chemically affected by project activities;

"Discharge" means the release of any water or waste to the receiving environment;

"Effluent" means treated or untreated liquid waste material that is discharged into the environment from a structure such as a settling pond or following a treatment process;

"Engineer" means a professional engineer registered to practice in Nunavut in accordance with the Engineering, Geological and Geophysical Act (Nunavut) S.N.W.T. 1998, c.38, s.5;

"Greywater" means all liquid wastes from showers, baths, sinks, kitchens and domestic washing facilities, but does not include toilet wastes;

"Inspector" means an Inspector designated by the Minister under Section 85 (1) of the *Act*;

"Landfill" means the existing on site surface landfill containing domestic waste as described in the Applicant's Water Licence Application dated October 12, 2006.

"Licensee" means the holder of this Licence;

"Mine Openings" means the existing on site adits and vent raises as shown in Figures 4 and 5 of the Applicant's Water Licence Application entitled "*Roberts May Mine Site – Site Plan*" and "*Ida Bay Mine Site – Site Plan*" both dated January 2007 and prepared by AMEC;

"Modification" means an alteration to a physical work that introduces a new structure or eliminates an existing structure and does not alter the purpose or function of the work, but does not include an expansion;

"Monitoring Program" means a program established to collect data on surface water and groundwater quality as well as ground temperature to assess impacts to the environment of an appurtenant undertaking;

"Nunavut Land Claims Agreement" (NLCA) means the *"Agreement Between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in right of Canada*", including its preamble and schedules, and any amendments to that agreement made pursuant to it;

"Regulations" means the *Northwest Territories Water Regulations sor/93-303 8th June, 1993,* omitting Section 5, Water Use or Waste Deposit Without a Licence;

"Sewage" means all toilet wastes and greywater;

"Sewage Disposal Facility" comprises the area and engineered structures designed to contain and treat sewage as described in the Applicants Water Licence Application dated October 12, 2006;

"Solid Waste" means non-hazardous waste;

"Solid Waste Disposal Facility" means the facility constructed under this Licence for the remediation of non-hazardous waste as described in the Applicant's Water Licence Application dated October 12, 2006.

"Spill Contingency Plan" means a Plan developed to deal with unforeseen petroleum and hazardous materials events that may occur during the operations conducted under the Licence;

"Sump" means an excavation in impermeable soil for the purpose of catching or storing water or waste;

"Tailings Pond" means the existing on site facility used to contain tailings as shown in Figure 4 of the Applicant's Water Licence Application entitled "*Roberts May Mine Site – Site Plan*" dated January 2007 and prepared by AMEC.

"Toilet Wastes" means all human excreta and associated products, but does not include greywater;

"Waste" means, as defined in S.4 of the *Act*, any substance that, by itself or in combination with other substances found in water, would have the effect of altering the quality of any water to which the substance is added to an extent that is detrimental to its use by people or by any animal, fish or plant, or any water that would have that effect because of the quantity or concentration of the substances contained in it or because it has been treated or changed, by heat or other means;

"Waste Disposal Facility" means all facilities designated for the disposal of waste, and includes the Sewage Disposal Facility, Solid Waste Disposal Facility, Incinerator and Landfill;

"Water Supply Facility" comprises the un-named pond adjacent to the camp and Roberts Lake and associated infrastructure designed to collect and supply water;

3. **Enforcement**

a. Failure to comply with this Licence will be a violation of the *Act*, subjecting the Licensee to the enforcement measures and the penalties provided for in the *Act*;

b. All inspection and enforcement services regarding this Licence will be provided by Inspectors appointed under the *Act*; and

c. For the purpose of enforcing this Licence and with respect to the use of water and deposit or discharge of waste by the Licensee, Inspectors appointed under the *Act,* hold all powers, privileges and protections that are conferred upon them by the *Act* or by other applicable law.

PART B: GENERAL CONDITIONS

1. The Licensee shall file an Annual Report on the appurtenant undertaking with the Board no later than March 31st of the year following the calendar year being reported which shall contain the following information:

   a. The monthly and annual quantities (in cubic meters) of fresh water obtained from all sources;
   b. The monthly and annual quantities (in cubic meters) of Sewage generated;
   c. The monthly and annual quantities (in cubic meters) of material deposited in Waste Disposal Facilities;
   d. A summary of all waste backhauled for disposal at approved facilities under Part D Item 19;
   e. A summary of any construction work, modifications, and major maintenance work (including as-built drawings) carried out on the Water Supply Facilties, Solid Waste Disposal Facilities, and Sewage Disposal Facility, including all associated structures;
   f. Tabular summaries for all data collected during the Monitoring Program;
   g. An analysis of data collected during the Monitoring Program and a brief description of any future studies planned by the Licensee;
   h. A summary of remediation work undertaken during the year and an outline of work anticipated for the following year;
   i. A summary of any studies requested by the Board that relate to waste disposal, water use or reclamation, and a brief description of any future studies planned;
   j. A list of unauthorized discharges and a summary of follow-up actions taken;
   k. Any revisions to the Remediation Plan referred to under Part E Item 1;
   l. Any revisions to the Spill Contingency Plan submitted under Part I Item 1; the Tailings Dewatering Plan submitted under Part E Item 13; the Sewage Operations and Maintenance Plan submitted under Part D Item 1; the Solid Waste Disposal Facility Management Plan submitted under Part D Item 10; or the Quarry Management Plan submitted under Part E Item 11;
   m. A public consultation/ participation report describing consultation with local organizations and the residents of nearby communities;
   n. A brief summary of work done to address concerns or deficiencies listed in the inspection reports and/or compliance reports prepared by the Inspector;
   o. An executive summary in English, Inuktitut, and Inuinnaqtun of all Plans,

Reports, or Studies conducted under this Licence; and

p. Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

2. The Licensee shall notify the NWB of any changes in operating plans or conditions associated with this project at least thirty (30) days prior to any such change.

3. The Licensee shall install flow meters or other such devices, or implement suitable methods required for the measuring of water volumes as required under Part K, Item 2.

4. The Licensee shall, for all Plans submitted under this Licence, include a proposed timetable for implementation. Plans submitted, cannot be undertaken without subsequent written Board approval and direction. The Board may alter or modify a Plan if necessary to achieve the legislative objectives and will notify the Licensee in writing of acceptance, rejection or alteration of the Plan.

5. The Licensee shall, for all Plans submitted under this Licence, implement the Plan as approved by the Board in writing.

6. Every Plan to be carried out pursuant to the terms and conditions of this Licence shall become a part of this Licence, and any additional terms and conditions imposed upon approval of a Plan by the Board become part of this Licence. All terms and conditions of the Licence should be contemplated in the development of a Plan where appropriate.

7. The Licensee shall, within sixty (60) days of issuance of this Licence, post signs in the appropriate areas, identifying the locations of Water Supply Facilities, Solid Waste Disposal Facilities, Sewage Disposal Facilities, and the Monitoring Program stations. All posting shall be in the Official Languages of Nunavut.

8. A copy of this Licence shall be maintained at the site of operations at all times. Any communication with respect to this Licence shall be made in writing to the attention of:

(a) Manager of Licensing:
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0
Telephone: (867) 360-6338
Fax: (867) 360-6369
Email: licensing@nunavutwaterboard.org

(b) Inspector Contact:
Water Resources Officer, INAC
Nunavut District, Nunavut Region
P.O. Box 100
Iqaluit, NU X0A 0H0
Telephone: (867) 975-4295

Fax: (867) 979-6445

(c) Analyst Contact:
Taiga Laboratories
Department of Indian and Northern Affairs
4601 – 52 Avenue, P.O. Box 1500
Yellowknife, NT X1A 2R3
Telephone: (867) 669-2781
Fax: (867) 669-2718

9. The Licensee shall submit one paper copy and one electronic copy of all reports, studies, and plans to the Board. Reports or studies submitted to the Board by the Licensee shall include a detailed executive summary in Inuktitut and Inuinnaqtun.

10. The Licensee shall confirm that any document(s) or correspondence submitted by the Licensee to the Board are received and acknowledged by the Manager of Licensing.

11. This Licence is not assignable except as provided in Section 44 of the *Act*.

PART C: CONDITIONS APPLYING TO WATER USE

1. The Licensee shall obtain all water for domestic camp use from the un-named pond adjacent to the camp and from Roberts Lake. The volume of water for the purposes of this Licence shall not exceed five (5) cubic meters per day.

2. Streams cannot be used as a water source unless authorized and approved by the Board in writing.

3. If the Licensee requires water in sufficient volume that the source water body may be drawn down the Licensee shall, at least thirty (30) days prior to commencement of use of water, submit to the Board for approval in writing, the following: volume required, hydrological overview of the water body, details of impacts, and proposed mitigation measures.

4. The Licensee shall equip all water intake hoses with a screen of an appropriate mesh size to ensure that fish are not entrained and shall withdraw water at a rate such that fish do not become impinged on the screen.

PART D: CONDITIONS APPLYING TO WASTE DISPOSAL

1. The Licensee shall submit to the Board for approval, thirty (30) days following licence issuance, an Operations and Maintenance Manual prepared in accordance with the "*Guidelines for the Preparation of an Operation and Maintenance Manual for Sewage and Solid Waste Disposal Facilities in the Northwest Territories; 1996*". This Manual

shall include:

- Details of the Sewage Disposal Facility including design and construction plans signed and stamped by a Professional Engineer registered in Nunavut;
- Sampling protocols;
- Discharge locations; and
- Abandonment and restoration plans.

2. The Licensee shall dispose of all Sewage in the Sewage Disposal Facility.

3. Effluent discharged from the Sewage Disposal Facility at Monitoring Station ROB-4 shall not exceed the following Effluent quality limits:

Parameter	Maximum Concentration
pH	6 to 9
TSS	180 mg/L
BOD_5	120 mg/L
Faecal Coliforms	10,000 CFU/dl
Oil and Grease	No visible sheen

4. Effluent discharged from the Tailings Pond at Monitoring Station ROB-5 shall be directed to the flooded underground mine adit at Robert's Bay, at least 2 meters below the flooded surface and shall not exceed the water quality criteria provided in Table 1 of Appendix A.

5. The Licensee shall confirm compliance with Effluent quality limits in Part D Items 3 and 4 prior to Discharge.

6. The Licensee shall provide at least ten (10) days notice to the Inspector prior to any planned Discharges from any facilities. The notice shall include an estimated volume proposed for Discharge and the receiving location.

7. The Licensee shall discharge Effluent in such a manner as to minimize surface erosion at a distance of at least thirty (30) meters above the ordinary high water mark of any water body, where direct flow into a water body is not possible and no additional impacts are created, or as otherwise approved by the Board in writing.

8. The Licensee shall contain all Greywater in a sump located at a distance of at least thirty (30) metres above the ordinary high water mark of any water body, at a site where direct flow into a water body is not possible and no additional impacts are created, unless otherwise approved by the Board in writing.

9. The Licensee is authorized to dispose of all acceptable food waste, paper waste and untreated wood products in an incinerator and shall remove the ash from incineration activities to an approved facility for disposal.

10. The Licensee shall submit to the Board, within sixty (60) days of licence issuance, a

Solid Waste Disposal Facility Management Plan that includes detailed plans for the disposal of non-hazardous solid waste and plans for the management of surface runoff.

11. The Licensee shall dispose of soils containing substances that exceed the soil quality criteria provided in Table 2 of Appendix A in accordance with the approved Remediation Plan referred to in Part E Item 1.

12. The Licensee shall dispose of sediment containing substances that exceed the sediment quality criteria provided in Table 3 of Appendix A in accordance with the approved Remediation Plan referred to in Part E Item 1.

13. The Licensee shall control and treat any Contact Water, including Contact Water at monitoring stations ROB-10 and ROB-11, containing substances that exceed the water quality criteria provided in Table 1 of Appendix A. Any discharge of Contact Water that meets the water quality criteria in Table 1 of Appendix A shall be discharged in accordance with Part D Item 7.

14. The Licensee shall, for the storage of containers that contain contaminated soil, refer to Part I Item 3.

15. The Licensee shall remove from site, containers used for storage of contaminated materials, on an annual basis.

16. The Licensee shall locate areas designated for waste disposal at a minimum distance of thirty (30) metres from the ordinary high water mark of any water body such that the quality, quantity or flow of water is not impaired, unless otherwise approved by the Board in writing.

17. If the Licensee intends to backhaul any waste to a local Nunavut community, the Licensee shall provide to the Board, documented authorization from that community prior to the backhauling of any waste.

18. The Licensee shall manage the storage and disposal of all hazardous materials, including waste oil, in accordance with the *Environmental Protection Act* (EPA), and regulations and the Government of Nunavut's Environmental Guideline for the General Management of Hazardous Waste.

19. The Licensee shall maintain records of all waste backhauled and records of confirmation of proper disposal of backhauled waste. These records shall be made available to an Inspector upon request.

PART E: CONDITIONS APPLYING TO THE UNDERTAKING

1. The Licensee shall implement the preferred options identified in the Remediation Plan entitled "*Roberts Bay and Ida Bay Abandoned Mine Sites Remediation Plan*" prepared

by AMEC Earth & Environmental, dated January 2007.

2. The Licensee shall review the Remediation Plan referred to in Part E Item 1 as required by changes in operation and/or technology and modify the Plan accordingly. Revisions to the Plan are to be submitted in the form of an Addendum to be included with the Annual Report referred to in Part B Item 1.

3. The Licensee shall submit to the Board for approval, within sixty (60) days of licence issuance, final design and construction drawings signed and stamped by a Professional Engineer registered in Nunavut for the following:
   - Remediation of Mine Openings;
   - Remediation of the Tailings Pond;
   - Remediation of the existing Landfill; and
   - Construction of the Solid Waste Disposal Facility.

4. All activities shall be conducted in such a way as to minimize impacts on surface drainage and the Licensee shall immediately undertake any corrective measures in the event of any impacts on surface drainage.

5. The Licensee shall not remove any material from below the ordinary high water mark of any water body unless otherwise authorize by the Board in writing.

6. The Licensee shall not deposit, nor permit the deposit of sediment into any waterbody.

7. The Licensee shall not cause erosion to the banks of any body of water and shall provide necessary controls to prevent such erosion.

8. Sediment and erosion control measures shall be implemented prior to and maintained during the operation to prevent entry of sediment into water.

9. The Licensee shall minimize disturbance to terrain, permafrost and drainage during movement of contractor's equipment and personnel around the site during remediation activities.

10. The Licensee shall control all movement of heavy machinery, vehicles and equipment within the hazardous material management area to prevent the dispersion of potentially hazardous dust and materials into the environment.

11. The Licensee shall submit to the Board for approval, thirty (30) days prior to any quarrying activity, a Quarry Management Plan that includes:
   - Selected quarry and borrow site locations and their distance from the normal high water mark of any water body;
   - The topography of selected site(s);
   - Monitoring data to demonstrate that the quarry material is not potentially acid generating or metal leaching; and
   - Monitoring to verify that runoff from the quarry site(s) does not exceed the

Canadian Council of Ministers of the Environment (CCME) Canada Water Quality Guidelines (CWQG) for the protection of aquatic life.

12. The Licensee shall submit to the Board for approval, within sixty (60) days of Licence issuance, a Tailings Freezeback Report including data that demonstrates the likelihood of freezeback permafrost conditions within the tailings.

13. The Licensee shall submit to the Board for approval, within sixty (60) days of Licence issuance, a Tailings Pond Dewatering Plan that includes:
    - A detailed plan, including contingency measures, for the transfer of Tailings Pond Effluent into the Robert's Bay underground mine adit;
    - Triggers that will indicate that treatment of the Tailings Pond Effluent is required; and
    - Treatment measures, if treatment is deemed necessary.

14. The construction of engineered earthworks shall be supervised and field checked by a qualified Engineer. Construction records shall be maintained and available at the request of the Board.

15. The Licensee shall submit to the Board, within ninety (90) days following the completion of remediation, as-built drawings of the Tailings Pond, Mine Openings, Solid Waste Disposal Facility, and the existing Landfill.

PART F: CONDITIONS APPLYING TO CAMPS AND ACCESS INFRASTRUCTURES

1. The Licensee shall not erect camps or store material on the surface of frozen streams or lakes including immediate banks except what is for immediate use. Camps shall be located on gravel, sand or other durable land such as to minimize impacts on surface drainage.

2. Winter lake and stream crossings, including ice bridges, shall be constructed entirely of water, ice or snow. The Licensee should minimize disturbance by locating ice bridges in an area that requires the minimum approach grading and the shortest crossing route. Stream crossings shall be removed or the ice notched prior to spring break-up.

3. With respect to the access road, pad construction or other earthworks, the direct or indirect deposition of debris or sediment into any water body is prohibited. These materials shall be disposed a distance of at least thirty (30) metres from the ordinary high water mark in such a fashion that they do not enter the water.

PART G: CONDITIONS APPLYING TO DRILLING OPERATIONS

1. The Licensee is authorized to drill for the purposes of the installation of thermistors and

monitoring wells as required under Part K.

2. The Licensee shall not conduct any land based drilling within thirty (30) metres of the ordinary high water mark of any water body, unless otherwise approved by the Board in writing.

3. The Licensee shall ensure that all drill waste, including water, chips, muds and salts ($CaCl_2$) in any quantity or concentration, from land-based and on-ice drilling, shall be disposed of in a properly constructed sump or an appropriate natural depression located at a distance of at least thirty (30) metres from the ordinary high water mark of any adjacent water body, where direct flow into a water body is not possible and no additional impacts are created.

4. If artesian flow is encountered, drill holes shall be immediately sealed and permanently capped to prevent induced contamination of groundwater or salinization of surface waters. The Licensee shall report all artesian flow occurrences within the Annual Report, including the location (GPS coordinates) and dates.

5. Where drilling activity has penetrated below the permafrost layer, the NWB requests that the proponent record the depth of permafrost and location of the drill hole to be included within the Annual Report.

PART H: CONDITIONS APPLYING TO MODIFICATIONS

1. The Licensee may, without written consent from the Board, carry out Modifications to the Water Supply Facilities and Waste Disposal Facilities provided that such Modifications are consistent with the terms of this Licence and the following requirements are met:

    a. the Licensee has notified the Board in writing of such proposed Modifications at least sixty (60) days prior to beginning the Modifications;
    b. such Modifications do not place the Licensee in contravention of the Licence or the *Act*;
    c. the Board has not, during the sixty (60) days following notification of the proposed Modifications, informed the Licensee that review of the proposal will require more than sixty (60) days; and
    d. the Board has not rejected the proposed Modifications.

2. Modifications for which all of the conditions referred to in Part H, Item 1 have not been met can be carried out only with written approval from the Board.

3. The Licensee shall provide as-built plans and drawings of the Modifications referred to in this Licence within ninety (90) days of completion of the Modification. These plans and drawings shall be stamped by an Engineer.

PART I: CONDITIONS APPLYING TO SPILL CONTINGENCY PLANNING

1. The Licensee shall submit to the Board for approval, within thirty (30) days of Licence issuance a site specific Spill Contingency Plan developed in accordance with the Government of Nunavut *Spill Contingency Planning and Reporting Regulations* and the document entitled "*Contingency Planning and Reporting in Nunavut: a Guide to the New Regulations*". The Plan shall take into consideration comments and recommendations received from Environment Canada, INAC and the GN-DoE.

2. The Licensee shall review the Plan referred to in this Part as required by changes in operation and/or technology and modify the Plan accordingly. Revisions to the Plan are to be submitted in the form of an Addendum to be included with the Annual Report.

3. The Licensee shall prevent any chemicals, petroleum products or wastes from entering any water body. All sumps and fuel caches shall be located at a distance of at least thirty (30) metres from the ordinary high water mark of any adjacent water body and inspected on a regular basis. The Licensee shall use secondary containment with an impervious liner; such as self supporting insta-berms, for storage of barreled fuel rather than relying on natural depressions to contain spills.

4. Any equipment maintenance and servicing shall be conducted only in designated areas and shall implement special procedures (such as the use of drip pans) to manage motor fluids and other waste and contain potential spills.

5. If during the term of this Licence, an unauthorized discharge of waste occurs, or if such a discharge is foreseeable, the Licensee shall:

    a. Employ the Spill Contingency Plan;

    b. Report the spill immediately to the 24-Hour Spill Line at (867) 920-8130 or Environment Canada's 24 hour pager at (867) 920-5131, and to the Inspector at (867) 975-4295; and

    c. For each spill occurrence, submit to the Inspector, no later than thirty (30) days after initially reporting the event, a detailed report that will include the amount and type of spilled product, the GPS location of the spill, and the measures taken to contain and clean up the spill site.

PART J: CONDITIONS APPLYING TO ABANDONMENT AND RESTORATION OR TEMPORARY CLOSING

1. The Licensee shall submit to the Board for approval within ninety (90) days of Licence issuance an Abandonment and Restoration Plan to address contractor demobilization and site remediation operations.

2. Within ninety (90) days following the completion of remediation, the Licensee shall submit to the Board, a close-out report containing the results of confirmation sampling to demonstrate that clean-up objectives were met at the completion of remediation activities. This report shall also contain results of additional ARD and ML sampling and testing on representative waste rock material placed on surface to confirm that waste rock used during remediation is non-acid generating and non-metal leaching. The report shall also include a re-evaluation of the need for post closure monitoring.

3. The Licensee shall complete all restoration work prior to the expiry of this Licence.

4. The Licensee shall carry out progressive reclamation of any components of the project no longer required for the Licensee's operations.

5. The Licensee shall backfill and restore all sumps to the pre-existing natural contours of the land.

6. The Licensee shall remove from the site, infrastructure and site material including all fuel and hazardous material caches, drums, barrels, buildings and contents, docks, water pumps and lines, material and equipment before the expiry of this Licence.

7. All roads and airstrip, if any, shall be re-graded to match natural contour to reduce erosion.

8. All culverts shall be removed and the drainage opened up to match the natural channel. Measures shall be implemented to minimize erosion and sedimentation.

9. In order to promote growth of vegetation and the needed microclimate for seed deposition, all disturbed surfaces shall be prepared by ripping, grading, or scarifying the surface to conform to the natural topography.

10. Areas that have been contaminated by hydrocarbons from normal fuel transfer procedures shall be reclaimed to meet objectives as outlined in the Government of Nunavut's *Environmental Guideline for Site Remediation, January 2002*. The use of reclaimed soils for the purpose of back fill or general site grading may be carried out only upon consultation and approval by the Government of Nunavut, Department of Environment.

11. All disturbed areas shall be contoured and stabilized upon completion of work and restored to a pre-disturbed state.

PART K: CONDITIONS APPLYING TO THE MONITORING PROGRAM

1. The Licensee shall submit to the Board for approval, within thirty (30) days of Licence issuance, a project specific monitoring plan that includes:

- GPS coordinates of all sampling points as well as a detailed schematic map identifying all monitoring station sites in relation to infrastructure and topography;
- Specific components of the visual, soil/water and thermal monitoring program;
- Sampling frequency; and
- Physical and chemical parameters for analyses.

2. The Licensee shall maintain Monitoring Program Stations at the following locations:

Monitoring Station	Description	Parameters	Frequency of Monitoring
ROB-1	Water supply intake at un-named pond adjacent to the camp	Volume	Daily
ROB-2	Water supply intake at Robert's Lake	Volume	Daily
ROB-3	Sewage pumped to the Sewage Disposal Facility	Volume	Monthly and annually during remediation
ROB-4	Final Point of Discharge from the Sewage Lagoon	Volume and water quality	Once upon commencement of discharge and once prior to completion of discharge during remediation
ROB-5	Discharge from the Tailings Pond	Volume and water quality	During periods of flow
ROB-6	The stream flowing south to Roberts Lake (main watershed)	Water quality	Annually after spring melt
ROB-7	The stream or streams flowing north and west around the bedrock high (northern site drainage)	Water quality	Annually after spring melt
ROB-8	Any streams flowing west to Roberts Bay located below the Tailings Pond, Solid Waste Disposal Facility, and Landfill sites (to detect possible leachate from those facilities)	Water quality	Annually after spring melt

ROB-9	Roberts Lake (for background and control)	Water Quality	Annually after spring melt
ROB-10	Runoff and leachate from the Solid Waste Disposal Facility / Tailings Pond	Water Quality	Annually after spring melt
ROB-11	Runoff and leachate from the Landfill	Water Quality	Annually after spring melt
ROB-12	Tailings	Temperature	As determined by re-evaluation of need for post closure monitoring

3. The Licensee shall carry out the monitoring required in Part K, Item 2.

4. The Licensee shall measure and record, in cubic metres, the daily quantities of water utilized for the camp and any other purposes.

5. The Licensee shall provide the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where sources of water are utilized for all purposes.

6. The Licensee shall determine the GPS co-ordinates (in degrees, minutes and seconds of latitude and longitude) of all locations where wastes associated with camp operations and remediation activities are deposited.

7. The Licensee shall measure and record the monthly and annual quantities of material deposited in Waste Disposal Facilities.

8. The Licensee shall monitor the quality of sewage effluent within the Sewage Disposal Facility prior to discharge to comply with effluent quality criteria provided in Part D Item 3.

9. All sampling, sample preservation and analyses shall be conducted in accordance with methods prescribed in the current edition of *Standard Methods for the Examination of Water and Wastewater*, or by such other methods approved by the Board in writing.

10. Additional monitoring requirements may be requested by the Inspector.

11. All analyses shall be performed in a laboratory accredited according to ISO/IEC Standard 17025. The accreditation shall be current and in good standing.

12. The Licensee shall analyse all monitoring samples at a laboratory certified by the Canadian Association for Environmental Analytical Laboratories (CAEL).

13. The Licensee shall, within thirty (30) days of Licence issuance, submit to the Analyst for approval a Quality Assurance/ Quality Control (QA/QC) Plan, which addresses both field and laboratory requirements. The Plan shall be submitted to the Board upon approval by the Analyst.

14. The Licensee shall include in the Annual Report required under Part B, Item 1 all data, monitoring results and information required by this Part.

APPENDIX A

REMEDIATION CRITERIA

Table 1 : Water Quality Criteria

Analytical Parameters	Surface Water Freshwater (mg/L)	Surface Water Marine (mg/L)
Benzene	0.370	0.110
Toluene	0.002	0.215
Ethylbenzene	0.090	0.025
Xylenes	0.18	No Guideline (NG)
PHC-F1	No Guideline (NG)	NG
PHC-F2	NG	NG
PHC-F3	NG	NG
PHC-F4	NG	NG
Aluminum	0.005-0.1	NG
Antimony	NG	NG
Arsenic	0.005	0.0125
Barium	NG	NG
Beryllium	NG	NG
Bismuth	NG	NG
Cadmium	0.000017	0.00012
Calcium	NG	NG
Chromium	0.0089	0.056
Cobalt	NG	NG
Copper	0.002-0.004	NG
Iron	0.3	NG
Lead	0.001-0.007	NG
Magnesium	NG	NG
Manganese	NG	NG
Mercury	0.000026	0.000016
Molybdenum	0.073	NG
Nickel	0.025-0.150	NG
Phosphorus	NG	NG
Potassium	NG	NG
Selenium	0.001	NG
Silver	0.0001	NG
Sodium	NG	NG
Strontium	NG	NG
Thallium	0.0008	NG
Tin	NG	NG
Titanium	NG	NG
Vanadium	NG	NG
Zinc	0.03	NG

Table 2 : Soil Quality Criteria

Analytical Parameters	Surface Soil (mg/kg)	
	Fine Grained	Coarse Grained
Benzene	0.0068	0.0095
Toluene	0.08	0.37
Ethylbenzene	0.018	0.082
Xylenes	2.4	11
PHC-F1	245 (fractional C_6-$C1_0$ corrected for BTEX)	130
PHC-F2	700 (fractional C_{10}-C_{16})	150
PHC-F3	1135 (fractional C_{16}-C_{34})	400
PHC-F4	647 (fractional C_{34}-C_{50+})	2800
Naphthalene	0.6	
Quinoline	NG	
Phenanthrene	5	
Pyrene	10	
Benzo(a)antracene	1	
Benzo(b)fluoranthene	1	
Benzo(k)fluorantene	1	
Benzo(a)pyrene	0.7	
Indeno(1,2,3-cd)pyrene	1	
Dibenzo(a,h)anthracene	1	
Antimony	20	
Arsenic	105	
Barium	500	
Beryllium	4	
Cadmium	10	
Chromium	64	
Cobalt	50	
Copper	176	
Lead	140	
Mercury	6.6	
Molybdenum	10	
Nickel	50	
Selenium	1	
Silver	39	
Thallium	1	
Tin	50	
Uranium	NG	
Vanadium	130	
Zinc	>2000	

Table 3: Sediment Quality Criteria

Analytical Parameters	Surface Water Freshwater (mg/L)	Surface Water Marine (mg/L)
Benzene	No Guideline (NG)	No Guideline (NG)
Toluene	NG	NG
Ethylbenzene	NG	NG
Xylenes	NG	NG
PHC-F1	NG	NG
PHC-F2	NG	NG
PHC-F3	NG	NG
PHC-F4	NG	NG
Aluminum	NG	NG
Antimony	NG	NG
Arsenic	5.9	7.24
Barium	NG	NG
Beryllium	NG	NG
Bismuth	NG	NG
Cadmium	0.6	0.7
Calcium	NG	NG
Chromium	37.3	52.3
Cobalt	NG	NG
Copper	35.7	18.7
Iron	NG	NG
Lead	35.0	30.2
Magnesium	NG	NG
Manganese	NG	NG
Mercury	0.17	0.13
Molybdenum	NG	NG
Nickel	NG	NG
Phosphorus	NG	NG
Potassium	NG	NG
Selenium	NG	NG
Silver	NG	NG
Sodium	NG	NG
Strontium	NG	NG
Thallium	NG	NG
Tin	NG	NG
Titanium	NG	NG
Vanadium	NG	NG
Zinc	123	124

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Nunavut Regional Office
P.O. Box 2200
Iqaluit, NU, X0A 0H0

Feb 9, 2009

Nunavut Water Board
P.O. Box 119
Gjoa Haven, Nunavut
X0B 1J0

Attn: Thomas Kabloona, A/Chief Executive Officer
Re: NWB Water Licence No. 1BR-ROB0813 – Modifications to final Remedial Action Plan (RAP)

The aforementioned license was granted to Indian and Northern Affairs Canada (INAC) based on the remedial plan prepared for the site by AMEC earth and Environmental, titled "Robert's Bay and Ida Bay Abandoned Mine Sites Remediation Plan". This report was also used by Public Works and Government Services (PWGSC), on behalf of INAC to prepare the project specifications. As these specifications developed, a few minor changes were made to minimize risks to health and safety. These changes are outlined below:

Robert's Bay

Mine Openings

The AMEC remediation plan indicated that the mine openings would be infilled with waste rock and then blasted and backfilled. A concrete cap would be placed over the vent raise. It was noted that there was a health and safety risk in placing waste rock within the mine openings, as their structural integrity was not known. For this reason it was determined that the mine openings would be blasted and backfilled with waste rock only. Further investigation at the site also determined that a waste rock cover over the vent raise would remove the risk of inadvertent entry.

Landfill Location

The AMEC remediation plan identified 6 potential locations. Two of these sites are identified as preferred, the old camp area and east of the garage. Further investigation determined that it would be more efficient to use the Tailings pond, one of the 6 areas identified, as the landfill. The use of the Tailings Pond as the landfill location is identified as a preferred option for the remediation of the Tailings Pond.

Tailings Pond

The AMEC remediation plan indicated that the water from the Tailings Pond would be pumped out and transferred to the underground mine adit for disposal. Our current plan is to pump out the water and treat it if necessary prior to discharge. If the water cannot be treated, it will be disposed of off site.

Waste Rock
The AMEC remediation plan calls for waste rock to be placed within the adit. As discussed in the Mine Opening section, waste rock will not be placed in the adit for safety reasons. It will still be used as cover after blasting and to regrade the site.

Hydrocarbon Impacted Soils
The AMEC remediation plan called for the soils to be sequestered in Doris North Mine or disposed in the on-site landfill. Our current plan is to take these soils off-site for disposal in a licensed disposal facility.

Ida Bay

Non-Hazardous Waste
The AMEC remediation plan called for the burial of non-hazardous waste in the adit. Our current plan will remove the non-hazardous waste from Ida Bay and dispose of it in the landfill at Robert's Bay.

Waste Rock
The AMEC remediation plan calls for the removal of waste rock from above the High Tide Mark. This was a mistake. It is the waste rock from above the Low Tide Mark that will be removed and disposed of in the exploration trench at Ida Bay.

Mine Openings
Similar to the mine openings at Robert's Bay, the AMEC remediation plan calls for disposal of waste rock in the mine openings, followed by blasting. As mentioned previously, for safety reasons, we are not infilling the mine openings with waste rock. However, we will still be blasting and backfilling with waste rock.

Should you have any questions or require any clarifications on these modifications to the original Remediation Plan, please contact the undersigned or the Project Manager, Dele Morakinyo at dele.morakinyo@inac-ainc.gc.ca, or by telephone at (819) 934-9224.

Sincerely

Natalie Plato, P. Eng.
Director, Contaminated Sites Program (NRO)
Tel: (867) 975-4730;
Fax: (867) 975-4736
Email: Natalie.Plato@inac-ainc.gc.ca

Quarry Remits

SENES

Indian and Northern Affairs Canada
www.inac.gc.ca

Affaires indiennes et du Nord Canada
www.ainc.gc.ca

Land Administration
P.O. Box 100
IQALUIT, NU X0A 0H0
Phone:867-975-4275
FAX: 867-975-4286

Your file - Votre référence

Our file - Notre référence

February 18, 2009

Natalie Plato
DIAND-Contaminated Sites
P.O. Box 2200
Iqaluit, NU
X0A 0H0

Dear Ms. Natalie Plato:

Re: Land Use Permit #N2007X0006
Type of Operation: Site Remediation
Location: Ida Bay and Roberts Bay

Further to our letter dated February 12, 2009, this will confirm that the above land use permit is hereby extended from April 1, 2009 to April 1, 2010.

All conditions annexed to land use permit will apply to this extension.

This letter also serves as notice that your Quarry Permits within this Land Use Permit have been approved as well. Enclosed are Quarry Permits 2009QP0059 - 2009QP0065. Please adhere to all operating conditions of your Quarry Permits.

Yours truly,

Spencer Dewar
Manager, Land Administration
Land Administration

cc: Manager, Field Operations
RMO - Kitikmeot
NIRB
NPC

Canada

Printed on recycled paper - Imprimé sur papier recyclé

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0059

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **300 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #1, Roberts Bay, 200m East of the former campsite, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.

2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.

3. This permit shall not be assigned.

4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.

5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.

6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.

7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.

8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).

9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.

10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.

11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**.

Land Agent

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0060

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **2520 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #2, Roberts Bay, immediately South of the main rock waste pile, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**.

Land Agent

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0061

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **2250 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #3, Roberts Bay, 60m South of the former campsite, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**.

Land Agent

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0062

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **1370 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #4, Roberts Bay, 40m N.E. of the fuel bladders, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**.

Land Agent

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0063

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **215 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #5, Roberts Bay, 100m North of the former Roberts Bay Mill, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.

2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.

3. This permit shall not be assigned.

4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.

5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.

6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.

7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.

8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).

9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.

10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.

11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**.

Land Agent

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0064

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **2,880 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #6, Roberts Bay, 200m West of the Roberts Bay tailings pond, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**

Land Agent

Canada

Indian and Northern Affairs Canada / Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0065

Permit Fee....,Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

DIAND – Contaminated Sites

of **Indian and Northern Affairs Canada, P.O. Box 2200, Iqaluit, Nunavut, X0A 0H0** is hereby authorized to take **1200 cubic meters of Sand/Gravel**
from the lands described as follows: **From one (1) Borrow area, Borrow Area #1, IDA Bay, 250m N.W. of the Ida Bay Adit, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.

2. This permit does not grant to the permittee any exclusive right or leasehold interest in the land described herein.

3. This permit shall not be assigned.

4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.

5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the permittee.

6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.

7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.

8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).

9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.

10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.

11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **18th** day of **February, 2009**

Land Agent

Canada

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

www.inac.gc.ca
www.ainc.gc.ca

Your file - Votre référence

Our file - Notre référence

Land Administration
P.O. Box 100
IQALUIT, NU X0A 0H0
Phone: 867-975-4275
FAX: 867-975-4286

February 23, 2010

DIAND-Contaminated Sites
P.O. Box 2200
Iqaluit, NU
X0A 0H0

Dear Ms. Plato:

Re: Land Use Permit #N2007X0006
Type of Operation: Site Remediation
Location: Roberts and Ida Bay, Kitikmeot, NU, NTS 077A

This letter is to inform you that your Quarry Permit Applications have been approved. Please see the enclosed Quarry Permits 2010QP47-2010QP0052.

Sincerely,

Brian O'Mara
Land Administrator Specialist
Land Administration

cc: Manager, Field Operations
RMO - Baffin RMO
NIRB
NPC

Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO. 2010QP0047

Permit Fee.....Free Permit under Section 12(2)(b) of Territorial Quarrying Regulations.

DIAND-Contaminated Sites

of **DIAND-Contaminated Sites, P.O. Box 2200, Iqaluit, NU, X0A 0H0**, is hereby authorized to take **300 cubic meters of Sand/Gravel** from the lands described as follows: **From one (1) Borrow area, Borrow Area 1, Roberts Bay, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the Permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the Permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **23rd** day of **February, 2010**.

Land Agent

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO. 2010QP0048

Permit Fee.....Free Permit under Section 12(2)(b) of Territorial Quarrying Regulations.

DIAND-Contaminated Sites

of **DIAND-Contaminated Sites, P.O. Box 2200, Iqaluit, NU, X0A 0H0**, is hereby authorized to take **1,008 cubic meters of Sand/Gravel** from the lands described as follows: **From one (1) Borrow area, Borrow Area 2, Roberts Bay, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the Permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the Permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **23rd** day of **February, 2010**.

Land Agent

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO. 2010QP0049

Permit Fee.....Free Permit under Section 12(2)(b)
of Territorial Quarrying Regulations.

DIAND-Contaminated Sites

of **DIAND-Contaminated Sites, P.O. Box 2200, Iqaluit, NU, X0A 0H0**, is hereby authorized to take **2,250 cubic meters of Sand/Gravel** from the lands described as follows: **From one (1) Borrow area, Borrow Area 3, Roberts Bay, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.

2. This permit does not grant to the Permittee any exclusive right or leasehold interest in the land described herein.

3. This permit shall not be assigned.

4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.

5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the Permittee.

6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.

7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.

8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).

9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.

10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.

11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **23rd** day of **February, 2010**.

Land Agent

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO. 2010QP0050

Permit Fee.....Free Permit under Section 12(2)(b) of Territorial Quarrying Regulations.

DIAND-Contaminated Sites

of **DIAND-Contaminated Sites, P.O. Box 2200, Iqaluit, NU, X0A 0H0**, is hereby authorized to take **182 cubic meters of Sand/Gravel** from the lands described as follows: **From one (1) Borrow area, Borrow Area 4, Roberts Bay, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.

2. This permit does not grant to the Permittee any exclusive right or leasehold interest in the land described herein.

3. This permit shall not be assigned.

4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.

5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the Permittee.

6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.

7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.

8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).

9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.

10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.

11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **23rd** day of **February, 2010**.

Land Agent

Canada

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO. 2010QP0051

Permit Fee.....Free Permit under Section 12(2)(b)
of Territorial Quarrying Regulations.

DIAND-Contaminated Sites

of **DIAND-Contaminated Sites, P.O. Box 2200, Iqaluit, NU, X0A 0H0**, is hereby authorized to take **2,880 cubic meters of Sand/Gravel** from the lands described as follows: **From one (1) Borrow area, Borrow Area 5, Roberts Bay, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.

2. This permit does not grant to the Permittee any exclusive right or leasehold interest in the land described herein.

3. This permit shall not be assigned.

4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.

5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the Permittee.

6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.

7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.

8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).

9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.

10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.

11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **23rd** day of **February, 2010**.

Land Agent

TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO. 2010QP0052

Permit Fee.....Free Permit under Section 12(2)(b) of Territorial Quarrying Regulations.

DIAND-Contaminated Sites

of **DIAND-Contaminated Sites, P.O. Box 2200, Iqaluit, NU, X0A 0H0**, is hereby authorized to take **1,200 cubic meters of Sand/Gravel** from the lands described as follows: **From one (1) Borrow area, Borrow Area 6, IDA Bay, Kitikmeot, Nunavut.**

SUBJECT TO THE FOLLOWING CONDITIONS:

1. This permit expires twelve months from the date of issue or when the authorized quantity of material has been quarried or removed, whichever is the sooner.
2. This permit does not grant to the Permittee any exclusive right or leasehold interest in the land described herein.
3. This permit shall not be assigned.
4. All quarrying under this permit shall be carried out in accordance with the Nunavut Mining Safety Ordinance.
5. This permit is subject to the provisions of the Territorial Quarrying Regulations and the conditions set out herein. Failure to comply with the provisions of the Regulations and the conditions prescribed in this permit may result in cancellation of the permit in accordance with Section 12(5) of the Territorial Quarrying Regulations without prior notice to the Permittee.
6. The Permittee will identify the work area to the satisfaction of the Land Use Inspector prior to the removal of any material and any change in location will require prior approval of the Land Use Inspector.
7. The Permittee will not work any area worked by any other Permittee except as co-ordinated by the Land Use Inspector.
8. No material is to be removed from any land protected by a registered mineral claim, without the Permittee obtaining prior permission of the registered owner(s).
9. Prior to the tenth day of each month, the Permittee shall submit a report to the Land Use Inspector at **Kugluktuk** indicating the quantity of material quarried and the quantity of material removed from the site.
10. Upon expiration of this Permit, as prescribed in Condition One, the Permittee shall level the excavation and restore the lands to the satisfaction of the Land Use Inspector within 30 days of said expiration date or as may be authorized by the Land Use Inspector.
11. Land Use Permit **N2007X0006** and its operating conditions will apply.

Issued at Iqaluit, this **23rd** day of **February, 2010**.

Land Agent

Long Term Monitoring Plan

SENES

Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

ROBERTS BAY AND IDA BAY LONG TERM MONITORING PLAN

February 09, 2009

Table of Contents

1.0 Introduction 2
1.1 Location 2
1.2 Site Characteristics 3
1.2.1 Roberts Bay Site 3
1.2.2 Ida Bay Site 3
1.3 Climate 4
1.4 Geology 4
2.0 Monitoring Program 5
2.1 Details of the Non-Hazardous Waste Landfill 5
2.2 Monitoring Requirements 5
2.2.1 Baseline Monitoring 6
2.2.2 Post Construction (Landfill) Monitoring 7
2.2.3 Natural Environment Monitoring 8
2.3 Monitoring Frequency 9
3.0 Quality Assurance/Quality Control 10

Appendices

Appendix A: Roberts Bay and Ida Bay Map
Appendix B: Non-Hazardous Waste Landfill Location Map
Appendix C: Non-Hazardous Waste Landfill As-Built Drawing
Appendix D: Visual Monitoring Checklist

1.0 Introduction

Roberts Bay and Ida Bay are abandoned silver mine sites. Explorations for silver at Roberts Bay and for silver and gold at Ida Bay were carried out at the sites between 1965 and 1972. Mining activities took place at the sites from 1972 to 1975. Further explorations continued at the leases throughout the 1980s and 1990s. In 1997 the Roberts Mining Lease was surrendered and the area covered by the lease was opened and subsequently re-staked as the ORO 5 claim in 1998.

INAC has completed the site assessment of the site, developed a Remediation Action Plan (RAP), tendered and awarded contract for the RAP implementation and will be carrying out the remediation of the site between 2008 and 2010. The remediation will involve the demolition and disposal of buildings, structures and other debris; the clean up of hazardous materials; and the excavation and disposal of metals and petroleum hydrocarbon contaminated soils.

1.1 Location

Roberts Bay and Ida Bay sites are located approximately 115 kilometres southwest of Cambridge Bay on the north coast of mainland Nunavut. The Roberts Bay site is located approximately 1 km north of Roberts Lake while the Ida Bay mine site is located adjacent to Melville Sound about 6 km north of the Roberts Bay site (Figure 1).

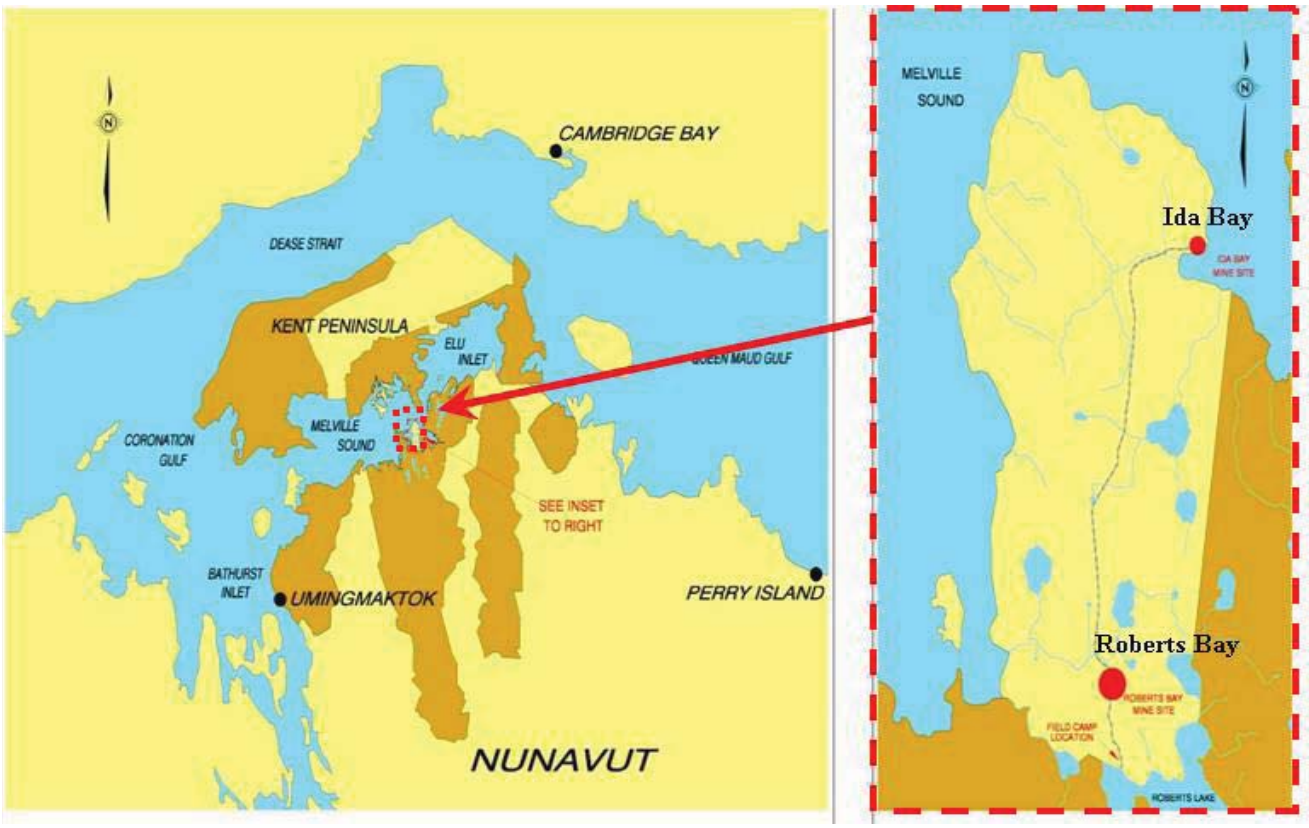


Figure 1: Roberts Bay and Ida Bay Location

1.2 Site Characteristics

1.2.1 Roberts Bay Site

The Roberts Bay mine site has been in a state of abandonment for nearly 30 years. It currently contains residual infrastructure; tailings pond; waste rock; abandoned equipment; non-hazardous wastes and debris (e.g. scrap metal, wood, mill equipment, appliances and burlap bags); hazardous wastes (e.g. petroleum products, batteries, propane tanks, assay lab reagents and some unknown chemicals); petroleum and metals impacted soil.

The site also contains two mine openings (1 adit and 1 vertical shaft) and a capped vent raise. The adit is surrounded by a chain-link fence meant to prevent accidental access to it, but has deteriorated over time. The adit is fully flooded. The vertical shaft is located on the side of a basaltic ridge and is accessible by climbing the ridge. The shaft is open and the walls look partially caved in. There is a fence surrounding 2/3 of the perimeter of the shaft, allowing access to the shaft opening. There are stability problems surrounding the collar. The vent raise has been capped with concrete.

Geochemical assessment conducted on the waste rock and the tailings at the site suggested that these materials are potentially non-acid generating.

1.2.2 Ida Bay Site

Similar to Roberts Bay, Ida Bay mine site has been in a state of abandonment for nearly 30 years. The site consists of one adit; a partially covered vent raise; three waste rock piles; three exploration trenches; and a small amount of non-hazardous debris (scrap wood and metal). The adit is in poor condition and fully flooded. There is no physical barrier to the adit's entrance with the exception of the water preventing access. The vent raise is covered with plywood and, it is flooded. The three exploration trenches found on the site are open.

Waste rock piles are located adjacent to the adit. The smallest of the three piles is located immediately north of the adit and extends from land into the ocean. The second pile is located west of the adit while the third large elongated pile is located to the west of the second pile. Geochemical assessments conducted at the site suggested that the waste rocks are potentially non-acid generating.

1.3 Climate

No weather station was available at Roberts/Ida Bay. The closest weather station is the Cambridge Bay Airport station, operated by Environment Canada, which is about 115 Km Northeast of Roberts Bay. At this station, the average annual total precipitation is 138.8 mm, consisting of 69.6 mm rainfall and 821 mm snowfall. The mean daily high temperature for July is 12.3°C and low of 4.6°C. The January mean daily high temperature is -29.3°C and low of -36.3°C. The fluctuation between highs and lows for daily temperature averages 7.0°C.

Local climate data, in association with the near-by Doris North Project, has been collected at the Windy Lake and Boston mineral exploration camps since 1993. The project area has a low Arctic ecoclimate with a mean annual temperature of –12.1°C with winter (October to May) and summer (June to September) mean daily temperature ranges of -50°C to +11°C and -14°C to +30°C, respectively. The mean annual total precipitation ranges from 94 mm to 207.3 mm. Annual lake evaporation (typically occurring between June and September) is estimated to be 220 mm.

1.4 Geology

The Roberts Bay/Ida Bay project area (the project area) is coastal lowland with numerous lakes and ponds separated by glacial landforms and parallel running geological intrusions of diabase dykes and sills. The drainage basins are generally long and narrow and predominantly oriented along the north-south axis. Low lying areas at the site are saturated and marshy and underlain by clayey silt with permafrost detected at depths of 0.3 to 0.6 m. The dominant soils are Turbic and Static Cyrosols. Elevated areas are typically underlain by a silty gravelly sand till, saturated if poorly drained with permafrost at approximately 0.6 m below grade. Occasional granular deposits are found in the vicinity of the site at surface and are typically well graded sands and gravels with 1 to 2% silt/clay.

The project area is found within the Hope Bay Volcanic Belt in the north of the Slave geological province; a geological sub-province of the Canadian Shield. The rocks within the region are primarily Archean in age and within the Yellowknife Supergroup. The region is underlain by the late Archean Hope Bay Greenstone Belt. This geological formation ranges from 7 to 20 km in width and over 80 km in length, orientated in a north-south direction. The late Archean Hope Bay Greenstone Belt lies entirely within the faulted Bathurst Block forming the northeast portion of the Slave Structural Province. The rocks in this belt are dominantly mafic to felsic lavas and tuffs, namely basalts and andesites that have undergone metamorphism to greenschist facies. Inclusions of granite, granodiorite and quartz veins are common throughout the volcanic belt. Along the margins, at the contact of the volcanics with granite, there are both structural and metamorphic deformations. Both the Roberts Bay and Ida Bay silver mineralization are found within vein structures. The structures of the deposits are generally controlled along a fault, and economic ore minerals included silver, copper, lead and zinc.

2.0 Monitoring Program

After the completion of remediation at the Roberts Bay and Ida Bay sites the only structure that will be constructed and remain at the site is the Non-Hazardous Waste Landfill (NHWL) at the Roberts Bay Site. No NHWL is required at the Ida Bay site. The non-hazardous wastes/debris from Ida Bay will be co-managed with the non-hazardous wastes from Roberts Bay at the Roberts Bay site's NHWL. Due to the small amounts of metals and PCB contaminated (TIER II) soils at the site, there will not be any need for a Secure Soil Disposal Facility (SSDF).

2.1 Details of the Non-Hazardous Waste Landfill

The NHWL is expected to be constructed at Roberts Bay in July 2009 and will be completed and closed before leaving the site in September/October 2009. The proposed location of the NHWL is the current tailings pond (Appendix B).

The NHWL will be constructed by first stabilizing the existing four perimeter tailings pond berms. Tailings spilled over existing berms will be consolidated and managed in the pond. Standing water (if any) in the tailings pond will be drained, treated (if required) and discharged off appropriately. A woven geotextile will be laid on the tailings followed by about 0.3 metre thick granular material for stabilization of the surface. The non-hazardous waste will be placed in the landfill in layers consisting of 0.5 metre lifts of waste covered by 0.15 metres of granular fill. Once all the layers were completed a final cover of granular fill will be used to cap the landfill.

The final construction steps include grading to promote drainage and the installation of the thermistors to monitor freezeback. No monitoring wells will be installed as the zone is a permafrost zone and the wells will not likely produce any additional information.

The NHWL at Roberts Bay will contain: non-hazardous demolition debris, such as timbers, plywood, and sheet metals; non-hazardous site debris, such as scrap metal and wood; non-hazardous debris/soil excavated from site dumps; creosote timbers; and asbestos (double-bagged).

2.2 Monitoring Requirements

The monitoring procedures adopted for the Roberts Bay and Ida Bay sites will be similar to those defined in the INAC's Abandoned Military Site Remediation Protocol, AMSRP (2008), with some modifications as applicable to mine sites. The protocol recommends three categories of monitoring: pre-construction baseline monitoring and post-construction monitoring. Natural environment monitoring is also recommended for each visit to site for the post-construction landfill monitoring.

2.2.1 Baseline Monitoring

The baseline monitoring procedure recommended by INAC AMSRP (2008) involves soil monitoring and groundwater monitoring. Groundwater monitoring will not be required at this site as the zone is a permafrost region and the well may not yield any water.

- Soil Monitoring:

INAC AMSRP (2008) specifies that, for baseline monitoring, soil samples will be taken at a grid spacing of 50 m x 50 m. For the Roberts Bay Site, a minimum of four samples will be taken around the perimeter of the proposed landfill taking into consideration, the site topography. The GPS of these locations will be provided to the regulators following the commencement of work at the site.

The samples will be analyzed for:

- Inorganic elements: arsenic, cadmium, chromium, cobalt, copper, lead, nickel, and zinc;
- Polychlorinated biphenyls (PCBs); and
- Hydrocarbon Fractions, F1, F2, F3 and F4.

These data will supplement the soil information collected during the assessment phase of the site and will be used as the baseline soil data to which subsequent monitoring data would be compared.

- Water (Runoff) Monitoring:

Water samples will be collected (following spring melt) from the channel running towards the Roberts Lake and other channels surrounding the Landfill area that could hold water during spring melt. This will include ROB-6 to ROB-11 monitoring requirements specified in the Nunavut Water Board (NWB)'s Water Licence for this project.

Water samples will be analyzed for:

- Petroleum Hydrocarbon Fractions, F1 and F2
- Total and dissolved metals.
- Major ions, hardness, total dissolved solids, total suspended solids.
- pH and conductivity.
- PCBs

These data will supplement the surface water information collected during the assessment phase of the site and will be used as the baseline surface water data to which subsequent monitoring data would be compared.

2.2.2 Post Construction (Landfill) Monitoring

The INAC AMSRP (2008) recommends a landfill monitoring procedure which involves visual monitoring; soil monitoring and groundwater monitoring. Thermal monitoring is only required if the landfill being monitored is either a Tier II facility or a leachate containing landfill.

Since the Roberts Bay site is a mine site (not military) and because the Landfill is being built on top of the tailings, a modification to INAC AMSRP (2008) is being suggested whereby thermal monitoring will be used to monitor the permafrost aggradation in the landfill to ensure that the tailings and other content of the landfill are immobilized. Also, no groundwater monitoring will be required because the zone is a permafrost zone and groundwater wells will not likely produce any additional information. Similar to the baseline monitoring, surface water samples will be collected, during flow, from the channels surrounding the landfill.

The landfill monitoring program that will be conducted at Roberts Bay are:

- Visual Monitoring
    - This will check the physical integrity of the NHWL and look for evidence of erosion, ponding, frost action, settlement and lateral movement (Appendix D contains a Visual Monitoring Checklist).
    - Photographs will be taken to document the condition of the NHWL and substantiate the recorded observations.

- Soil Monitoring

Soil samples will be taken at the toe of the Landfill towards the down gradient and along the channel that runs towards the Roberts Lake. These samples will be analysed and the results will be compared to baseline/background samples. The parameters that will be analysed include:

- Inorganic elements: arsenic, cadmium, chromium, cobalt, copper, lead, nickel, and zinc
- Polychlorinated biphenyls (PCBs)
- Total Petroleum Hydrocarbons (TPH)

- Water Monitoring (at the surface channels surrounding the proposed Landfill location:

Water samples will be collected (following spring melt) from the channel running towards the Roberts Lake and other streams surrounding the Landfill area. This will include ROB-6 to ROB-11 monitoring requirements specified in the Water Licence for this project. These samples will be analysed and the results will be compared to baseline/background samples.

Water samples will be analyzed for:

  - Petroleum Hydrocarbon Fractions, F1 and F2
  - Total and dissolved metals.
  - Major ions, hardness, total dissolved solids, total suspended solids.
  - pH and conductivity.
  - PCBs

- Thermal Monitoring

  - Four (4) thermistor strings (in pairs) with beads will be installed at selected intervals to provide ground temperature profiles at various locations within the landfill. The actual location of the thermistors to be provided when the contractor get to the site. Automatic data loggers attached to the thermistors allow remote data collection. The data from this system will be collected and analysed to confirm permafrost re-establishment after capping of the landfill.

2.2.3 Natural Environment Monitoring

The natural environment will be assessed immediately after site remediation. Both site specific and regional information will be collected. For full details of the site specific data and regional data that are required, reference can be made to the INAC AMSRP (2008). For the Roberts Bay site, the natural environment monitoring data that will be collected have been incorporated into Appendix D – the Visual Monitoring Checklist.

The natural environment monitoring will be conducted at the same time as other monitoring activities.

2.3 Monitoring Frequency

The post construction monitoring frequency will follow the schedule recommended in the INAC AMSRP (2008). The three phases recommended by the protocol are:

- Phase I: years 1, 3 and 5.
- Phase II (*if required*): Years 7, 10, 15 and 25
- Phase III: beyond 25 years

The monitoring program will be stopped if after the phase I (5 years post remediation) the evaluation of the program confirms that thermal equilibrium has been reached and there are no stability issues. Otherwise, monitoring continues to phase II. (i.e. up to 25 years post remediation).Another evaluation will be conducted at the end of 25 years to determine if monitoring should end or go to phase III. If required, the phase III monitoring requirements will be decided on at that stage.

Monitoring at the Roberts Bay and Ida Bay will begin in 2011. Phase I monitoring will take place in years 2011, 2013, and 2015. Each of the four monitoring events discussed above (i.e. visual monitoring, soil monitoring, water (runoff) monitoring and natural environment monitoring) will be conducted during each of the three site visits. The visits will be carried out during the months of June to August. An evaluation of Phase I monitoring data would be carried out at the end of the 2015 program to confirm whether or not additional monitoring is required.

If additional monitoring (phase II) is required, it will be carried out during the years 2017, 2020, 2025 and 2035. At the completion of the 25 year monitoring program a review will take place and the need for continued monitoring (phase III) will be assessed.

Table 3, below, outlines the monitoring schedule.

Table #1: Monitoring Schedule

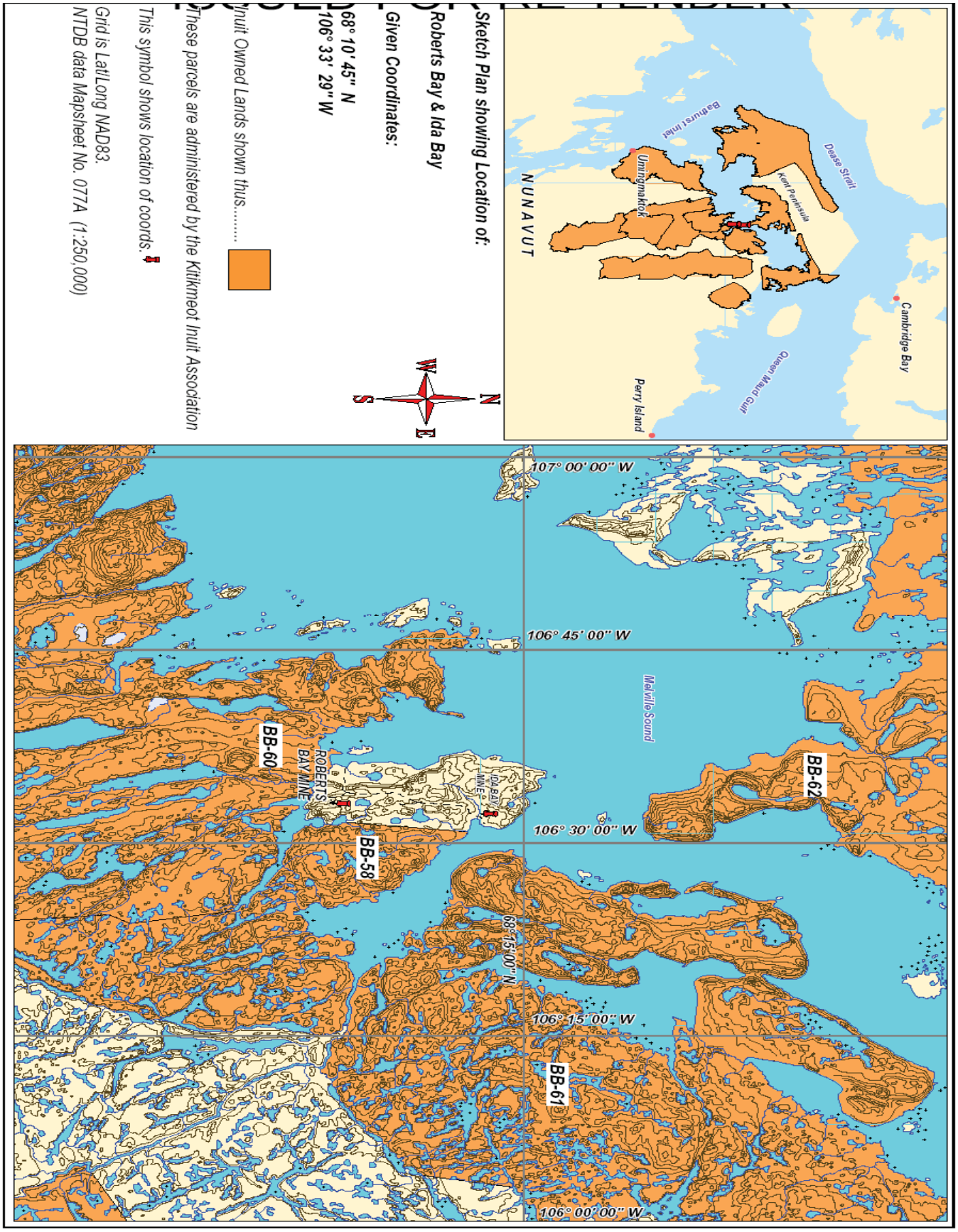
Year	Site Monitoring Scheduled (X)
2011	X
2012	
2013	X
2014	
2015	X
2016	
2017	X
2018	
2019	
2020	X
2021	
2022	
2023	
2024	
2025	X
2026	
2027	
2028	
2029	
2030	
2031	
2032	
2033	
2034	
2035	X

3.0 Quality Assurance/Quality Control

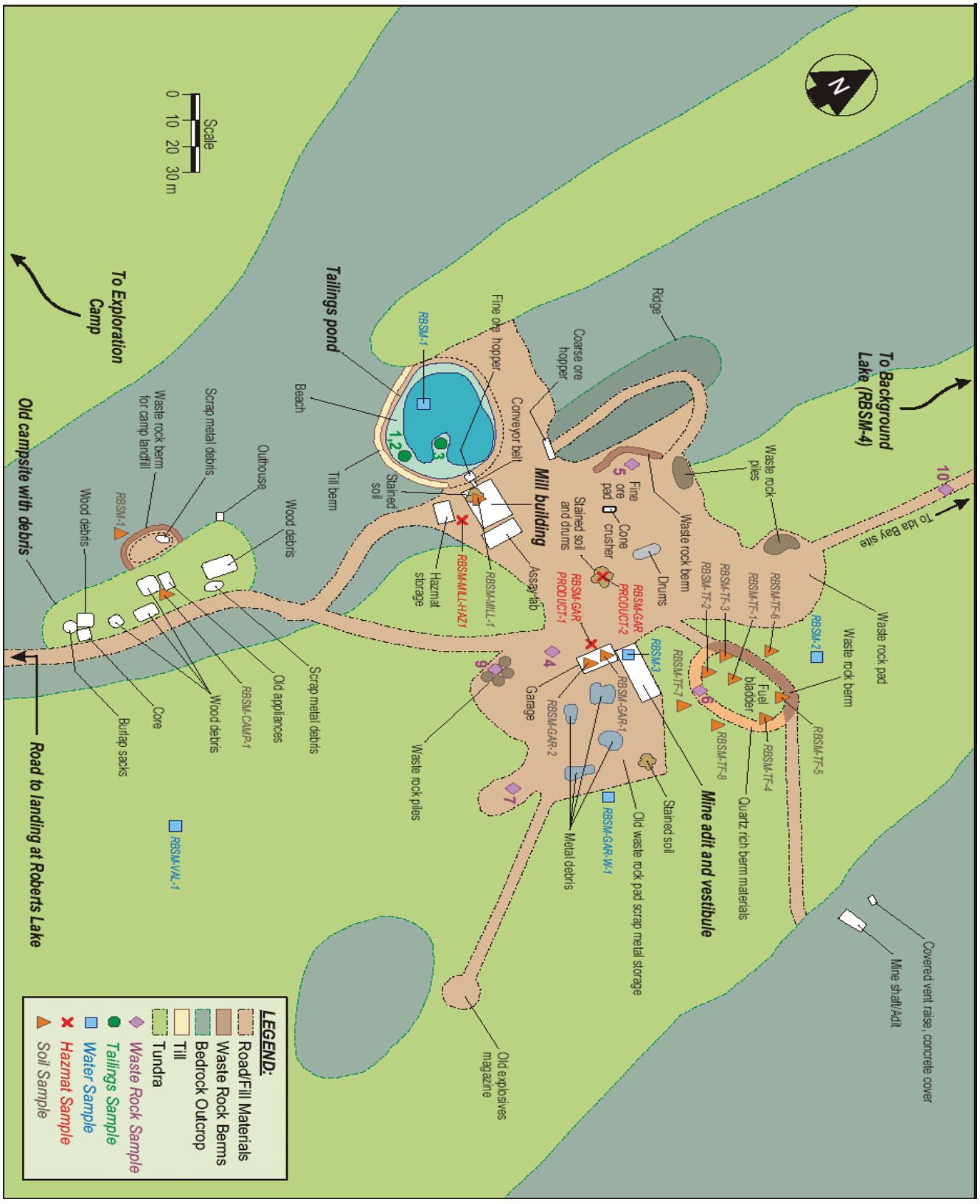
All sampling, sample preservation and analyses will be conducted in accordance with methods prescribed in the current edition of "Standard Methods for the Examination of Water and Wastewater". All analysis will be performed in a Canadian Association of Environmental Analytical Laboratories (CAEAL) Accredited Laboratory.

Quality Assurance/Quality Control (QA/QC) will be consistent with CAEAL regulations and guidelines. At least 20% of samples will be taken and analyzed in duplicate and all appropriate QA/QC data will be generated and reported.

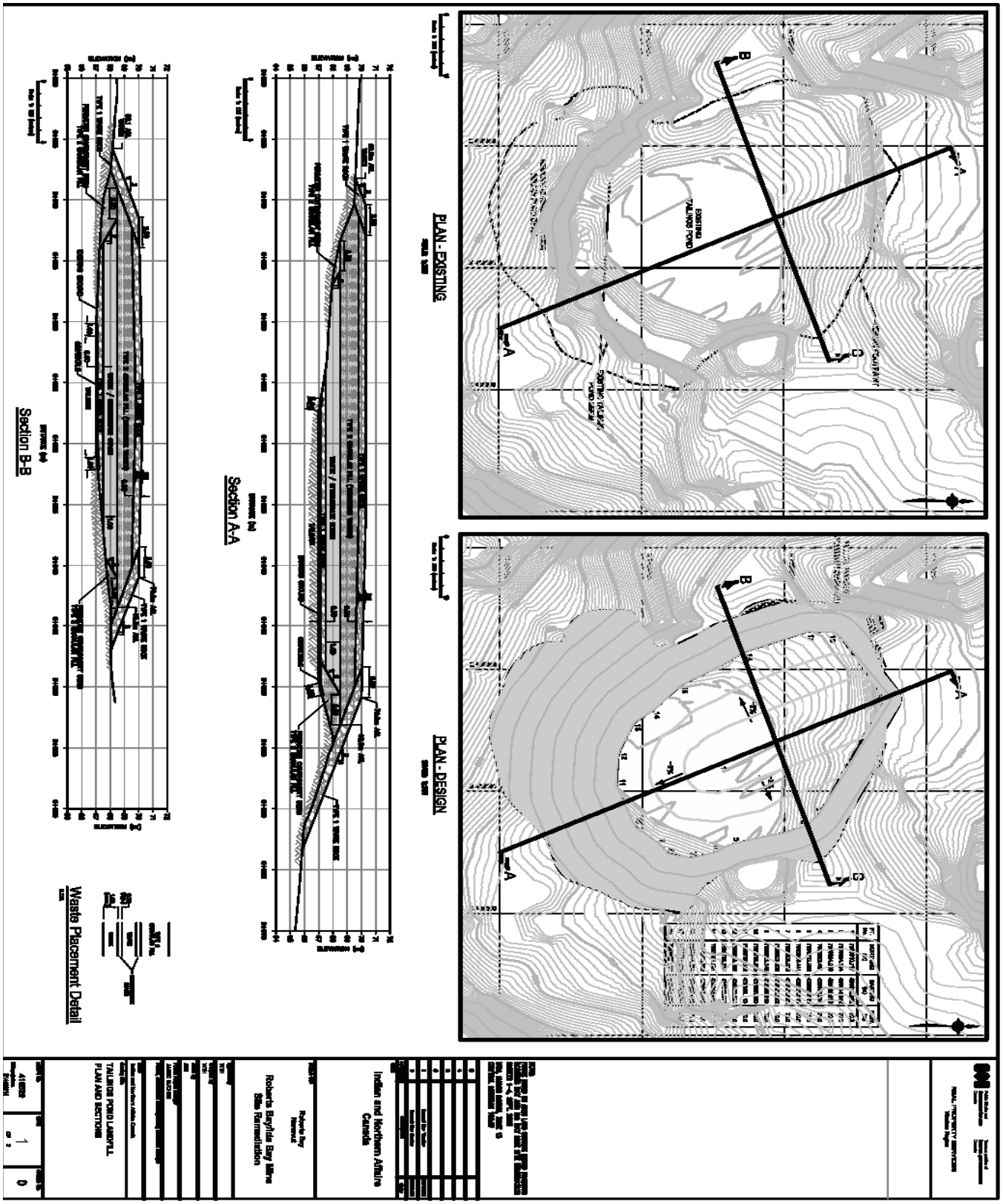
Appendix A: Roberts Bay and Ida Bay Map

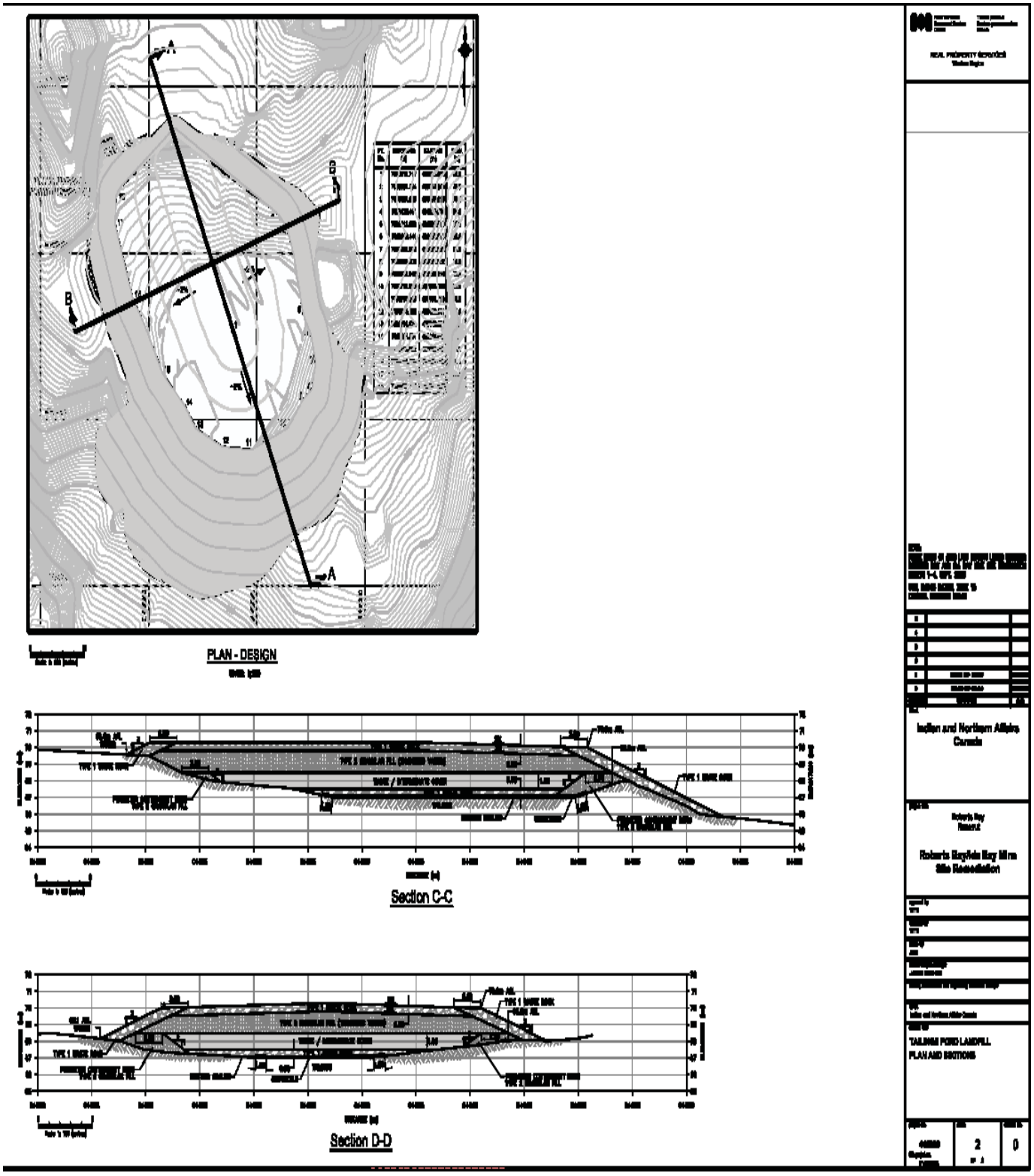

Sketch Plan showing Location of:
Roberts Bay & Ida Bay
Given Coordinates:
68° 10' 45" N
106° 33' 29" W
Inuit Owned Lands shown thus.....
These parcels are administered by the Kitikmeot Inuit Association
This symbol shows location of coords.
Grid is Lat/Long NAD83.
NTDB data Mapsheet No. 077A (1:250,000)
NUNAVUT
Bathurst Inlet
Umingmaktok
Kent Peninsula
Dease Strait
Cambridge Bay
Queen Maud Gulf
Perry Island
107° 00' 00" W
106° 45' 00" W
106° 30' 00" W
106° 15' 00" W
106° 00' 00" W
68° 15' 00" N
Melville Sound
BB-60
BB-58
BB-62
BB-61
ROBERTS BAY MINE
IDA BAY MINE

Appendix B: Non-Hazardous Waste Landfill Location Map (Tailings Pond Area)


N
Scale
0 10 20 30 m
To Background Lake (RBSM-4)
To Ida Bay site
To Exploration Camp
Old campsite with debris
Road to landing at Roberts Lake
Tailings pond
Mill building
Mine adit and vestibule
Beach
Till berm
Stained soil
Fine ore hopper
Coarse ore hopper
Conveyor belt
Ridge
Waste rock piles
Waste rock pad
Waste rock berm
Fine ore pad
Cone crusher
Stained soil and drums
Drums
Assay lab
Hazmat storage
Garage
Fuel bladder
Quartz rich berm materials
Stained soil
Old waste rock pad scrap metal storage
Metal debris
Old explosives magazine
Covered vent raise, concrete cover
Mine shaft/Adit
Waste rock berm for camp landfill
Scrap metal debris
Outhouse
Wood debris
Old appliances
Burlap sacks
Core
RBSM-1
RBSM-2
RBSM-3
RBSM-4
RBSM-5
RBSM-6
RBSM-7
RBSM-8
RBSM-TF-1
RBSM-TF-2
RBSM-TF-3
RBSM-TF-4
RBSM-TF-5
RBSM-TF-6
RBSM-TF-7
RBSM-TF-8
RBSM-MILL-1
RBSM-MILL-HAZ1
RBSM-GAR PRODUCT-1
RBSM-GAR PRODUCT-2
RBSM-GAR-1
RBSM-GAR-2
RBSM-GAR-W-1
RBSM-CAMP-1
RBSM-VAL-1
LEGEND:
Road/Fill Materials
Waste Rock Berms
Bedrock Outcrop
Till
Tundra
Waste Rock Sample
Tailings Sample
Water Sample
Hazmat Sample
Soil Sample

Appendix C: Non-Hazardous Waste Landfill As-Built Drawings


PLAN - EXISTING
PLAN - DESIGN
Section A-A
Section B-B
Waste Placement Detail
Indian and Northern Affairs Canada
Roberts Bay Waste
Roberts Bay/Ida Bay Mine Site Remediation
TAILINGS POND LANDFILL
PLAN AND SECTIONS


PLAN - DESIGN
Section C-C
Section D-D
Indian and Northern Affairs Canada
Roberts Bay Mine Site Reclamation
TALIRUK FORD LANDFILL
PLAN AND SECTIONS
2
0

Appendix D: Visual Monitoring / Natural Monitoring Checklist

Roberts Bay and Ida Bay
VISUAL MONITORING CHECKLIST

Date:	
Landfill:	

Visually assess the landfill for the following items & provide a photograph record

1. Erosion	Answer
a) Is erosion occurring on the surface or berms of the landfill?	
i) Are there preferred drainage channels?	
ii) Is there sloughing of material?	
b) What is the extent of the erosion? *(percentage of surface area)*	
i) Is it localized or continuous?	
c) Where is the erosion occurring? *(i.e. along the toe, on the surface, through the berms)*	
d) Explanation: *(i.e. evidence of significant surface water run-off, poor material)*	

2. Settlement	Answer
a) Is there differential settlement occurring on the surface?	
i) Are there low areas or depressions?	
ii) Are voids forming?	
b) What is the extent of the settlement? *(percentage of surface area)*	
i) Is it localized or continuous?	
ii) How deep is it?	
c) Where is the settlement occurring? *(i.e. near berms, near the centre of the facility)*	
d) Explanation: *(i.e. evidence of significant surface infiltration, water ponding, snow drifting)*	

3. Frost Action	Answer
a) Is there frost action/damage to the landfill?	
i) Is there exposed debris due to uplift?	
ii) Is there tension cracking along the berms?	
iii) Is there sorting of granular fill?	
b) What is the extent of the frost action? *(percentage of surface area)*	
i) Is it localized or continuous?	
c) Where is the heaving/cracking occurring? *(i.e. along the toe, on the surface, through the berms)*	
d) Explanation: *(i.e. poor material, poor compaction, high water/silt content in cover material)*	

4. Monitoring Instruments
a) What is the condition of the monitoring wells and thermistor strings*(if applicable)*?
5. Others - Confirm presence or absence, extent and description of the following
Animal Burrows: Vegetation: Staining: Vegetation Stress: Seepage Points: Exposed Debris: Other observed features:

6. Sketch

7. General Comments

Abandonment and Restoration Plan

SENES

Roberts Bay/Ida Bay, Nunavut
Abandonment & Restoration

Scope of Work

The Roberts Bay/Ida Bay site remediation project involves:

- Construction, operation and closure of non-hazardous waste landfill at Roberts Bay
- Demolition of identified structures and disposal of non-hazardous waste in the Roberts Bay landfill
- Collection of identified scattered debris and disposal of non-hazardous waste in the Roberts Bay landfill
- Collection, packaging, transport and offsite disposal of identified hazardous waste and contaminated soil
- Collapsing, backfilling and regrading of identified mine adits at Roberts Bay and Ida Bay
- Backfilling and regrading of identified a mine vent raise at Ida Bay
- Backfilling and regrading of identified exploration trenches at Ida Bay

Restricted Areas

In advance of any work, all site historical structures will be identified and marked. These areas will remain off limits to all equipment and personnel.

Backfilled and Regraded Areas

All debris will be removed from designated areas prior to closure work. Excavated and backfilled/regraded areas will be crowned and compacted to prevent accumulation of surface water. The areas will then be reshaped to match existing contours.

Landfill Closure

Identified non-hazardous waste materials will be placed and compacted in the onsite landfill. Intermediate granular fill will be placed and compacted to cover void spaces. A granular fill cap will be placed over the landfill, as per the design specifications. The surrounding area will be reshaped, to match existing terrain, and to promote water diversion from the landfill.

Camp Closure

Upon completion of work all camp facilities (including lines, pumps, tanks, etc.) and support equipment will be shut down, disassembled and shipped offsite. Sumps and depressions will be backfilled and regraded, as previously described. The camp lay down area will be regraded to prevent accumulation of surface water and reshaped to match existing contours. Residual fuels and untreated sewage will be packaged and shipped offsite for disposal.

Access Route Closure

All routes developed to facilitate access to work areas will be regraded to prevent accumulation of surface water and reshaped to match existing contours. All temporary culverts installed will be removed upon project completion.

Borrow Source Closure

Waste rock piles and/or borrow material available onsite will be utilized for:

- Landfill construction/closure
- Regrading mine adits, vent raise and exploration trenches

Upon completion of work, all extraction areas (including stockpiles) will be regraded, to prevent accumulation of surface water, and reshaped to match existing contours.

Demobilization

Prior to demobilization, a final inspection will be conducted to ensure all work is complete and that the site is left in a tidy condition.

Hazardous waste and contaminated soil will be packaged in TDG approved containers for offsite disposal. All containers will be marked, in accordance with the TDG Regulations, and manifests will be prepared prior to loading onto the barges.

The Ida Bay barge landing area will be used for project demobilization. Potential need for additional protective measures (i.e. floating silt curtain) will be determined and installed prior to loading activities. Mobile equipment will be “walked” on to the barge using steel ramps. Other equipment will be moved using heavy duty forklift. Spill kits will be available in case of incident and barge support watercraft will be available if required.

Results of 2010 Water Sampling

SENES

SENES Consultants Limited

121 Granton Drive
Unit 12
Richmond Hill, Ontario
Canada L4B3N4

Tel: (905) 764-9380
Fax: (905) 764-9386
E-mail: senes@senes.ca
Web Site: http://www.senes.ca

340807

1980 - 2010 30 YEARS OF ENVIRONMENTAL EXCELLENCE WORLDWIDE SENES Consultants Limited

1 September 2010

Public Works and Government Services Canada
Western Region
Telus Tower North 5th Floor
10025 Jasper Avenue
Edmonton, AB
T5J 1S6

Attention: Mr. Matthew McElwaine, P.Eng.
Environmental Engineer

RE: **Water Sampling as per NWM Licence No. 1BR-ROB0813**
Roberts Bay and Ida Bay Mine Site Remediation Project, Nunavut, Canada

Dear Mr. McElwaine:

Further to the request of Mr. Dele Morakinyo of Indian and Northern Affairs Canada (INAC) we have completed the surface water monitoring program for the six monitoring locations identified in the Nunavut Water Board (NWB) Licence No. 1BR-ROB0813. A summary of the investigation and analytical results is presented herein.

INTRODUCTION

Prior to the start of the remediation works at the Roberts Bay and Ida Bay mine sites an application for a NWB licence was made by INAC. On 8 August 2008 the licence (as noted above) was issued to INAC. Under this licence there is a requirement to establish twelve monitoring stations at the Roberts Bay site only. No monitoring stations were set for the Ida Bay mine site. A summary of the Monitoring Program Stations, as set out in the Water Licence, is presented in the table below:

Monitoring Station	Description	Parameters	Frequency of Monitoring
ROB-1	Water supply intake at un-named pond adjacent to the camp	Volume	Daily
ROB-2	Water supply intake at Roberts Lake	Volume	Daily
ROB-3	Sewage pumped to the Sewage Disposal Facility	Volume	Monthly and annually during remediation
ROB-4	Final Point of Discharge from the Sewage Lagoon	Volume and water quality	Once upon commencement of discharge upon completion of remediation works.
ROB-5	Discharge from the Tailings Pond	Volume and water quality	During periods of flow
ROB-6	The steam flowing south to Roberts Lake	Water quality	Annually after Spring melt
ROB-7	The stream(s) flowing north and west around the bedrock high	Water quality	Annually after Spring melt
ROB-8	Any stream flowing west to Roberts Bay located below the Tailings Pond, Solid Waste Disposal Facility and landfill sites	Water quality	Annually after Spring melt
ROB-9	Roberts Lake	Water quality	Annually after Spring melt
ROB-10	Runoff and leachate from the Solid Waste Disposal Facility/Tailing Pond	Water quality	Annually after Spring melt
ROB-11	Runoff and leachate from the Landfill	Water quality	Annually after Spring melt
ROB-12	Tailings	Temperature	As determined post closure

At the end of the remediation works at Roberts Bay in 2009 a summary of the water usage, and sewage volume and quality discharges, as prescribed for monitoring stations ROB-1 to ROB-5, was provided to the NWB by INAC. A summary of the information provided at that time in presented below.

Monitoring	Station Description	Parameter	Frequency	Comment
ROB-1	Water Supply intake at unnamed Lake adjacent Camp	Volume	Daily	150 m^3 with a daily average of 2.9 m^3/days taken from the Unnamed Lake
ROB-2	Water Supply intake at Roberts Lake	Volume	Daily	No water taken from Roberts Lake.
ROB-3	Sewage pumped to the Sewage Disposal Facility	Volume	Monthly and Annually	July – 34 m^3 August – 117 m^3 Total/Annual – 150 m^3
ROB-4	Final Point Discharge from the Sewage Lagoon	Volume & Water Quality	Once upon commencement of discharge and at completion of remediation	150 m^3 discharged to the ground surface located approximately 60 m northwest of camp.
ROB-5	Discharge from Tailings Pond	Volume & Water Quality	During periods of flow	No water discharged from Tailings Pond and no run off noted during remediation program.

As stated in our memorandum of 25 May 2010 the monitoring of the ROB-6 to ROB-12 locations would be undertaken this year.

The results of the 2010 monitoring work for the ROB-6 to ROB-11 locations are discussed herein. The thermistor readings to be taken from ROB-12 will be downloaded by staff from Franz Environmental (Franz) who has the long-term monitoring contract for Roberts Bay and Ida Bay sites. In order to distinguish between the monitoring program completed by SENES, on behalf of PWGSC and INAC, and the program being undertaken by Franz on behalf of INAC we have designated the SENES monitoring work as the Monitoring Program (During Remediation). For clarity it should be noted that the remediation work was completed at Roberts Bay in 2009, however as the remediation contract at Ida Bay was not completed until 2010 we have undertaken to complete the water monitoring work as prescribed in the NWB licence.

2010 Roberts Bay Monitoring Program (During Remediation)

On 23 August 2010 SENES staff along with Messrs. McElwaine (PWGSC), Morakinyo (INAC) and Vijay Lanji (Quantum – remediation contractor) undertook the final site inspection for the

Roberts Bay and Ida Bay mine site remediation program. As part of this program the monitoring stations ROB-6 to ROB-11 were reviewed and water samples procured where flowing water was identified. The table below is a summary of the observations made by SENES staff at each monitoring location.

Monitoring Station	Coordinates		Sampled (Y/N)	Observations
	Northing	Westing		
ROB-6	68.17529°	106.55570°	Y	Moderate flow to stream.
ROB-7	68.18240°	106.55679°	Y	Low flow of surface water north of former camp area.
ROB-8			N	No evidence of surface water flow in the immediate vicinity of the area to the west of the Solid Waste Disposal Facility.
ROB-9	68.17090°	106.55679°	Y	Lake level consistent with observed levels during 2009 remediation program.
ROB-10			N	No evidence of runoff or seepage from the Solid Waste Disposal Facility.
ROB-11			N	No evidence of runoff or seepage for the former domestic waste landfill area.

Photographs of the respective monitoring stations are attached in Appendix A.

The water samples collected were shipped to the Maxxam Analytics Limited, an environmental laboratory, depot in Yellowknife on 23 August 2010. The samples were subsequently shipped to Calgary for analysis. Each water sample was analysed for the analytes listed in Table 1 of the NWB Licence namely benzene, toluene, ethylbenzene and xylenes, petroleum hydrocarbons on the F1 to F4 range and regulated metals.

The location of each monitoring station were a water sample was procured is presented in plan on Figure 1 attached to this report.

Analytical Results

Comparison of the analytical results to the site specific criteria, listed in Table 1 of the NWB Licence, has determined that all, but one, parameter concentrations are below the specified criteria. A summary of the analytical results are presented in Tables A (BTEX/PHC) and B (Metals) and attached to this report.

The results of the analytical work have determined that the concentration of cadmium (0.022 ug/L) at sample location ROB-7 was marginally above the site criteria of 0.017 ug/L. Given the low flow conditions observed at the time of sampling it is possible that some sediment or fines were captured in the sample collected and thus biased the results. The results of future monitoring programs, to be taken during high water flow periods, should be reviewed against this result to determine if there is a concern with surface water run off to the north and northwest of the site. On the basis of field observations there were no areas of vegetation stress or dead zones and as such it is not believed that the slightly elevated level of cadmium is impacting the local environment.

The levels of cadmium in Roberts Lake located downstream of the ROB-7 sampling location were below the site surface water criteria.

Closure

The results of the 2010 inspection have determined that for all but one parameter result the water quality on site meets the site specific criteria established for the site. The results of the next suite of analysis set for later this season should be reviewed to determine if the marginally elevated level of cadmium is persistent or temporal issue. Given the low flow condition at the time of sampling it is probable that this result will not be repeated during higher flow periods.

Temperature monitoring of the thermistors on site at the Solid Waste Disposal Facility will be undertaken by Franz during their review of the site conditions schedule for late August 2010.

We trust the information contained herein meets the project requirements. Should you have any concerns or comments please do not hesitate to contact the writer.

Yours very truly,

SENES Consultants Limited

Charles Gravelle, P. Eng (NT/NU)
Project Manager

Table A Summary of BTEX and Petroleum Hydrocarbon Analytical Results

Maxxam ID		W47689	W47692	W47693		Site Criteria for Fresh Water
Sampling Date		23/08/2010	23/08/2010	23/08/2010		
	Units	**ROB-6**	**ROB-7**	**ROB-9**	**RDL**	
Extractable Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	0.1	NG
F3 (C16-C34 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	0.1	NG
F4 (C34-C50 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	0.1	NG
Reached Baseline at C50	mg/L	Yes	Yes	Yes		
Volatiles						
Benzene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	0.37
Toluene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	0.002
Ethylbenzene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	0.09
o-Xylene	mg/L	<0.0004	<0.0004	<0.0004	0.0004	NG
m & p-Xylene	mg/L	<0.0008	<0.0008	<0.0008	0.0008	NG
Xylenes (Total)	mg/L	<0.0008	<0.0008	<0.0008	0.0008	0.18
F1 (C6-C10) - BTEX	mg/L	<0.1	<0.1	<0.1	0.1	NG
(C6-C10)	mg/L	<0.1	<0.1	<0.1	0.1	NG

NG - No guideline or criteria

Table B Summary of Metal Analytical Results

Maxxam ID		W47689	W47692	W47693		Site Criteria for Fresh Water
Sampling Date		23/08/2010	23/08/2010	23/08/2010		
	Units	**ROB-6**	**ROB-7**	**ROB-9**	**RDL**	
Low Level Elements						
Total Cadmium (Cd)	ug/L	<0.005	0.022	0.014	0.005	0.017
Total Mercury (Hg)	ug/L	0.01	0.011	0.005	0.002	0.026
Elements						
Total Aluminum (Al)	mg/L	0.064	0.020	0.045	0.001	0.005-0.1
Total Antimony (Sb)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	NG
Total Arsenic (As)	mg/L	0.0003	0.0009	<0.0002	0.0002	0.005
Total Barium (Ba)	mg/L	0.01	0.10	<0.01	0.01	NG
Total Beryllium (Be)	mg/L	<0.001	<0.001	<0.001	0.001	NG
Total Boron (B)	mg/L	<0.02	<0.02	<0.02	0.02	NG
Total Calcium (Ca)	mg/L	19	180	5.8	0.3	NG
Total Chromium (Cr)	mg/L	<0.001	<0.001	0.003	0.001	0.0089
Total Cobalt (Co)	mg/L	<0.0003	0.0004	<0.0003	0.0003	NG
Total Copper (Cu)	mg/L	0.0022	0.0017	0.0017	0.0002	0.002-0.004
Total Iron (Fe)	mg/L	0.14	0.19	0.07	0.06	0.3
Total Lead (Pb)	mg/L	<0.0002	0.0003	0.0002	0.0002	0.001-0.007
Total Lithium (Li)	mg/L	<0.02	<0.02	<0.02	0.02	NG
Total Magnesium (Mg)	mg/L	7.1	78	6.1	0.2	NG
Total Manganese (Mn)	mg/L	0.007	0.14	0.006	0.004	NG
Total Molybdenum (Mo)	mg/L	<0.0002	0.0008	0.0003	0.0002	NG
Total Nickel (Ni)	mg/L	0.0019	0.0020	0.0009	0.0005	0.025-0.15
Total Phosphorus (P)	mg/L	<0.1	<0.1	<0.1	0.1	NG
Total Potassium (K)	mg/L	0.8	4.6	2.0	0.3	NG
Total Selenium (Se)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	0.001
Total Silicon (Si)	mg/L	3.9	4.2	0.5	0.1	NG
Total Silver (Ag)	mg/L	<0.0001	<0.0001	<0.0001	0.0001	0.0001
Total Sodium (Na)	mg/L	15	350	31	0.5	NG
Total Strontium (Sr)	mg/L	0.07	0.85	0.04	0.02	NG

Table B Summary of Metal Analytical Results

Maxxam ID		W47689	W47692	W47693		Site Criteria for Fresh Water
Sampling Date		23/08/2010	23/08/2010	23/08/2010		
	Units	**ROB-6**	**ROB-7**	**ROB-9**	**RDL**	
Total Sulphur (S)	mg/L	1.5	42	1.6	0.2	NG
Total Thallium (Tl)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	0.0008
Total Tin (Sn)	mg/L	<0.001	<0.001	<0.001	0.001	NG
Total Titanium (Ti)	mg/L	0.001	<0.001	<0.001	0.001	NG
Total Uranium (U)	mg/L	<0.0001	0.0009	<0.0001	0.0001	NG
Total Vanadium (V)	mg/L	<0.001	<0.001	<0.001	0.001	NG
Total Zinc (Zn)	mg/L	<0.003	0.003	0.009	0.003	0.03

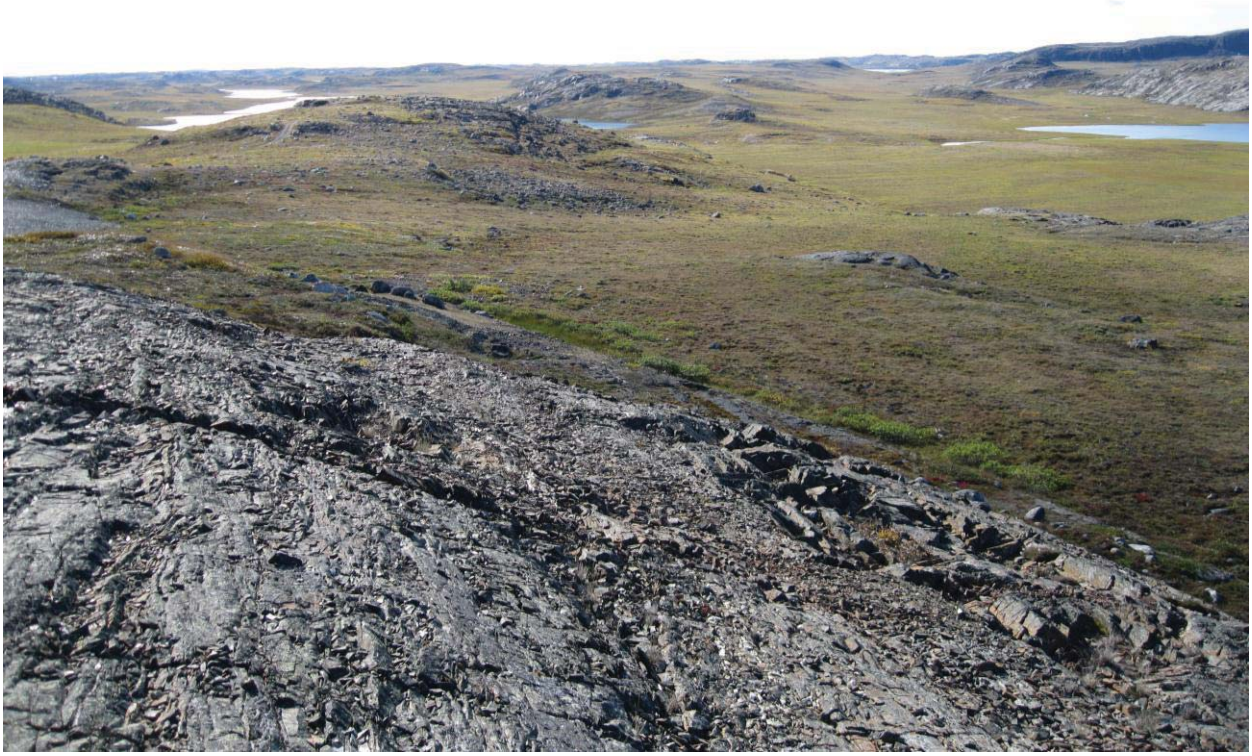
NG - No guideline or criteria

APPENDIX A

PHOTOGRAPHS

Photograph No. 1: ROB-6 monitoring station

Photograph No. 2: ROB-7 monitoring station



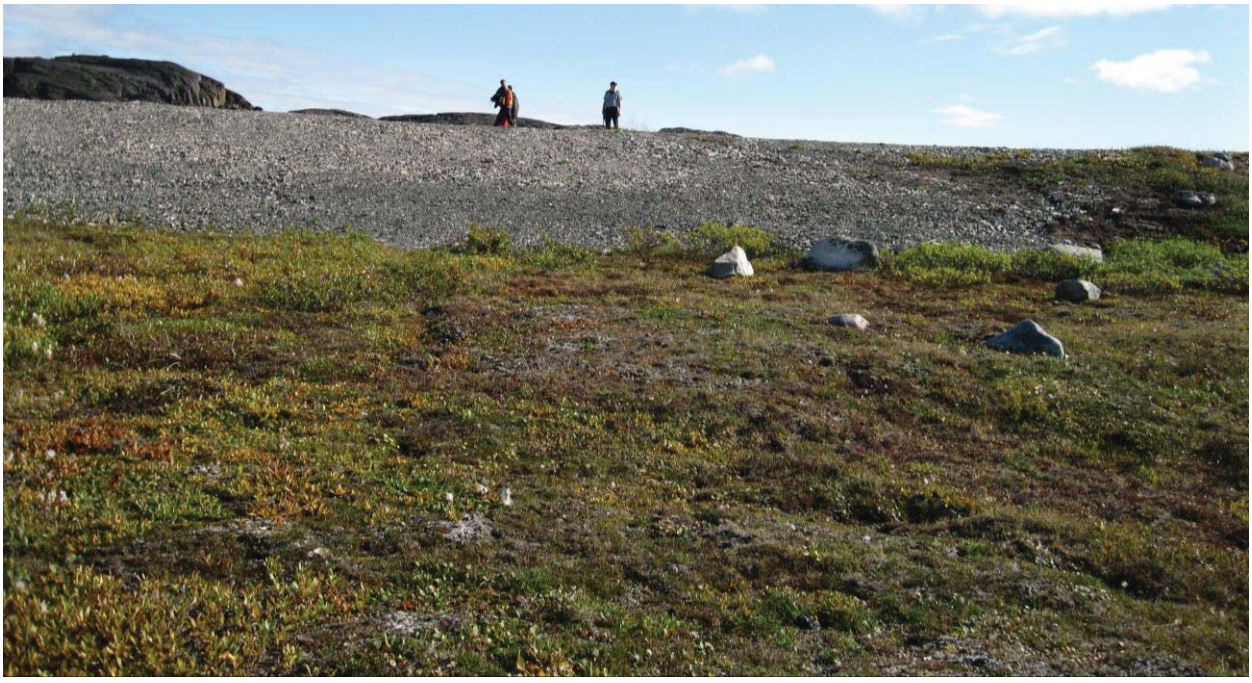
Photograph No. 3: ROB-8 monitoring station - no water at this location (looking south)

Photograph No. 4: ROB-8 monitoring station - no water at this location (looking south)

Photograph No. 5: ROB-9 monitoring station - Roberts Lake

Photograph No. 6: ROB-10 monitoring station - no water at this location (looking northwest at downstream toe of Solid Waste Management Facility

Photograph No. 7: ROB-10 monitoring station - no water at this location (looking west along southern limit of the Solid Waste Management Facility



Photograph No. 8: ROB-11 monitoring station - no run-off from the former domestic waste landfill location.

Attention: CHARLES F. GRAVELLE
SENES CONSULTANTS LIMITED
121 GRANTON DRIVE, UNIT 12
RICHMOND HILL, ON
CANADA L4B 3N4

Report Date: 2010/09/02

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B076126
Received: 2010/08/24, 10:00

Sample Matrix: Water
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 in Water by HS GC/MS	3	N/A	2010/08/29	CAL SOP-00190	EPA 8260 C / CCME
Cadmium - low level CCME (Total)	3	2010/08/25	2010/08/31	CAL SOP-00191	EPA SW-846 6020A
CCME Hydrocarbons (F2-F4 in water)	3	2010/08/27	2010/08/28	CAL SOP-00086 AB WI-00017	EPA3510C/CCME PHCCWS
Mercury - Low Level (Total)	3	2010/08/31	2010/08/31	CAL SOP-00007	EPA 1631
Elements by ICP - Total	3	2010/08/30	2010/08/30	AB SOP-00042	EPA 200.7
Elements by ICPMS - Total	2	2010/08/30	2010/08/30	AB SOP-00043	EPA 200.8
Elements by ICPMS - Total	1	2010/08/30	2010/08/31	AB SOP-00043	EPA 200.8

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

Encryption Key

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

LISA MCMANES, Sample Reception Supervisor
Email: lisa.mcmanes@maxxamanalytics.com
Phone# (403) 291-3077

==========

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

Total cover pages: 1

SENES CONSULTANTS LIMITED

Maxxam Job #: B076126
Report Date: 2010/09/02

AT1 BTEX AND F1-F4 IN WATER (WATER)

Maxxam ID		W47689	W47692	W47693		
Sampling Date		2010/08/23	2010/08/23	2010/08/23		
	Units	**ROB-6**	**ROB-7**	**ROB-9**	**RDL**	**QC Batch**
Extractable Hydrocarbons						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	0.1	4214701
F3 (C16-C34 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	0.1	4214701
F4 (C34-C50 Hydrocarbons)	mg/L	<0.1	<0.1	<0.1	0.1	4214701
Reached Baseline at C50	mg/L	YES	YES	YES		4214701
Surrogate Recovery (%)						
O-TERPHENYL (sur.)	%	100	86	96		4214701
Volatiles						
Benzene	ug/L	<0.4	<0.4	<0.4	0.4	4210249
Toluene	ug/L	<0.4	<0.4	<0.4	0.4	4210249
Ethylbenzene	ug/L	<0.4	<0.4	<0.4	0.4	4210249
o-Xylene	ug/L	<0.4	<0.4	<0.4	0.4	4210249
m & p-Xylene	ug/L	<0.8	<0.8	<0.8	0.8	4210249
Xylenes (Total)	ug/L	<0.8	<0.8	<0.8	0.8	4210249
F1 (C6-C10) - BTEX	ug/L	<100	<100	<100	100	4210249
(C6-C10)	ug/L	<100	<100	<100	100	4210249
Surrogate Recovery (%)						
4-BROMOFLUOROBENZENE (sur.)	%	92	95	93		4210249
D4-1,2-DICHLOROETHANE (sur.)	%	86	86	87		4210249
D8-TOLUENE (sur.)	%	98	102	96		4210249

RDL = Reportable Detection Limit

SENES CONSULTANTS LIMITED

Maxxam Job #: B076126
Report Date: 2010/09/02

REGULATED METALS (CCME/AT1) - TOTAL

Maxxam ID		W47689	W47692	W47693		
Sampling Date		2010/08/23	2010/08/23	2010/08/23		
	Units	**ROB-6**	**ROB-7**	**ROB-9**	**RDL**	**QC Batch**
Low Level Elements						
Total Cadmium (Cd)	ug/L	<0.005	0.022	0.014	0.005	4207422
Elements						
Total Aluminum (Al)	mg/L	0.064	0.020	0.045	0.001	4221013
Total Antimony (Sb)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	4221013
Total Arsenic (As)	mg/L	0.0003	0.0009	<0.0002	0.0002	4221013
Total Barium (Ba)	mg/L	0.01	0.10	<0.01	0.01	4219789
Total Beryllium (Be)	mg/L	<0.001	<0.001	<0.001	0.001	4221013
Total Boron (B)	mg/L	<0.02	<0.02	<0.02	0.02	4219789
Total Calcium (Ca)	mg/L	19	180	5.8	0.3	4219789
Total Chromium (Cr)	mg/L	<0.001	<0.001	0.003	0.001	4221013
Total Cobalt (Co)	mg/L	<0.0003	0.0004	<0.0003	0.0003	4221013
Total Copper (Cu)	mg/L	0.0022	0.0017	0.0017	0.0002	4221013
Total Iron (Fe)	mg/L	0.14	0.19	0.07	0.06	4219789
Total Lead (Pb)	mg/L	<0.0002	0.0003	0.0002	0.0002	4221013
Total Lithium (Li)	mg/L	<0.02	<0.02	<0.02	0.02	4219789
Total Magnesium (Mg)	mg/L	7.1	78	6.1	0.2	4219789
Total Manganese (Mn)	mg/L	0.007	0.14	0.006	0.004	4219789
Total Molybdenum (Mo)	mg/L	<0.0002	0.0008	0.0003	0.0002	4221013
Total Nickel (Ni)	mg/L	0.0019	0.0020	0.0009	0.0005	4221013
Total Phosphorus (P)	mg/L	<0.1	<0.1	<0.1	0.1	4219789
Total Potassium (K)	mg/L	0.8	4.6	2.0	0.3	4219789
Total Selenium (Se)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	4221013
Total Silicon (Si)	mg/L	3.9	4.2	0.5	0.1	4219789
Total Silver (Ag)	mg/L	<0.0001	<0.0001	<0.0001	0.0001	4221013
Total Sodium (Na)	mg/L	15	350	31	0.5	4219789
Total Strontium (Sr)	mg/L	0.07	0.85	0.04	0.02	4219789
Total Sulphur (S)	mg/L	1.5	42	1.6	0.2	4219789
Total Thallium (Tl)	mg/L	<0.0002	<0.0002	<0.0002	0.0002	4221013
Total Tin (Sn)	mg/L	<0.001	<0.001	<0.001	0.001	4221013
Total Titanium (Ti)	mg/L	0.001	<0.001	<0.001	0.001	4221013
Total Uranium (U)	mg/L	<0.0001	0.0009	<0.0001	0.0001	4221013
Total Vanadium (V)	mg/L	<0.001	<0.001	<0.001	0.001	4221013
Total Zinc (Zn)	mg/L	<0.003	0.003	0.009	0.003	4221013

RDL = Reportable Detection Limit

SENES CONSULTANTS LIMITED

Maxxam Job #: B076126
Report Date: 2010/09/02

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Maxxam ID		W47689	W47692	W47693		
Sampling Date		2010/08/23	2010/08/23	2010/08/23		
	Units	**ROB-6**	**ROB-7**	**ROB-9**	**RDL**	**QC Batch**
Low Level Elements						
Total Mercury (Hg)	ug/L	0.010	0.011	0.005	0.002	4221795

RDL = Reportable Detection Limit

Maxxam Job #: B076126
Report Date: 2010/09/02

Package 1	15.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

General Comments

SENES CONSULTANTS LIMITED

Maxxam Job #: B076126
Report Date: 2010/09/02

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
4210249	4-BROMOFLUOROBENZENE (sur.)	2010/08/28	100	70 - 130	96	70 - 130	96	%		
4210249	D4-1,2-DICHLOROETHANE (sur.)	2010/08/28	78	70 - 130	83	70 - 130	86	%		
4210249	D8-TOLUENE (sur.)	2010/08/28	88	70 - 130	96	70 - 130	99	%		
4210249	Benzene	2010/08/29	75	70 - 130	91	70 - 130	<0.4	ug/L	NC	40
4210249	Toluene	2010/08/29	81	70 - 130	98	70 - 130	<0.4	ug/L	NC	40
4210249	Ethylbenzene	2010/08/29	86	70 - 130	99	70 - 130	<0.4	ug/L	NC	40
4210249	o-Xylene	2010/08/29	94	70 - 130	101	70 - 130	<0.4	ug/L	NC	40
4210249	m & p-Xylene	2010/08/29	90	70 - 130	102	70 - 130	<0.8	ug/L	NC	40
4210249	(C6-C10)	2010/08/29			85	70 - 130	<100	ug/L	NC	40
4210249	Xylenes (Total)	2010/08/29					<0.8	ug/L	NC	40
4210249	F1 (C6-C10) - BTEX	2010/08/29					<100	ug/L	NC	40
4214701	F2 (C10-C16 Hydrocarbons)	2010/08/28	89	70 - 130	99	70 - 130	<0.1	mg/L	NC	40
4214701	F3 (C16-C34 Hydrocarbons)	2010/08/28	91	70 - 130	99	70 - 130	<0.1	mg/L	NC	40
4214701	F4 (C34-C50 Hydrocarbons)	2010/08/28	87	70 - 130	99	70 - 130	<0.1	mg/L	NC	40
4214701	O-TERPHENYL (sur.)	2010/08/28	89	70 - 130	102	70 - 130	100	%		
4219789	Total Barium (Ba)	2010/08/30	103	80 - 120	101	80 - 120	<0.01	mg/L	NC	20
4219789	Total Boron (B)	2010/08/30	118	80 - 120	116	80 - 120	<0.02	mg/L	NC	20
4219789	Total Calcium (Ca)	2010/08/30	106	80 - 120	104	80 - 120	<0.3	mg/L	NC	20
4219789	Total Iron (Fe)	2010/08/30	108	80 - 120	107	80 - 120	<0.06	mg/L	NC	20
4219789	Total Lithium (Li)	2010/08/30	109	80 - 120	108	80 - 120	<0.02	mg/L	NC	20
4219789	Total Magnesium (Mg)	2010/08/30	107	80 - 120	106	80 - 120	<0.2	mg/L	NC	20
4219789	Total Manganese (Mn)	2010/08/30	107	80 - 120	105	80 - 120	<0.004	mg/L	NC	20
4219789	Total Phosphorus (P)	2010/08/30	105	80 - 120	105	80 - 120	<0.1	mg/L	NC	20
4219789	Total Potassium (K)	2010/08/30	107	80 - 120	105	80 - 120	<0.3	mg/L	NC	20
4219789	Total Silicon (Si)	2010/08/30	120	80 - 120	119	80 - 120	<0.1	mg/L	NC	20
4219789	Total Sodium (Na)	2010/08/30	107	80 - 120	105	80 - 120	<0.5	mg/L	NC	20
4219789	Total Strontium (Sr)	2010/08/30	106	80 - 120	104	80 - 120	<0.02	mg/L	NC	20
4219789	Total Sulphur (S)	2010/08/30					<0.2	mg/L	NC	20
4221013	Total Aluminum (Al)	2010/08/30	118	80 - 120	110	80 - 120	<0.001	mg/L	NC	20
4221013	Total Antimony (Sb)	2010/08/30	103	80 - 120	107	80 - 120	<0.0002	mg/L	NC	20
4221013	Total Arsenic (As)	2010/08/30	86	80 - 120	90	80 - 107	<0.0002	mg/L	NC	20
4221013	Total Beryllium (Be)	2010/08/30	117	80 - 120	82	80 - 120	<0.001	mg/L	NC	20
4221013	Total Chromium (Cr)	2010/08/30	96	80 - 120	101	80 - 120	<0.001	mg/L	NC	20
4221013	Total Cobalt (Co)	2010/08/30	99	80 - 120	102	80 - 120	<0.0003	mg/L	NC	20
4221013	Total Copper (Cu)	2010/08/30	92	80 - 120	97	80 - 120	<0.0002	mg/L	NC	20
4221013	Total Lead (Pb)	2010/08/30	96	80 - 120	102	80 - 115	<0.0002	mg/L	NC	20
4221013	Total Molybdenum (Mo)	2010/08/30	101	80 - 120	105	80 - 120	<0.0002	mg/L	NC	20
4221013	Total Nickel (Ni)	2010/08/30	95	80 - 120	101	80 - 120	<0.0005	mg/L	NC	20
4221013	Total Silver (Ag)	2010/08/30	102	80 - 120	107	80 - 120	<0.0001	mg/L	NC	20
4221013	Total Thallium (Tl)	2010/08/30	94	80 - 120	100	80 - 120	<0.0002	mg/L	NC	20

SENES CONSULTANTS LIMITED

Maxxam Job #: B076126
Report Date: 2010/09/02

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits
4221013	Total Tin (Sn)	2010/08/30	100	80 - 120	105	80 - 120	<0.001	mg/L	NC	20
4221013	Total Titanium (Ti)	2010/08/30	105	80 - 120	105	80 - 120	<0.001	mg/L	NC	20
4221013	Total Uranium (U)	2010/08/30	97	80 - 120	98	80 - 120	<0.0001	mg/L	NC	20
4221013	Total Vanadium (V)	2010/08/30	101	80 - 120	105	80 - 120	<0.001	mg/L	NC	20
4221013	Total Zinc (Zn)	2010/08/30	78	75 - 125	85	75 - 125	<0.003	mg/L	NC	20
4221013	Total Selenium (Se)	2010/08/30			96	80 - 120	<0.0002	mg/L	NC	20
4221795	Total Mercury (Hg)	2010/08/31	104	80 - 120	93	80 - 120	<0.002	ug/L	NC	20

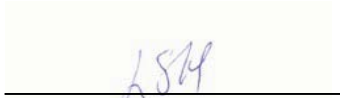
N/A = Not Applicable
RPD = Relative Percent Difference
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix to which a known amount of the analyte has been added. Used to evaluate analyte recovery.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B076126

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

JENNIFER LO, Senior Analyst, Organics Department



LUBA SHYMUSHOVSKA, Senior Analyst, Organic Department

RON VENZI, Scientific Specialist

==========

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

Maxxam Analytics

Calgary: 4000 19st St. NE, T2E 6P8. Ph: (403) 291-3077, Fax: (403) 735-2240, Toll free: (800) 386-7247
Edmonton: 9331 - 48 Street, T6B 2R4. Ph: (780) 465-1212, Fax: (780) 450-4187, Toll free: (877) 465-8889

Chain of Custody

Page: 1 of 1

Invoice To: Require Report? Yes [X] No [ ]	
Company Name:	
Contact Name:	
Address:	
Prov:	PC:
Contact #s: Ph:	Fax:

Report To:	
CHARLES GRAVELLE	
SLENES	
cgravelle@dcsltd.ca	
Prov: ONTARIO	PC:
Ph: 9058825984	Fax: 9058828962

PO# / AFE#:	
Quotation #:	
Project #:	
Proj. Name:	
Location:	
Sampler's Initials:	

DETECTION LIMIT REQUIREMENTS:

Check the applicable criterion and indicate land use

- [ ] AT1
- [ ] CCME ✓
- [ ] OTHER

REPORT DISTRIBUTION:

EMAIL ADDRESS(S): cgravelle@dcsltd.ca

SERVICE REQUESTED:

- [ ] RUSH (Please ensure you contact the lab to reserve)
  Date Required:
- [X] REGULAR Turnaround (5 to 7 Days)

	Sample Identification	Matrix S/W	Date & Time Sampled Year/Month/Day	SOILS: BTEX F1-F4	Sieve (75 micron)	Salinity 4	Regulated Metals (CCME / AT1)1	Assessment ICP Metals2	Paint Filter ☐ Flashpoint ☐ pH (1:1)	TCLP ☐ BTEX ☐ Metals ☐	WATERS: ☐ VOCs ☐ BTEX F1 ☐ BTEX F1-F2	☒ BTEX F1-F4	Routine Water Package ☐ Turb ☐ F	REGULATED METALS (CCME / AT1)3: Total ☐ Preserved ☒ Not Preserved	Dissolved ☐ Preserved ☐ Filtered	☐ Not Preserved ☐ Not Filtered	Mercury: ☒ Total ☐ Dissolved	☐ Ammonia ☐ TKN ☐ COD	☐ TOC ☐ DOC	OTHER TEST(S)	*HOLD for 60 Days	# of Containers Submitted
1	ROB-6	W	2010/8/23									X		X			X					
2	ROB-7											X		X			X					
3	~~ROB-8~~																					
4	ROB-9											X		X			X					
5	~~ROB-10~~																					
6	~~ROB-11~~	~~W~~	~~2010/8/23~~																	ARRIVED AT DEPOT:		
7																				AUG 2 2010		
8																						
9	FOR EACH STATION																			TEMP: 10.1 / 5.7 / 6.1		
10	3 - VIALS NO PRESERVATIVE																			Updated 10:35		
11	2 - 250ml PHC W PRESERVATIVE																					
12	1 - 250ml METALS NO PRESERVATIVE																			+ 1 - 500ml plastic bottle NO PRESERVATIVE		

* All samples are held for 60 calendar days after sample receipt. For long term storage please contact your project manager.

Maxxam Job #: 07-6126

Relinquished By: CHARLES GRAVELLE Date/Time: 23/8/2010

Sign and Print:

COMMENTS/SPECIAL INSTRUCTIONS:

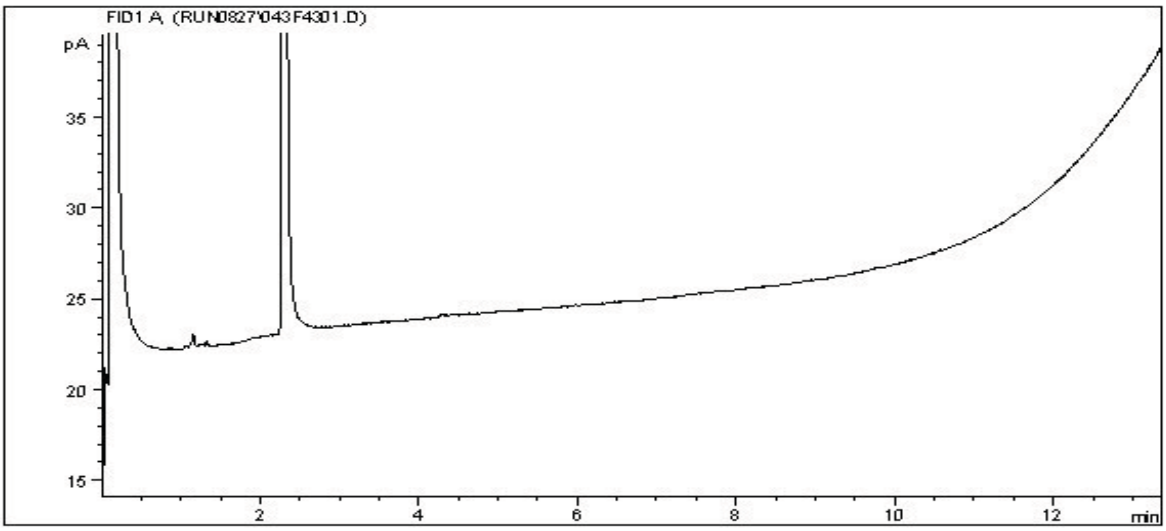
# JARS USED & NOT SUBMITTED	Received By	Temperature	Ice
	RECEIVED 0703 AUG 2 3 2010		Y
	CUSTODY SEAL YES / NO		

SENES CONSULTANTS LIMITED

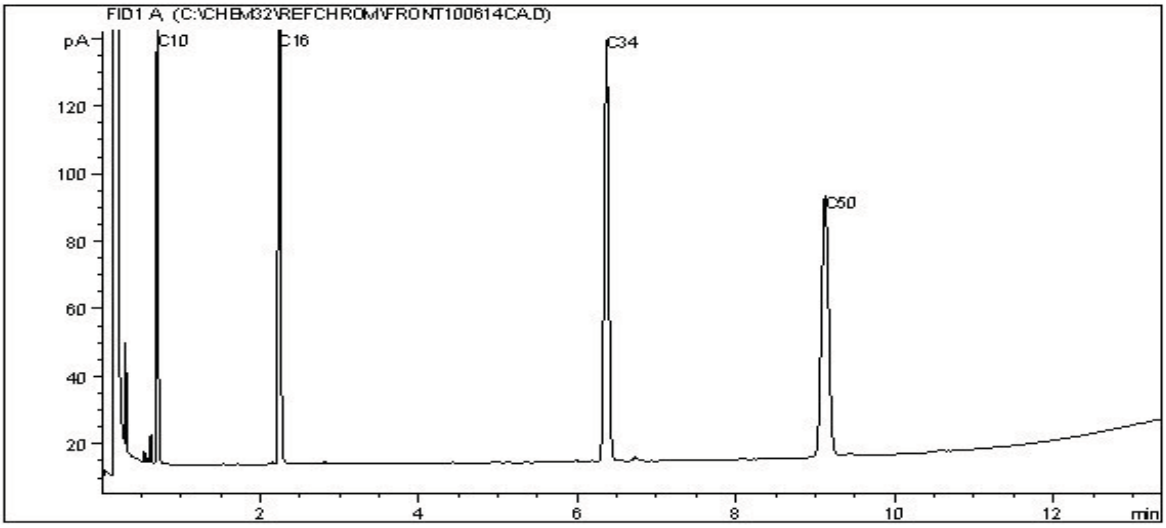
Report Date: 2010/09/02
Maxxam Job #: B076126
Maxxam Sample: W47689

Client ID: ROB-6

CCME Hydrocarbons (F2-F4 in water) Chromatogram



Carbon Range Distribution - Reference Chromatogram

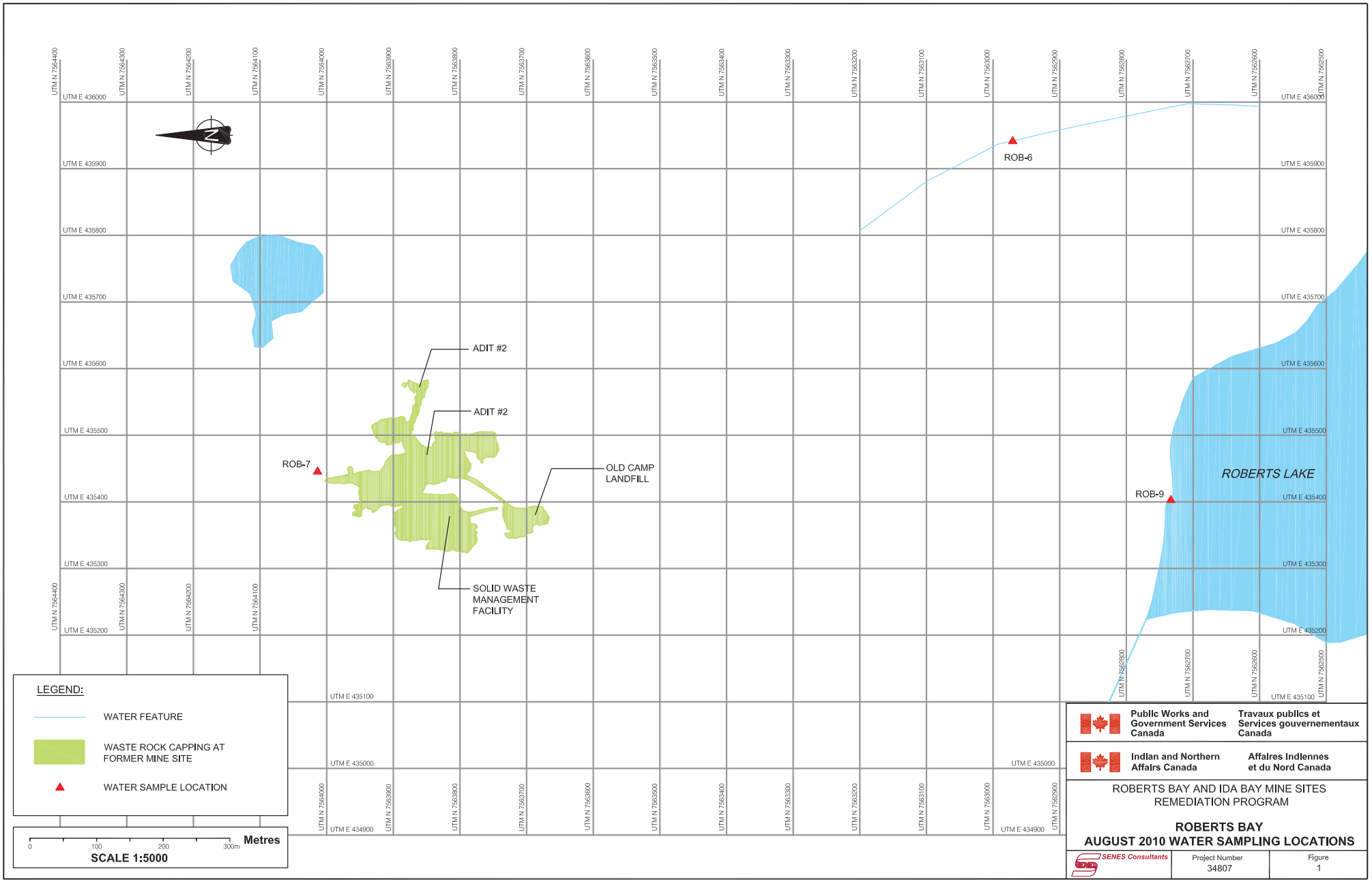


TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Page 1 of 1

Note: This information is provided for reference purposes only. Should detailed chemist intrepretation or fingerprinting be required to please contact the laboratory.



Mar 07, 2011 - 3:48pm - USER info
Z:\34000 Series\34807 Roberts Bay\Arc\34807 PWGSC ROBERTS BAY AND IDA BAY MINES\34807 PWGSC Fig 1.mxd

Water Tracking at Unnamed Pond

SENES

Roberts Lake Potable and Waste Water Tracking

Unnamed Pond

	Day	Date	Tank Fill (Gallons)	Convert to Litres	Meter Reading	Convert to Litres
1	Thur	16-Jul				
2	Fri	17-Jul				
3	Sat	18-Jul				
4	Sun	19-Jul				
5	Mon	20-Jul	2,700	12,274		
6	Tue	21-Jul				
7	Wed	22-Jul				
8	Thur	23-Jul				
9	Fri	24-Jul			2.0	2,000
10	Sat	25-Jul				
11	Sun	26-Jul			7.0	7,000
12	Mon	27-Jul				
13	Tue	28-Jul			13.5	13,500
14	Wed	29-Jul				
15	Thur	30-Jul				
16	Fri	31-Jul			21.7	21,700
17	Sat	01-Aug				
18	Sun	02-Aug			29.0	29,000
19	Mon	03-Aug				
20	Tue	04-Aug				
21	Wed	05-Aug			38.7	38,700
22	Thur	06-Aug				
23	Fri	07-Aug				
24	Sat	08-Aug				
25	Sun	09-Aug			55.0	55,000
26	Mon	10-Aug				
27	Tue	11-Aug				
28	Wed	12-Aug			63.0	63,000
29	Thur	13-Aug				
30	Fri	14-Aug				
31	Sat	15-Aug			89.0	89,000
32	Sun	16-Aug				
33	Mon	17-Aug				
34	Tue	18-Aug				
35	Wed	19-Aug				
36	Thur	20-Aug				
37	Fri	21-Aug				
38	Sat	22-Aug				
39	Sun	23-Aug				
40	Mon	24-Aug				
41	Tue	25-Aug				
42	Wed	26-Aug				
43	Thur	27-Aug				
44	Fri	28-Aug				
45	Sat	29-Aug			139.0	139,000
46	Sun	30-Aug				
47	Mon	31-Aug				
48	Tue	01-Sep				
49	Wed	02-Sep				
50	Thur	03-Sep				
51	Fri	04-Sep				
52	Sat	05-Sep				
					total	151,274

July water 33,974

Aug water 117,300.0

Notes:
Water was pumped in intervals from unnamed pond to holding tanks. Water treatment system drew water from the holding tanks.

2909.11538

Health and Safety Report

SENES

INCIDENT INVESTIGATION REPORT

Serious and critical incidents must be reported **immediately** to your local Regional EH&S Manager and the Corporate Claims Specialist via telephone (416-705-2625).

The Site Supervisor/Manager must complete this report.

1. LOCATION

Division: ☒ Quantum Remediation ☐ Murray Demolition ☐ Thomson Metals ☐ Echelon
☐ Quantum Hazmat ☐ Murray Abatement ☐ Thomson Waste Transfer

Project #: S070198 Address: Roberts Bay Province: Nunavit

Worker's Supervisors name: John Weigle Phone: (780-504-6272)

Incident reported to Supervisor/Manager Date: July-26-09 Time: 1150 ☒am ☐pm

2. INCIDENT DETAILS complete indicated pages

Type of incident: ☒ Injury or Illness (1,2,3,4) ☐ Property Damage (1,3,4)
☐ Equipment Failure (1,3,4) ☐ Fire(1,3,4) ☐ Other:

Person directly involved in incident: Jorgan Aitaok Job title: Wild Life Monitor

Incident date: July-26-09 Time: 11:50 ☒am ☐pm

Incident reported to: John DeSchutter Date: July-26-09 Time: 11:55 ☒am ☐pm

If incident outdoors, include weather conditions: Windy and over cast

Witness name: _____ Phone #: ( ) Statement attached ☐yes ☐ no

Witness name: _____ Phone #: ( ) Statement attached ☐yes ☐ no

Witness name: Phone #: ( ) Statement attached ☐yes ☐ no

3. EVENTS LEADING UP TO AND DESCRIPTION OF INCIDENT (Include description of damage and losses)

Describe incident facts & events, include: What, When, Why, Who, and How – When possible include timelines.

At 11:55 am I (John DeSchutter) was sitting in the mess hall having a coffee when the camp carpenter called me to the boot room. Upon arriving at the boot room I saw Jorgan with his hand to his mouth and blood coming out of his mouth. I asked what had happened and Jorgan said he started to caugh up blood. He said he cought a whiff of smoke from the wood fire and satrted to caught.I than called the paramedic. The plane was in unloading supplies so I called Gavin who was at the plane and put the plane on standby till I released it. I than asked Jorgan if had noticed anything previously and he said he felt something funny last evening. I think he said he was 66 years old and an ex smoker. The Paramedic came with 2 min. and they went to the first aid room and Ryan examined him. After the examination I asked if he could fly by himself or if Ryan had to go . Ryan said he could travel by himself so I sent Jorgan home to Cambridge to go directly to the hospital to have a doctor to look at him as a precautionary measure. Jorgan said this has happened before about 5 years ago.

(If more space is needed, attach additional sheet). The information I have provided either in my own writing or verbally for the purpose of this report is true and correct.

4. INJURED PERSON DETAILS (if no injury, skip to next section)

INCIDENT INVESTIGATION REPORT

Injured person's name: Jorgan Aitaok Home/cell phone #: (867-) 983-2414

Type of injury: ☐ Medical Aid, transported by: Air Tindy To: Cambridge Bay

☐ First Aid, provided by: _____

Employer Name, if 3rd party: _____

Preferred language: English

Hours of work on day of injury from: 7:00 ☒am ☐pm to: 7:00pm ☐am ☒ pm

Next scheduled work date; Start time: 7:00 ☒am ☐pm Duration of shift: 12hrs

Will the worker be absent following the day of the injury? ☐ No ☐ Unknown ☒ Yes: _____

Will other duties be assigned because of injury? ☒ No ☐ Yes, please explain: _____

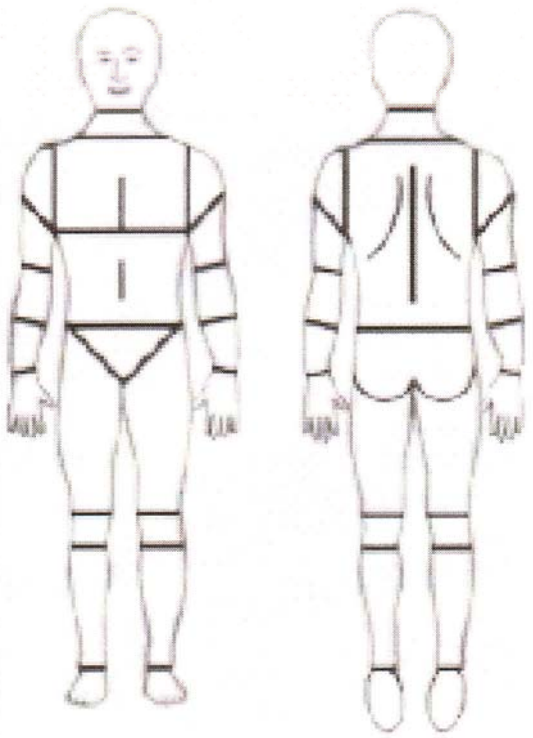
Has the worker ever experienced any prior similar or related problem, injury or condition? ☐No ☒Unknown ☐ Yes : _____

Length of time at present job: 3.5days Province where injury occurred: Nunavit

Was any individual who does not work for QMLP partially or totally responsible for injury? ☒ No ☐ Yes, Provide details - _____

Worker's task at time of injury: Helper Was this task routine? ☒ Yes ☐ No

Site supervisor must ensure the workers has signed a Modified Work Letter and has provided the worker with a Functional Abilities form to be filled out by the treating Medical Professional. - (**Prior** to first visit to clinic/hospital).

Type of Incident:	**Body Part injured** (Please check all that apply)		**Mark injured area:**
☐ Struck/Caught ☐ Overexertion/strain ☐ Repetition ☐ Fall ☐ Fire/Explosion ☐ Harmful Substances/ ☐ Assault ☐ Slip or trip ☐ Lifting ☐ Environmental ☐ Spill ☒ Other: Previous	☐ Head ☐ Face ☐ Eye(s) ☐ Ear(s) ☐ Teeth	☐ Neck ☐ Chest ☐ Upper Back ☐ Lower Back ☐ Abdomen	
		Left **Right**	
	☐ Shoulder	☐ ☐	
	☐ Arm	☐ ☐	
	☐ Elbow	☐ ☐	
	☐ Forearm	☐ ☐	
	☐ Wrist	☐ ☐	
	☐ Hand	☐ ☐	
	☐ Finger (s)	☐ ☐	
	☐ Hip	☐ ☐	
	☐ Thigh	☐ ☐	
	☐ Knee	☐ ☐	
	☐ Lower leg	☐ ☐	
	☐ Ankle	☐ ☐	
	☐ Foot	☐ ☐	
	☐ Toe(s)	☐ ☐	
	☒ Other: Lungs		

INCIDENT INVESTIGATION REPORT

5. ROOT CAUSE ANALYSIS – DIRECT AND UNDERLYING

Identify the unsafe acts/conditions and underlying causes directly related to the incident (refer to Supervisors Root Cause Analysis Reference Sheet)

Unsafe Acts: none

Unsafe Conditions: none

Immediate Cause: Possiably a prexisting condition

Underlying Causes: Old age (66 yrs old) and ex smoker

Include a diagram/sketch (if applicable)

INCIDENT INVESTIGATION REPORT

6. EVALUATION OF RISK

Loss Severity Potential: ☐ Major ☐ Serious ☐ Minor

Probable Recurrence Rate: ☐ Frequent ☐ Occasional ☐ Rare

7. CORRECTIVE ACTIONS PLAN to prevent reoccurrence of similar incidents. Recommendations must be specific, constructive, get at root causes and take into account contributing factors. Recommendations should correct deficiencies including any required training and proper supervision of the task(s).

List all cause(s) of Injury/Loss	**Suggested Corrective Actions** (at least one for each cause):	**Person responsible**	**Date for completion** (dd/mm/yyyy)
1.			
2.			
3.			
4.			
5.			
6.			
7.			

8. SIGNATURES:

This form was completed by:

Supervisor Name: John DeSchutter

Signature: _____ Date: July-26-09

Other - Name: _____ Title: _____

Signature: _____ Date: _____

Fax completed form to 416-253-9793 within 24 hours of incident & phone Regional EH&S Manager immediately.

If injury, include copies of all relevant information (Dr.'s notes, FAF form, pictures, sketches etc.)

If you have any questions call Corporate Claims at 416-705-2625.

Site Supervisor to distribute report to: ☐ Corporate Claims Specialist ☒ EH&S Regional Manager

H&S Regional Manager to distribute report to: ☐ JHSC or Worker Rep. ☒ Operations Manager ☒ Project Manager ☒ Regional Operations Mgr /VP

QUANTUM MURRAY

INCIDENT INVESTIGATION REPORT

ADDITIONAL INCIDENT ANALYSIS

To be completed by EHS personnel when required.

9. ROOT CAUSE ANALYSIS – DIRECT AND UNDERLYING

Identify the unsafe acts/conditions and underlying causes directly related to the incident (refer to Supervisors Root Cause Analysis Reference Sheet)

ANALYSIS: The Task – review the actual work procedure being used at the time of the incident.

Comments:

ANALYSIS: Materials / Equipment – to seek out possible results from materials / equipment used to perform the task.

Comments:

ANALYSIS: The Environment – the physical environment, and especially sudden changes are factors that need to be identified as possible contributing causes.

Comments: High winds, Cool and a wood fire burning.

ANALYSIS: The Worker – the physical and mental condition of individuals directly involved in the incident must be explored, as part of an investigation process.

Comments: The worker is over 65 and an ex smoker.

ANALYSIS: The Management System – Management holds the legal responsibility for the safety of the workplace. The role of the supervisors and management and the role or presence of management systems must always be considered in an incident investigation. Failures of management systems may be direct or indirect factors, which must be explored as part of an investigation process.

Comments: None

SIGNATURES

This form was completed by: Name: John D. DeSchotten

Signature: _____ Date: Jul 26/09

QUANTUM MURRAY
REMEDIATION SERVICES

Sequence Number: R.B. 07

Note: Sequence Number to be assigned by Regional H & S Coordinator.
Number will be as follows:
Region/Year – Type and Number, i.e.
WR2005 – FA001 – Western Region / Year 2005-Furst Aid # 1.

First Aid Treatment Record

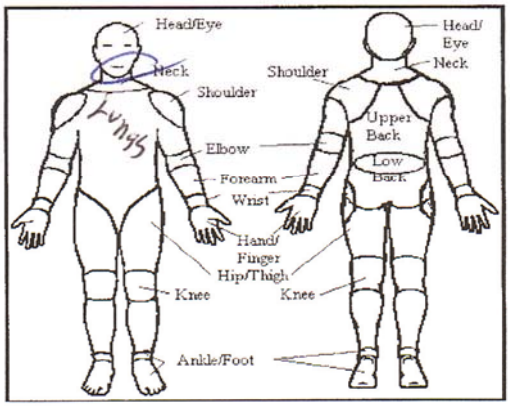
Name:	Jorgan (Sr) Aitock	Date Injury / Illness:	26-July-2009
Occupation:	Wildlife monitor	Time Injury / Illness:	10:55 AM PM est.
Project Number:	SOB0198	Project Address:	Roberts Bay, NU.
Date / Time Reported to Supervisor:		26-July-2009, Date	11:00 hrs. Time est.
Date / Time Reported to First Aider (FA):		26-July-2009. Date	11:05 hrs. Time est.
FA Qualifications	PCP-IU/ACP-S (EMA-LB).		

Description of how the injury occurred – what happened? (brief):
pt. performing manual labour around wood (open) burning fire, pt. @ some point took "a face full" of smoke → coughing fit → hemoptysis → seek FA.

Name of Witnesses:
1. none.
2.
3.

Description of injuries/illness – Nature of Injury or Illness *(signs and symptoms)* noted by the FA:

minor amount of hemoptysis (<3cc seen),
Ø C/P, Ø SOB, pt otherwise asymptomatic



Describe treatment provided to Patient:
V/S - 150/94, HR 110, RR 16 easy, SpO_2 98%, Pupils =, reactive, Skin D/S/D, GCS 15.
Cx exam - a/e = bases c/a, Ø adventia. Ø C/P on insp.
Pt. cleared by me for un supervised flight back to Cambridge Bay, NU.

Referral of Case: Does the FA recommend that the individual return to first aid for a follow-up examination or treatment by either by a Quantum FA or a Doctor?

YES or NO When? seen by a physician today for follow-up.

Signature of FA: [signature]

Name of FA: (please print) Ryan Harkin

Signature of Patient:

Name of Patient: (please print) Jorgan (Sr) Aitock

☐ Copy provided to worker ☐ Copy refused by worker

Patient's Initials:

KEEP THIS RECORD CONFIDENTIAL AND RETAIN FOR AT LEAST 3 YEARS FROM DATE INJURY/ILLNESS IS REPORTED MAY BE REQUIRED FOR LONGER PERIODS DEPENDING ON PROVINCE REQUIREMENTS

Spill Report

SENES

NWT SPILL REPORT

(Oil, Gas, Hazardous Chemicals or other Materials)

Northwest Territories

24 – Hour Report Line
Phone: (867) 920-8130
Fax: (867) 873-6924

A Report Date and Time: APRIL 25/2009 1:10 PM

B Date and Time of spill (if known): APRIL 25/2009 11:30 AM

C ☑ Original Report ☐ Update no._____

Spill Number:

D Location and map coordinates (if known) and direction (if moving)
IDA BAY MINE 68° 14' 2" N 106° 31' 46" W SPILL CONTAINED AND REMOVED. NO LEAKAGE FROM SPILL SITE.

E Partly responsible for spill
QUANTUM MURRAY LP

F Product(s) spilled and estimated quantities (provide metric volumes/weights if possible)
DIESEL FUEL, APPROX. 120 LITRES

G Cause of spill
ACCIDENTAL OPENING OF FUEL TANK VALVE WHILE DIGGING MACHINE OUT OF SNOW BANK

H Is spill terminated? ☑ yes ☐ no

I If spill is continuing, give estimated rate: N/A

J Is further spillage possible? ☐ yes ☑ no

K Extent of contaminated area (in square meters if possible)
0.5 m² APPROX. 1.3 m x 0.3 m

L Factors effecting spill or recovery (weather conditions, terrain, snow cover, etc.)
FROZEN GROUND, SNOW COVER

M Containment (natural depression, dikes, etc.)
NATURAL DEPRESSION 0.3 DEEP & ROCK BERM

N Action, if any, taken or proposed to contain, recover, clean up or dispose of product(s) and contaminated materials
THE SPILL WAS CONTAINED BY A NATURAL DEPRESSION, BUT A ROCK BERM WAS PLACED AROUND THE SPILL. A PROPANE TIGER TORCH WAS USED TO BURN OFF ALL THE SNOW AND DIESEL FUEL INSIDE THE BERM. A ROCK CAP WAS PLACED OVER THE SPILL AREA.

O Do you require assistance?
☑ no ☐ yes, describe:

P Possible hazards to person, property, or environment; eg: fire, drink water, fish or wildlife
NONE. FUEL REMOVED. AREA CONTAINED & COVERED.

Q Comments or recommendations
SPILL AREA WILL BE TESTED WHEN CREW RETURNS TO IDA BAY FOR SITE REMEDIATION WORK IN JULY 2009.
ANY CONTAMINATED SOIL WILL BE EXCAVATED, PACKAGED AND TRANSPORTED OFF SITE FOR PROPER DISPOSAL.

FOR SPILL LINE USE ONLY

Lead agency:

Spill significance:

Lead Agency contact and time:

Is this file now closed? ☐ yes ☐ no

Reported by	Position, Employer, Location	Telephone
JOHN WIEGEL	SITE SUPERINTENDENT QUANTUM MURRAY LP, IDA BAY	8816 514 2605
Reported to	**Position, Employer, Location**	**Telephone**
Rod Bosel	GENERAL SUPERINTENDENT QUANTUM MURRAY LP, BURNABY BC	604 238-2220

NWT 1752/0202

Fuel Spill Report at Ida Bay Mine – April 21, 2009

QMLP personnel at Ida Bay Mine were preparing equipment for transport to Roberts Bay Mine. The equipment had been mobilized to Ida Bay Mine in September 2008 but could not be moved to Roberts Bay until spring 2009 when it could be transported overland by ice road.

To prepare for transport the work crew had to dig the equipment out of the snow that had accumulated on and around the equipment during the winter, then get the equipment operational and ready to move. During snow removal from around the engine compartment of a CAT 325DL excavator a fuel tank drain valve was inadvertently opened. No fuel was noticed leaking from the fuel tank probably due to the frozen conditions around the valve outlet.

The excavator was subsequently started and the engine left running to warm up the machine for operation. When the machine later stopped running investigation by the Site Superintendent revealed the fuel leak. The excavator had originally contained almost 1/4 of a tank of fuel (approximately 120 litres).

The fuel valve was closed and wired shut, the excavator was then partially fuelled and moved from the spill area. Examination of the spill area revealed that the leaked fuel had collected in a natural depression below the machine, was contained and not migrating from the immediate spill area, and the underlying ground was protected by the frozen conditions. A rock berm was constructed around the spill area to further contain the spill area and prevent fuel migration.

Initial attempts to soak up the spill using absorbent pads were unsuccessful as the spill area consisted largely of mushy snow.

It was felt that the consistency of the impacted material would cause additional contamination during excavation and packaging, and removal of rocks in the spill area would likely cause release of fuel from the spill area during attempts to excavate the area.

It was decided that using a propane tiger torch to incinerate the impacted material in place and not disturb the surrounding terrain was the best way to maintain the integrity of the spill area, remove the potential for spreading any fuel and completely remove all traces of the fuel. A tiger torch has a BTU rating of 208,000. Torching the spill area at close range would be completely burn all fuel.

A tiger torch was used to burn all the snow, fuel and ice inside the berm.

A rock cap was finally placed over the spill area to delineate the area and prevent any exposure to wildlife.

The site engineer is scheduled to arrive at site April 22, 2009. The engineer and site superintendent will inspect the spill area and determine whether:

- all fuel in the spill area has been destroyed
- excavation of the area is required
- excavation of the area is feasible in the existing conditions, or
- excavation should be postponed until summer when the ground surface has thawed.

QMLP personnel are scheduled to undertake remediation activities at Roberts Bay Mine starting July 2009.

From: Andrew Keim [mailto:Andrew.Keim@inac-ainc.gc.ca]
Sent: April-23-09 9:44 AM
To: Dele Morakinyo; Ron Bosel
Cc: Charles Gravelle; Henry Wong; Bernie MacIsaac; Melissa Joy; Peter Kusugak; Giselle Cotta; Matthew McElwaine; Gavin Domitter; Vijay Lanji
Subject: RE: 34807 Fuel Spill at Ida

Mr. Bosel,

Thank you for the follow up.
This report will be appended to the IDA bay file and will be followed up later this summer during the regular inspection season.
The Inspector for the Kitikmeot Region is Melissa Joy, stationed in Kugluktuk, Nunavut.

Once the 2009 Inspection schedule is set Ms. joy will be in touch to set dates for both the site clean up Inspection and closure/follow up on the this spill.

If further up-dates are forthcoming please forward them to this office so we may have a complete file for assessment purposes.

Thank you for your time and attention to this matter.

Sincerely,

Andrew Keim
Water Resources Officer
INAC Nunavut Regional Office
P.O. Box 100
Iqaluit, Nunavut X0A 0H0
NEW Email: Andrew.Keim@inac-ainc.gc.ca
Phone: (867) 975-4289
Fax: (867) 979-6445

>>> "Ron Bosel" <ronb@quantumgroup.ca> 4/22/2009 4:18 PM >>>

Attached is a copy my internal report of the Ida Bay fuel spill containing more detail than the brief report submitted to the NWT Report Line.

Unsuccessful use of absorbent pads was tried before the decision to incinerate the fuel. I believe and would expect all traces of the fuel spill have been destroyed.

I am expecting to hear from John Wiegel today and will be able to confirm further details with him. Henry Wong will also be site today to inspect the situation.

As noted by Dele, the initial NWT Spill Report was forwarded with an incorrect date but the spill centre was notified of the error as soon as I noticed it. I was informed the date on the report had been amended prior to transmission to relevant parties.

Please contact me with any questions or concerns regarding this matter,

Ron Bosel

General Superintendent, Northern/Special Projects

Quantum Murray LP

100-3600 Viking Way * Richmond BC V6V 1N6

Tel: 604.238.2220 * 1.800.251.7773 * Cell: 604.839.9240 * Fax: 604.430.0083

rbosel@qmlp.ca * www.quantummurray.com <http://www.quantummurray.com/>

Wildlife Report

SENES

INCIDENT INVESTIGATION REPORT

Serious and critical incidents must be reported **immediately** to your local Regional EH&S Manager and the Corporate Claims Specialist via telephone (416-705-2625).

The Site Supervisor/Manager must complete this report.

1. LOCATION

Division: ☒ Quantum Remediation ☐ Murray Demolition ☐ Thomson Metals ☐ Echelon
☐ Quantum Hazmat ☐ Murray Abatement ☐ Thomson Waste Transfer

Project #: S070198 Address: Roberts Bay Province: Nunavut

Worker's Supervisors name: John Weigel Phone: (780)504-6272

Incident reported to Supervisor/Manager Date: August-6-09 Time: 1000 ☐am ☒pm

2. INCIDENT DETAILS complete indicated pages

Type of incident: ☐ Injury or Illness (1,2,3,4) ☐ Property Damage (1,3,4)
☐ Equipment Failure (1,3,4) ☐ Fire(1,3,4) ☒ Other: Wild Life Incident

Person directly involved in incident: Damian Analok Job title: Wild Life Monitor

Incident date: August-6-09 Time: 9:45 ☐am ☒pm

Incident reported to: Gavin Domitter Date: August-6-09 Time: 9:50 ☐am ☒pm

If incident outdoors, include weather conditions: Cloudy, Rainy

Witness name: Allen Sibbeston Phone #: (867)874-2127 Statement attached ☒yes ☐ no

Witness name: Phone #: ( ) Statement attached ☐yes ☐ no

Witness name: Phone #: ( ) Statement attached ☐yes ☐ no

3. EVENTS LEADING UP TO AND DESCRIPTION OF INCIDENT (Include description of damage and losses)

Describe incident facts & events, include: What, When, Why, Who, and How – When possible include timelines.

Allen was a the creek and spotted a wolf on camp side of the creek. The wolf left and headed towards camp; He called the camp on the radio and reported that a wolf down were he and the cook were. Damian was the monitor on duty, so he left camp and went towards the creek. He met Allen and Allen told him that the wolf was heading towards camp through the west valley. Damiam than proceeded to follow the animal to see where it was going. Part way up the valleythe wolf jumped up from the low lying shrubs and started towords the monitor. Damian than fired two warning shots in front of the animal.The wolf never slowed down or showed any signs of retreating . The wolf also growled and baered his teeth. fearing for his safety he took a third shot and hit the wolf in the wolf in the left rear leg. The wolf was about 30- 40 ft away. Damian than took a fourth shot the left shoulder killing the animal. Damian than left the seen headed back camp and got stuck. he called the camp on the radio and reported that he was stuck and the wolf was dead.

(If more space is needed, attach additional sheet). The information I have provided either in my own writing or verbally for the purpose of this report is true and correct.

4. INJURED PERSON DETAILS (if no injury, skip to next section)

INCIDENT INVESTIGATION REPORT

Injured person's name: N/A Home/cell phone #: ( )

Type of injury: ☐ Medical Aid, transported by: _____ To: _____

☐ First Aid, provided by: _____

Employer Name, if 3rd party: _____

Preferred language: _____

Hours of work on day of injury from: ☐am ☐pm to: ☐am ☐pm

Next scheduled work date; Start time: ☐am ☐pm Duration of shift: _____

Will the worker be absent following the day of the injury? ☐ No ☐ Unknown ☐ Yes: _____

Will other duties be assigned because of injury? ☐ No ☐ Yes, please explain: _____

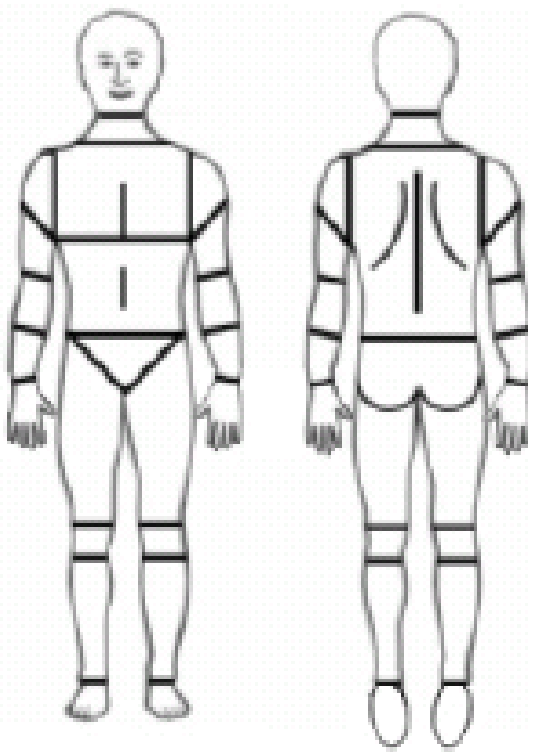
Has the worker ever experienced any prior similar or related problem, injury or condition? ☐No ☐Unknown ☐ Yes : _____

Length of time at present job: _____ Province where injury occurred: _____

Was any individual who does not work for QMLP partially or totally responsible for injury? ☐ No ☐ Yes, Provide details - _____

Worker's task at time of injury: _____ Was this task routine? ☐ Yes ☐ No

Site supervisor must ensure the workers has signed a Modified Work Letter and has provided the worker with a Functional Abilities form to be filled out by the treating Medical Professional. - (**Prior** to first visit to clinic/hospital).

Type of Incident:	**Body Part injured** (Please check all that apply)		**Mark injured area:**
☐ Struck/Caught ☐ Overexertion/strain ☐ Repetition ☐ Fall ☐ Fire/Explosion ☐ Harmful Substances/ ☐ Assault ☐ Slip or trip ☐ Lifting ☐ Environmental ☐ Spill ☐ Other: _____	☐ Head ☐ Face ☐ Eye(s) ☐ Ear(s) ☐ Teeth	☐ Neck ☐ Chest ☐ Upper Back ☐ Lower Back ☐ Abdomen	
		Left **Right**	
	☐ Shoulder	☐ ☐	
	☐ Arm	☐ ☐	
	☐ Elbow	☐ ☐	
	☐ Forearm	☐ ☐	
	☐ Wrist	☐ ☐	
	☐ Hand	☐ ☐	
	☐ Finger (s)	☐ ☐	
	☐ Hip	☐ ☐	
	☐ Thigh	☐ ☐	
	☐ Knee	☐ ☐	
	☐ Lower leg	☐ ☐	
	☐ Ankle	☐ ☐	
	☐ Foot	☐ ☐	
	☐ Toe(s)	☐ ☐	
	☐ Other: _____		

INCIDENT INVESTIGATION REPORT

5. ROOT CAUSE ANALYSIS – DIRECT AND UNDERLYING Identify the unsafe acts/conditions and underlying causes directly related to the incident (refer to Supervisors Root Cause Analysis Reference Sheet)
Unsafe Acts:
Unsafe Conditions:
Immediate Cause:
Underlying Causes:
Include a diagram/sketch (if applicable)

INCIDENT INVESTIGATION REPORT

6. EVALUATION OF RISK

Loss Severity Potential: ☐ Major ☐ Serious ☐ Minor

Probable Recurrence Rate: ☐ Frequent ☐ Occasional ☐ Rare

7. CORRECTIVE ACTIONS PLAN to prevent reoccurrence of similar incidents. Recommendations must be specific, constructive, get at root causes and take into account contributing factors. Recommendations should correct deficiencies including any required training and proper supervision of the task(s).

List all cause(s) of Injury/Loss	**Suggested Corrective Actions** (at least one for each cause):	**Person responsible**	**Date for completion** (dd/mm/yyyy)
1.			
2.			
3.			
4.			
5.			
6.			
7.			

8. SIGNATURES:

This form was completed by:

Supervisor Name: _____

Signature: _____ Date: _____

Other - Name: _____ Title: _____

Signature: _____ Date: _____

Fax completed form to 416-253-9793 within 24 hours of incident & phone Regional EH&S Manager immediately.

If injury, include copies of all relevant information (Dr.'s notes, FAF form, pictures, sketches etc.)

If you have any questions call Corporate Claims at 416-705-2625.

Site Supervisor to distribute report to: ☐ Corporate Claims Specialist ☐ EH&S Regional Manager

H&S Regional Manager to distribute report to: ☐ JHSC or Worker Rep. ☐ Operations Manager ☐ Project Manager ☐ Regional Operations Mgr /VP

INCIDENT INVESTIGATION REPORT

ADDITIONAL INCIDENT ANALYSIS

To be completed by EHS personnel when required.

9. ROOT CAUSE ANALYSIS – DIRECT AND UNDERLYING
Identify the unsafe acts/conditions and underlying causes directly related to the incident (refer to Supervisors Root Cause Analysis Reference Sheet)

ANALYSIS: The Task – review the actual work procedure being used at the time of the incident.

Comments:

ANALYSIS: Materials / Equipment – to seek out possible results from materials / equipment used to perform the task.

Comments:

ANALYSIS: The Environment – the physical environment, and especially sudden changes are factors that need to be identified as possible contributing causes.

Comments:

ANALYSIS: The Worker – the physical and mental condition of individuals directly involved in the incident must be explored, as part of an investigation process.

Comments:

ANALYSIS: The Management System – Management holds the legal responsibility for the safety of the workplace. The role of the supervisors and management and the role or presence of management systems must always be considered in an incident investigation. Failures of management systems may be direct or indirect factors, which must be explored as part of an investigation process.

Comments:

SIGNATURES

This form was completed by: Name: _____

Signature: _____ Date: _____

INAC Inspection Report

SENES

Indian and Northern Affairs Canada | Affaires indiennes et du Nord Canada

ENVIRONMENTAL INSPECTION REPORT

Date: AUG 16, 2009

P mittee: *(complete name and address)* DIAND - CONTAMINATED SITES

		Permit Expiry Date	Last Previous Inspection
Land Use Permit No.	N2007X0006	APRIL 1, 2010	
Quarrying Permit No.	2009Q80059 TO 0065	APRIL 1, 2010	
Contractor:		Subcontractor:	

Location(s) Inspected: REMEDIATION CAMP AT ROBERTS BAY
N 68° 10' 45" W 106° 33' 29"

Current Stage of Operation:
16 # OF PEOPLE IN CAMP 80 % OF SEASON COMPLETED

Program Modifications Approved:

Condition of Operation "A"-Acceptable "U"-Unacceptable "N/A"-Not Applicable

	Operating Condition	Aspect Inspected				
		CAMP		QUARRIES		
A	Location as Permitted	A		A		
B	Timing as Permitted	A		A		
	Equipment as Approved					
D	Methods & Techniques					
E	Facilities	A				
F	Erosion					
G	Chemicals, Waste	A				
H	Wildlife & Fisheries Habitat					
I	Ecological Resource					
K	Fuel Storage	A				
L	Brush Disposal					
M	Matters Not Inconsistent					
N	Water Engineering					
O	Water Supply	A				
	Restoration	A				
Q	Quarrying Methods			A		
R	Sections 12 to 19 T.L.U.R.	A				
S						
T						

Surveillance Network Program

Explanatory Remarks *(attach page 2, if required)*
NICE CLEAN CAMP - NO CONCERNS

Page 2 attached ☐ Yes ☒ No

Representative's Signature

BP
RMO Initials

Inspector's Signature

John Wright (Site Supervisor)
Representative's Title

District Mgr. Initials

Copy 1 - Inspector's File Copy 2 - Field Rep. Copy 3 - Permittee Head O. Copy 4 - District

APPENDIX D

SITE PHOTOGRAPHS

Photograph No.1: Barge off-loading at Ida Bay in 2008.

Photograph No.2: Mobilization of equipment to Roberts Bay from the Ida Bay mine site.

Photograph No.3: Mobilization of material and supplies to Roberts Bay

Photograph No. 4: Ida Bay site conditions at end of 2009 Field Season

Photograph 5: Roberts Bay site conditions at end of 2009 Field Season

Photograph 6: Roberts Bay site conditions at end of 2009 Field Season looking west

Photograph 7: Roberts Bay site conditions at end of 2009 Field Season looking east

Photograph 8: Roberts Bay site conditions at end of 2009 Field Season

Photograph No. 9: Adit at Ida Bay prior to blasting

Photograph No. 10: Adit at Ida Bay graded post blasting.

Photograph No. 11: Adit #1 at Roberts Bay prior to blasting (24 July 2009)

Photograph No. 12: Adit #1 at Roberts Bay post blasting and backfilling (7 August 2009)

Photograph No. 13: Adit #2 at Roberts Bay prior to blasting (26 July 2009)

Photograph No. 14: Adit #2 at Roberts Bay post blasting and backfilling (13 August 2009)

Photograph No. 15: Adit #2 and Vent Raise at Roberts Bay prior to remediation

Photograph No. 16: Vent Raise at Roberts Bay final cover

Photograph No. 17: Former Camp Area prior to remediation

Photograph No. 18: Former Camp Area post remediation

Photograph No. 19: Mill Area prior to remediation

Photograph No. 20: Mill Area post remediation

Photograph No. 21: Garage Area prior to remediation

Photograph No. 22: Garage Area post remediation

Photograph No. 23: Pump House Area prior to remediation

Photograph No. 24: Pump House Area post remediation

Photograph No. 25: Equipment at Roberts Bay Mine Site

Photograph No. 26: Equipment at Roberts Bay Mine Site

Photograph No. 27: Equipment at Roberts Bay Mine Site

Photograph No. 28: Equipment at Roberts Bay Mine Site

Photograph No. 29: Scrap metal and debris at Ida Bay Mine Site

Photograph No. 30: Scrap metal and debris at Ida Bay Mine Site

Photograph No. 31: Scrap metal and debris at Ida Bay Mine Site

Photograph No. 32: Scrap metal and debris at Ida Bay Mine Site

Photograph No. 33: Scrap metal and debris at Roberts Bay Mine Site

Photograph No. 34: Scrap metal and debris at Roberts Bay Mine Site

Photograph No. 35: Scrap metal and debris at Roberts Bay Mine Site

Photograph No. 36: Scrap metal and debris at Roberts Bay Mine Site

Photograph No. 37: Hazardous Materials at Ida Bay Mine Site

Photograph No. 38: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 39: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 40: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 41: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 42: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 43: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 44: Hazardous Materials at Roberts Bay Mine Site

Photograph No. 45: Metal Impacted soil remediation at the Mill Area of Roberts Bay

Photograph No. 46: Petroleum Hydrocarbon remediation at the Mill Area of Roberts Bay

Photograph No. 47: Petroleum Hydrocarbon remediation at the Mill Area of Roberts Bay

Photograph No. 48: Petroleum Hydrocarbon remediation at the POL Area of Roberts Bay

Photograph No. 49: Petroleum Hydrocarbon remediation at the POL Area of Roberts Bay

Photograph No. 50: Petroleum Hydrocarbon remediation at the POL Area of Roberts Bay

Photograph No. 51: Petroleum Hydrocarbon remediation at Garage Area of Roberts Bay

Photograph No. 52: Petroleum Hydrocarbon remediation at Garage Area of Roberts Bay

Photograph No. 53: Petroleum Hydrocarbon remediation at Garage Area of Roberts Bay

Photograph No. 54: Petroleum Hydrocarbon remediation at Garage Area of Roberts Bay

Photograph No. 55: Petroleum Hydrocarbon remediation at the Drum Area of Roberts Bay

Photograph No. 56: Petroleum Hydrocarbon remediation at the Drum Area of Roberts Bay

Photograph No. 57: Petroleum Hydrocarbon sample location ET1101 at Roberts Bay

Photograph No. 58: Tailings Containment Area prior to remediation work

Photograph No. 59: Tailings Containment Area prior to remediation work

Photograph No. 60: Landfill (SWMF) during construction (looking south along berm)

Photograph No. 61: Landfill (SWMF) during construction (looking southeast)

Photograph No. 62: Landfill (SWMF) during construction (placement of geotextile)

Photograph No. 63: Placement of non-hazardous debris into SWMF

Photograph No. 64: Decanting water above tailings to dry side of SWMF

Photograph No. 65: Capping of debris in SWMF during construction

Photograph No. 66: Placement of liner inside SWMF during construction

Photograph No. 67: Landfill (SWMF) during construction

Photograph No. 68: Final Cover Placement Works

Photograph No. 69: Final Cover Placement Works

Photograph No. 70: Final Cover Placement Works

Photograph No. 71 Final Cover Placed with thermistors.

Photograph No. 72: Thermistor Installation

Photograph No. 73: Thermistor Installation

Photograph No. 74: Demobilization from Roberts Bay in April 2010

Photograph No. 75: Demobilization from Ida Bay in August 2010

Photograph No. 76: Aerial Photo of Ida Bay August 2010

Photograph No. 77: Aerial Photo of Roberts Bay August 2010