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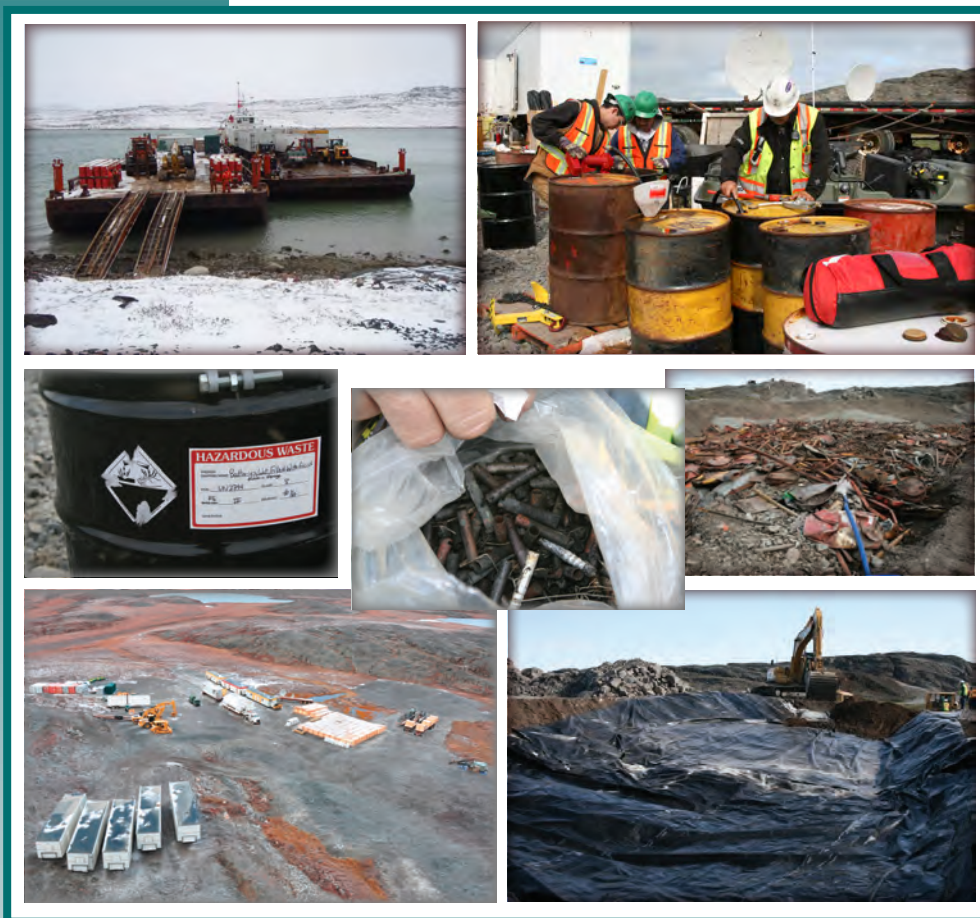
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Completion Report for Roberts Bay and Ida Bay Mine Sites Site Remediation Program, Nunavut



FEBRUARY 2011

Compiled by



SENES Consultants Limited

Specialists in Energy, Nuclear and Environmental Sciences

In Association with
LB Engineering



**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

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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.

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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 68° 10' 45"N by 106° 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%
<u>Total Cost:</u>	<u>40%</u>
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.

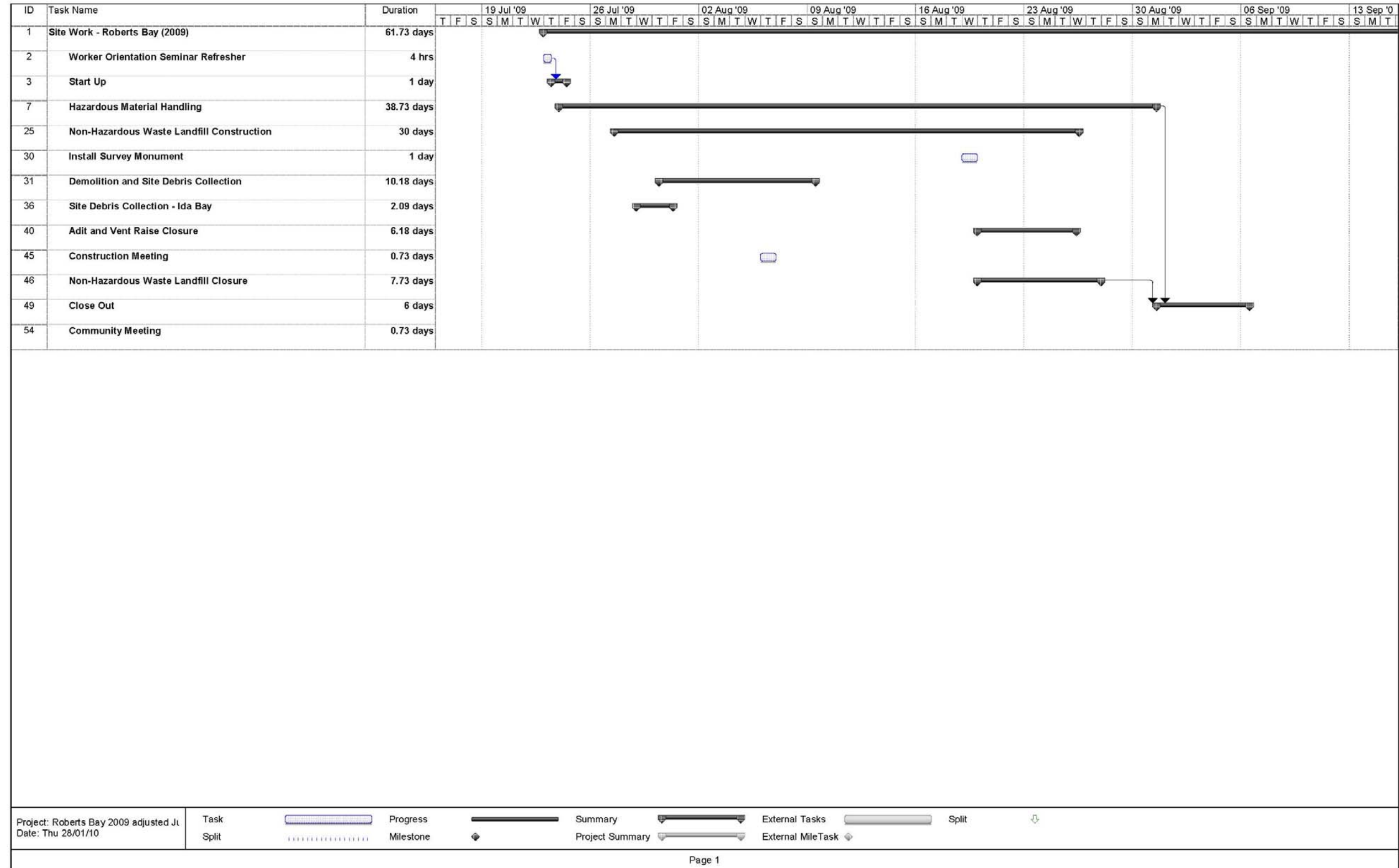
In April 2010 the remediation contractor relocated their equipment, materials, supplies and containment boxes from the Roberts Bay site to the Ida Bay site. Photograph No. 74 graphically shows the relocation to Ida Bay. The site remediation work at Ida Bay was completed in July 2010 with the site demobilization 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.

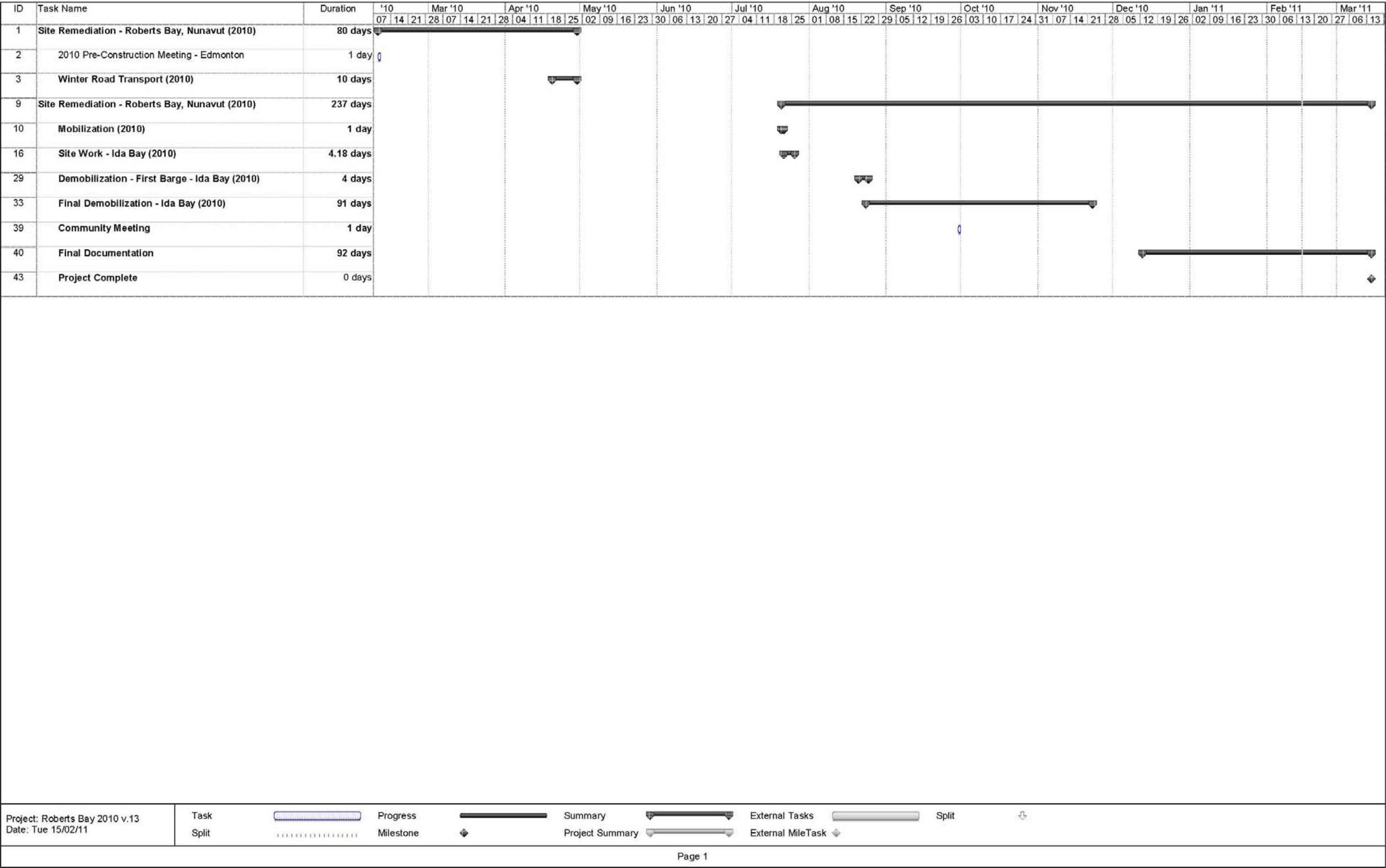
A brief summary of the remediation activities completed at the Roberts Bay and Ida Bay sites is provided in Table 5, and the general remediation schedule for the entire remediation program in Table 6. An overall site plan of the Roberts Bay and Ida Bay sites is shown in Figure 1, and an overall site 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





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 where 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 m³ of debris and 742 m³ 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 m³ 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 m³. 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 m³;
- 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 (xanthate, 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 m³); 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 m³ 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 m³, 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 m³ 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			V09-Mi1	V09-Mi2	V09-Mi3	V09-Mi4	V09-Mi5	V09-228R	V09-Mi6		V09-SW1
Area			Mill	Mill	Mill	Mill	Mill	Mill	Mill		Outlier
Survey ID	NWB WATER LICENCE CRITERIA	RDL	224	225	226	227	228	250	229	RDL	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	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	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	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		280		300	301	302	303	304		305		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	86425	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		320-GE1		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	RDL	320	RDL	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 m³ 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 m³ 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 m³ 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 m³ 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 m³) 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	Xanthate 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 Dowtherm 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 NOMADICTM 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 m³ 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 m³ was discharged which would translate to over 20 m³ per day in the field. Given the size of the camp and the volume of water taken from the Unnamed Lake (150 m³ 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 m³ of sewage would have been generated during the month of July 2009 and 117 m³ 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 m³. During the two months of operation 33.974 m³ of water was taken in July and 117.3 m³ in August. The daily average for the duration of the work was 2.9 m³/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: <ul style="list-style-type: none"> • 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

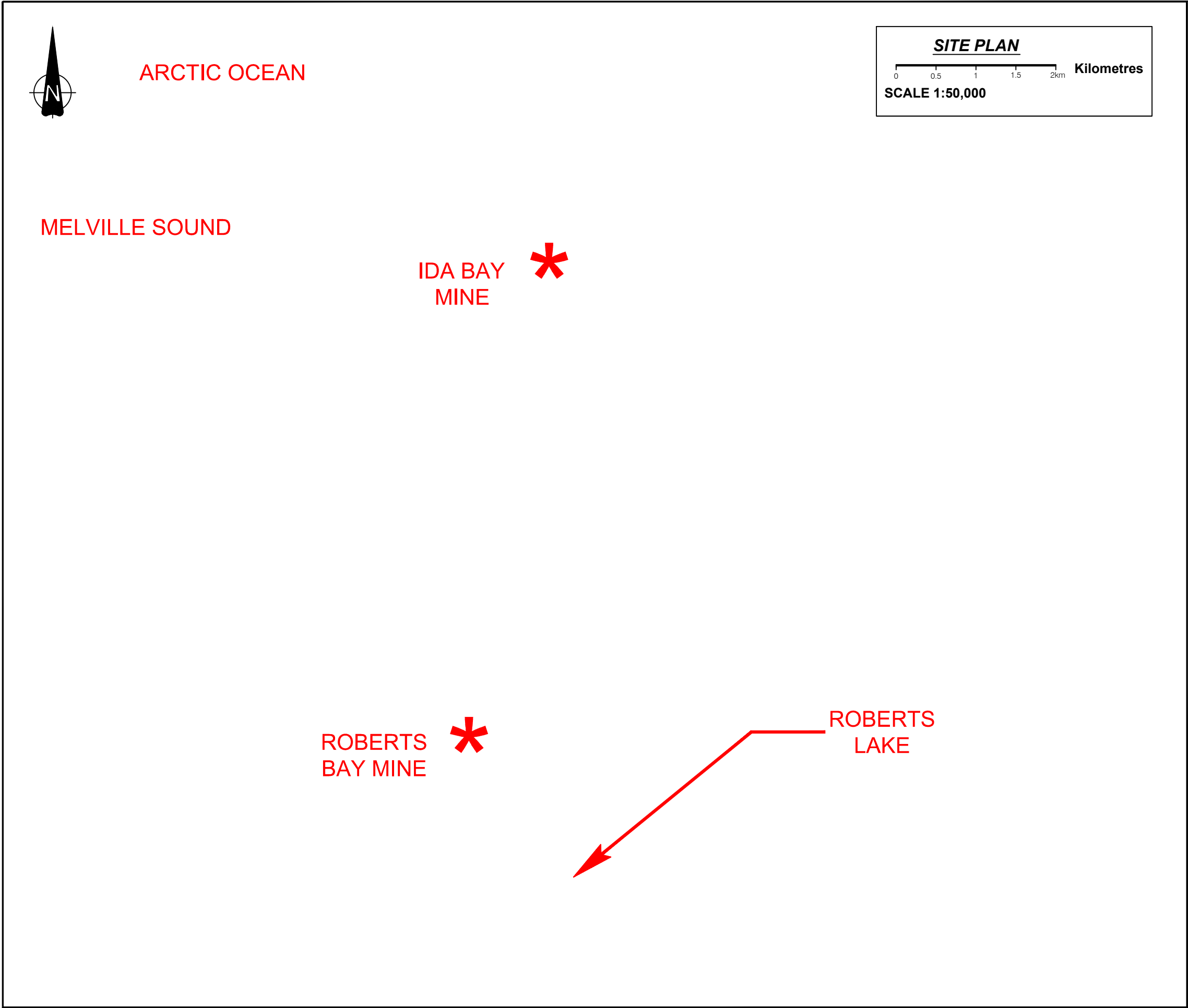
This issue is discussed in the context of the Water Licence as noted in Section 4.1.

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.

Mar 06, 2011 - 8:00am - USER ataylor
Z:\34000 Series\34807 Roberts Bay\34807 PWGSC Overall Site Plan Fig 1.dwg



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
REMEDICATION PROGRAM**

**ROBERTS BAY AND IDA BAY
OVERALL SITE**



Senes Consultants

Project Number
34807

Figure
1

APPENDIX A

TECHNICAL SUPPORTING DOCUMENTS

- **QMLP Closure Report**
- **QMLP Photo Log**
- **QMLP As-Built**
- **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

Daily Inbound/Outbound Log

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

Date/Time In	TICKET	PAD	METER MARK	LOAD #	SLIP #	Gross Wt	Tare	Traile r	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
	<u>2</u>								<u>25610</u>
	<u>24</u>								<u>351300</u>

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

Destination: QFI Debris CRILP

DISPOSAL CODE DP-940-883

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: High level

10 Bays

Project Load # 7301 Time Shipped 7th 12 2010 Date

Truck License AY 2452 Trailer License 7032213

Signature Authorized Site Representative [Signature] For

Trucker's signature [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.

GROSS 36060 kg
TARE 13010 kg
NET = 23050 kg

Receiver's Signature [Signature] Date 7th 12 2010

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				REFERENCE MANIFEST NO				
Indian and Northern Affairs Canada (INAC)				BF16004-1				
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	Edwards Bay, Yukon	8821 14th Ave Rd Delta BC	
City Transfer Inc	LT0073	A11482 / 200720 BC		10/11/10	10/11/10	8821 River Rd Delta BC	9396 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)	
INAC / A. G. S. K. S. K.					604-770-7388	604-270-3889	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 / consigneur Producteur / expéditeur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial Company name / Nom de l'entreprise Mailing address / Adresse postale City / Ville Province Postal code / Code postal E-mail / Courriel 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 Company name / Nom de l'entreprise Mailing address / Adresse postale City / Ville Province Postal code / Code postal E-mail / Courriel électronique Tel. No. / N° de tél. Vehicle / Véhicule Trailer - Rail car No. 1 1 ^{re} remorque - wagon Trailer - Rail car No. 2 2 ^e remorque - wagon Registration No. / N° d'immatriculation Prov.				C Receiver / consignee Réceptionnaire / destinataire 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 <input checked="" type="checkbox"/> Yes / Oui <input type="checkbox"/> 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 / Courriel 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 <input checked="" type="checkbox"/> A.M. <input type="checkbox"/> P.M.															
Intended Receiver / consignee Réceptionnaire / destinataire prévu Mailing address / Adresse postale City / Ville Province Postal code / Code postal E-mail / Courriel électronique Tel. No. / N° de tél. Receiving site address / Adresse du lieu de l'expédition City / Ville Province Postal code / Code postal				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 / consigneur for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Attestation du transporteur: J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets. Name of authorized person (print): Nom de l'agent autorisé (caractères d'imprimerie): Year / Année Month / Mois Day / Jour Signature				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.		Packing / risk gr. Gr. d'emballage / de risque		Units L or / ou Kg Unités		Packaging/Contentant 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 / Refused Accepté / Refusé		Decont. Pack / Veh. Cont. / Véh.	
Notice No. N° de notification		Notice Line No. N° de ligne de la notification		Shipment Of / De		D or R code Code É ou R		C code Code C		Basel Annex VIII or 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	
International use only																							
Generator / consigneur certification: I certify that the information contained in Part A is correct and complete. Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Name of authorized person (print): Nom de l'agent autorisé (caractères d'imprimerie): Signature Tel. No. / N° de tél.																							

MATERIAL DESIGNATION SLIP

JOB #

Roberts Bay

50049

☒ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address:

TANK FARM

(H 4)

DISPOSAL CODE

DP-990-883

Destination:

QFI 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:

High water level

1-BOX #10

Project Load #

CL

Time Shipped

12:30

Date

Nov 13 2010

Truck License

AV 1708

Trailer License

Name

Q.M.L.P.

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.

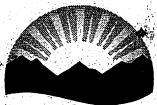
Receiver's Signature

Date

Nov 13 2010

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

GROSS - 6960 kg
TARE - 4400 kg
NET = 2560 kg



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:

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

CONSIGNOR				REFERENCE MANIFEST NO				
Indian and Northern Affairs Canada (INAC)				BF16603-3				
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	
Nathan Vander Company Limited	N/A	U/A	BC	10/08/12	10/11/12	Boatbay Delta BC	Boatbay Delta BC	
Quantum Management	LT1185	AJ1708	BC	10/11/12	10/11/12	Boatbay Delta BC	Boatbay Delta BC	
I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.								
TAN INAC A Castellan			Signature		2707388	2707389	10/11/12	
Consignor Contact Name (Please Print)			Signature		Telephone Number	FAX Number	Date (YY/MM/DD)	

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.

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:

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

CONSIGNOR				REFERENCE MANIFEST NO				
Indian and Northern Affairs Canada (INAC)				BF16603-3				
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 Waste Company Limited	N/A	U/A	BC	10/08/12	10/11/12	Waste Transfer Station, BC	Delta BC	
Quantum Minerals	LT1185	AJF08	BC	10/11/12	10/11/12	809 hwy 93 Kuta BC	Delta BC	
I certify the above shipments have been made in compliance with the Hazardous Waste Regulation.								
T/INAC A Castellan			[Signature]		2707388	2707389	10/11/12	
Consignor Contact Name (Please Print)			Signature		Telephone Number	FAX Number	Date (YY/MM/DD)	

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 / consigneur Producteur / expéditeur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial 1		B Carrier Transporteur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial 23		Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 28	
Company name / Nom de l'entreprise Indian and Northern Affairs Canada Mailing address / Adresse postale 2000 1st Ave NW City / Ville Ottawa Province ON Postal code / Code postal K1P 6K6 E-mail / Courriel électronique Tel. No. / N° de tél. ()		Company name / Nom de l'entreprise See multiple carrier form Mailing address / Adresse postale City / Ville Province Postal code / Code postal E-mail / Courriel électronique Tel. No. / N° de tél. ()		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 <input checked="" type="checkbox"/> Yes / Oui <input type="checkbox"/> 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 / Courriel 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 10 11 12 01 02 03 04 05 06 07 08 09 10 11 12 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 29	
Shipping site address / Adresse du lieu de l'expédition Roberts Bay & the Bay City / Ville Nanaimo Province BC Postal code / Code postal V9X 1A6 Intended Receiver / consignee Réceptionnaire / destinataire prévu 2 Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial Quantum Facilities Inc Mailing address / Adresse postale 102-300 Viking Way, Richmond BC City / Ville Richmond Province BC Postal code / Code postal V6V 1A6 E-mail / Courriel électronique Tel. No. / N° de tél. () Receiving site address / Adresse du lieu de l'expédition 9390 River Rd City / Ville Delta Province BC Postal code / Code postal V4L 2G1		Vehicle / Véhicule Trailer - Rail car No. 1 1 ^{re} remorque - wagon Trailer - Rail car No. 2 2 ^e remorque - wagon Registration No. / N° d'immatriculation Prov. 24 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 / consigneur for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Attestation du transporteur : J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets. Name of authorized person (print); Nom de l'agent autorisé (caractères d'imprimerie) Tel. No. / N° de tél. () Year / Année Month / Mois Day / Jour Signature :		Quantity received / Quantité reçue Units / Unités L or / ou Kg 2560 kg Comments / Commentaires Handling / Code de manutention 31 Shipment / Envoi Accepted / Refused 32 Decont. / Veh. 33 34 35	
Prov. code Code prov. 3 Shipping name Appellation réglementaire Waste Oil 4 Class / Classe Sub. class(es) Classe(s) sub. NA UN No. N° UN Packing / risk gr. Gr. d'emballage / de risque NA Units L or / ou Kg 5 Packaging/Contenant Codes Int-ext 6 Phys. state Etat phys. S 7 8 9 10		National code in country of / Code du pays Export Import Customs code(s) Code(s) de douanes 11 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 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		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 (caractères d'imprimerie) Signature Tel. No. / N° de tél. (604) 319-7164 Special handling / Manutention spéciale Attached / Joint As follows / Contre : Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour Time / Heure Scheduled arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour Time / Heure 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	
Generator / consigneur certification : I certify that the information contained in Part A is correct and complete. Attestation du producteur / expéditeur : J'atteste que tous les renseignements à la partie A sont exacts et complets. Name of authorized person (print) Nom de l'agent autorisé (caractères d'imprimerie) Signature Tel. No. / N° de tél. (273) 388-1008 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		International use only 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100		Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour Time / Heure 27 08 10 08 24 12 30 Scheduled arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour Time / Heure 10 11 19 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	



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
	<u>4</u>								<u>14560</u>
	28								

MATERIAL DESIGNATION SLIP

JOB #

Roberts Bay

50050

☒ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address:

Ida Bay fuel spill

DISPOSAL CODE

DP-990-884

Destination:

QRT Delta (CA/ILP)

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:

1 Box #4

Project Load #

AN 1706

Time Shipped

100

Date

Nov 12 2010

Truck License

Trailer License

Name

CA/ILP

Signature Authorized Site Representative

For

Trucker's signature

LT Licence / Other Truck Info

☐ Tandem

☐ T+P

☐ Enddump

☐ 3 Axle

☐ 4 Axle

☐ Other

FLT 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

50051

☐ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address:

Ida Bay fuel spill

DISPOSAL CODE

DP990-884

Destination:

QRT Delta (CA/ILP)

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:

1 Box #4

Project Load #

AN 1908

Time Shipped

145

Date

Nov 12 2010

Truck License

Trailer License

Name

CA/ILP

Signature Authorized Site Representative

For

Trucker's signature

LT Licence / Other Truck Info

☐ Tandem

☐ T+P

☐ Enddump

☐ 3 Axle

☐ 4 Axle

☐ Other

FLT 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

☒ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address:

Destination:

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:

Project Load #

Time Shipped

Date

Truck License

Trailer License

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.

JOB #

DISPOSAL CODE

GROSS 7000 kg
TARE 4290 kg
NET 2710 kg

Receiver's Signature

Date

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

MATERIAL DESIGNATION SLIP

☒ Soil ☐ Concrete ☐ Demo Debris ☐ Asphalt

☐ Other

Source Site Address:

Destination:

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:

Project Load #

Time Shipped

Date

Truck License

Trailer License

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.

JOB #

DISPOSAL CODE

GROSS 23850 kg
TARE 19370 kg
NET 4480 kg

Receiver's Signature

Date

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



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

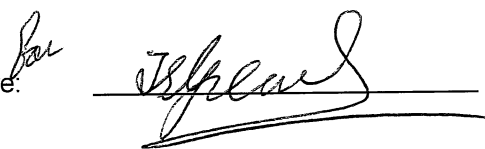
Generator Reg.#: NUG100008

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: 

Date: March 14/11

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.

BH26475-2

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

A Generator / consigneur Producteur / expéditeur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial BCC 04156 JV				B Carrier Transporteur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial LT 0859				Reference No. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27			
Company name / Nom de l'entreprise Newalta Corp. Mailing address / Adresse postale City / Ville 9-7483 Progress Way Delta BC V4G1E7 E-mail / Courriel électronique 604 952-1220				Company name / Nom de l'entreprise Newalta Corp. Mailing address / Adresse postale City / Ville 9-7483 Progress Way Delta BC V4G1E7 E-mail / Courriel électronique 604 952-1220				C Receiver / consignee Réceptionnaire / destinataire 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 <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous			
Shipping site address / Adresse du lieu de l'expédition Same City / Ville Province Postal code / Code postal				Vehicle / Véhicule Trailer - Rail car No. 1 1 ^{er} remorqueur - wagon 1594 KS Trailer - Rail car No. 2 2 ^e remorqueur - wagon BC				Company name / Nom de l'entreprise Mailing address / Adresse postale City / Ville Province Postal code / Code postal E-mail / Courriel électronique Tel. No. / N° de tél. Receiving site address / Adresse du lieu de destination			
Intended Receiver / consignee Réceptionnaire / destinataire prévu Metalex Mailing address / Adresse postale City / Ville 2511 #5 Rd. Richmond BC V4G1E7 E-mail / Courriel électronique 604 952-1220 Receiving site address / Adresse du lieu de l'expédition Same City / Ville Province Postal code / Code postal				Port of entry Point d'entrée Port of exit Point de sortie Carrier Certification: I certify that I have received waste or recyclable material from the generator / consigneur for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Attestation du transporteur: J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets. Name of authorized person (print): Nom de l'agent autorisé (caractère d'impression): James VanBuerkenhout Year / Année Month / Mois Day / Jour 11 03 04				Date received / Date de réception Year / Année Month / Mois Day / Jour Time / Heure <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.			
Prov. code Code prov. (i) BATTERIES, WET, FILLED WITH ACID (ii) BATTERIES, WET, FILLED WITH ACID (iv)				Shipping name Appellation réglementaire BATTERIES, WET, FILLED WITH ACID BATTERIES, WET, FILLED WITH ACID				Class / Classe Sub. class(es) Sous-classe(s) 8 UN2794 III 8 UN2794 III			
Notice No. N° de notification (i) (ii) (iv)				Notice Line No N° de ligne de la notification (i) (ii) (iv)				Shipment Envoi (i) (ii) (iv)			
National code in country of / Code du pays Customs code(s) Code(s) de douanes (i) (ii) (iv)				If handling code "Other" (specify) Si code de manutention "autre" (spécifier) CLASS-8 24 HOUR #1-800-567-7455				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'impression) Signature Tel. No. / N° de tél. ()			
Generator / consigneur certification: I certify that the information contained in Part A is correct and complete. Attestation du producteur / expéditeur: J'atteste que tous les renseignements à la partie A sont exacts et complets. Name of authorized person (print) Nom de l'agent autorisé (caractère d'impression) J. VanBuerkenhout Signature JV Tel. No. / N° de tél. 604 952-1220				Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour 11 03 04				Scheduled arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour 11 03 04			

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.

BG80302-2

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

A Generator / consignoir Producteur / expéditeur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial BC600119				B Carrier Transporteur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial LT0859				Reference Nos. of other movement document(s)/manifest(s) used / N° de référence des autres documents de mouvement/manifestes utilisés 27			
Company name / Nom de l'entreprise Newalta Corporation				Company name / Nom de l'entreprise Newalta Corporation				C Receiver / consignee Réceptionnaire / destinataire Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial BC603161			
Mailing address / Adresse postale City / Ville Province Postal code / Code postal H 9 7483 Progress Way, Delta BC V4K1E7				Mailing address / Adresse postale City / Ville Province Postal code / Code postal H 9 7483 Progress Way, Delta BC V4K1E7				Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous			
E-mail / Courriel électronique Tel. No. / N° de tél. 604 453 1220				E-mail / Courriel électronique Tel. No. / N° de tél. ()				Company name / Nom de l'entreprise Mailing address / Adresse postale City / Ville Province Postal code / Code postal Delta BC V4K1E7			
Shipping site address / Adresse du lieu de l'expédition H 9 7483 Progress Way City / Ville Province Postal code / Code postal Delta BC V4K1E7				Vehicle / Véhicule Trailer - Rail car No. 1 1 ^{re} remorque - wagon Registration No. / N° d'immatriculation B14111 Prov. 26 BC				Date received / Date de réception Year / Année Month / Mois Day / Jour 11 02 08 Time / Heure 11:35 AM			
Intended Receiver / consignee Réceptionnaire / destinataire prévu Mailing address / Adresse postale City / Ville Province Postal code / Code postal 5400 Paul Street Delta BC E-mail / Courriel électronique Tel. No. / N° de tél. ()				Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial BC603161				Receiving site address / Adresse du lieu de destination 5400 Paul Street City / Ville Province Postal code / Code postal Delta BC V4K1E7			
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) MESS/IMMUNOMETER Year / Année Month / Mois Day / Jour 11 02 08				Signature: Tel. No. / N° de tél. 604 952 1032				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 36			
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 9				Packaging/Contentant No. / N° Codes Int-ext 10				Phys. state Etat phys. 11			
Quantity received Quantité reçue 12				Units L or / ou Kg Unités 13				Comments Commentaires 14			
Handling Code / Code de manutention 15				Shipment / Envoi Accepted / Refused Accepté / Refusé 16				Decont. Pack. / Veh. Cont. / Véh. 17			
Notice No. N° de notification 18				Notice Line No N° de ligne de la notification 19				Shipment Envoi 20			
Of / De 21				D or R code Code E ou R 22				C code Code C 23			
Basel Annex VIII or OECD Code Annexe VIII de Bâle ou Code OCDE 24				H code Code H 25				Y code Code Y 26			
Export Exportation 27				Import Importation 28				Customs code(s) Code(s) de douanes 29			
National code in country of / Code du pays 30				If handling code "Other" (specify) Si code de manutention « autre » (spécifier) 31				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) POYCHILCO				Signature Tel. No. / N° de tél. 604 952 1220				Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour 11 02 06 Time / Heure 11:30 AM			
Scheduled arrival date / Date d'arrivée prévue Year / Année Month / Mois Day / Jour 11 02 06				Special handling / Manutention spéciale <input type="checkbox"/> Attached / Joint: <input checked="" type="checkbox"/> As follows / Ci contre: 24 hr / 1800 567 7457				Signature Tel. No. / N° de tél. 604 326 460			

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 / consigneur Producteur / expéditeur NEWALTA (DELTA) BCG-00119 Company name / Nom de l'entreprise 49-7483 PROGRESS WAY DELTA B.C. V4G-1E7 Mailing address / Adresse postale City / Ville Province Postal code / Code postal 604-952-1220 E-mail / Courriel électronique Tel. No. / N° de tél. 604-952-1220 Shipping site address / Adresse du lieu de l'expédition 49-7483 PROGRESS WAY City / Ville Province Postal code / Code postal DELTA B.C. V4G-1E7		B Carrier Transporteur Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial LT-1074 Company name / Nom de l'entreprise M&R Environmental Ltd. Mailing address / Adresse postale City / Ville Province Postal code / Code postal 4023 Byrne Road E-mail / Courriel électronique Tel. No. / N° de tél. 604-876-0502 Vehicle / Véhicule Registration No. / N° d'immatriculation Prov. Trailer - Rail car No. 1 8211-35 BC 1st remorque - wagon Trailer - Rail car No. 2 2nd remorque - wagon		C Receiver / consignee Réceptionnaire / destinataire Registration No. / Provincial ID No. N° d'immatriculation - d'id. provincial BCG-28128/RS-17820 Receiver / consignee information same as in Part A Les renseignements du réceptionnaire / destinataire est la même qu'à la Partie A <input type="checkbox"/> Yes / Oui <input type="checkbox"/> No, complete the box below / Non, remplir la case ci-dessous Company name / Nom de l'entreprise Mailing address / Adresse postale City / Ville Province Postal code / Code postal E-mail / Courriel 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 <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. If waste or recyclable material to be transferred, specify intended company name / Si les déchets ou matières recyclables doivent être transférés, préciser le nom du destinataire Registration No. / Provincial ID No. N° d'immatriculation / d'id provincial	
Intended Receiver / consignee Réceptionnaire / destinataire prévu M&R Environmental Ltd. Mailing address / Adresse postale City / Ville Province Postal code / Code postal 4023 Byrne Rd. Burnaby BC V5J 3H0 E-mail / Courriel électronique Tel. No. / N° de tél. 604-876-0502 Receiving site address / Adresse du lieu de l'expédition 4023 Byrne Road City / Ville Province Postal code / Code postal Burnaby BC V5J 3H0		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 / consigneur for delivery to the receiver / consignee as set out in Part A and that the information contained in Part B is complete and correct. Attestation du transporteur: J'atteste avoir reçu les déchets ou matières recyclables du producteur / expéditeur en vue de leur livraison au réceptionnaire / destinataire, tels qu'ils figurent à la partie A et que les renseignements inscrits à la partie B sont exacts et complets. Name of authorized person (print): Nom de l'agent autorisé (caractères d'imprimerie): BARREY BILD Year / Année Month / Mois Day / Jour Signature 1 0 1 2 3 1		Quantity received Quantité reçue Units L or / ou kg Comments Commentaires Handling Code / Code de manutention Shipment / Envoi Accepted / Refused / Refusé Decont. / V. Cont. / V.	
Shipping name Appellation réglementaire Waste Oil Filters (Non-TOX Regulated) Petroleum Distillates, N.O.S. Leachable Toxic Waste (Metalium) (Waste Antifreeze)		Class / Classe Sub. class(es) / Classe(s) sub. NA UN No. / N° NU NA Packing / risk gr. / Gr. d'emballage / de risque NA Quantity shipped / Quantité expédiée 0 Units L or / ou kg KG Packaging / Contenant No. / N° 01 Codes Int-ext 01 Phys. state / Etat phys. S L L		Quantity shipped / Quantité expédiée 10,039 Units L or / ou kg L Packaging / Contenant No. / N° 01 Codes Int-ext 01 Phys. state / Etat phys. L	
Notice No. / N° de notification Notice Line No. / N° de ligne de la notification Shipment / Envoi Of / 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 / Importation Customs code(s) / Code(s) de douanes		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 (caractères d'imprimerie) ROYCHOO Tel. No. / N° de tél. 604-952-1220		Special handling / Manutention spéciale <input type="checkbox"/> Attached / Ci-joint <input type="checkbox"/> As follows / Ci-contre 24 hour number- 1-800-994-0051 Date shipped / Date d'expédition Year / Année Month / Mois Day / Jour 1 0 1 2 3 1 Time / Heure <input type="checkbox"/> A.M. <input type="checkbox"/> P.M. 9 30 Scheduled arrival date / Date d'arrivée prév. Year / Année Month / Mois Day / Jour 1 0 1 2 3 1	

QMLP Photo Log

SENES

QMLP As-Builts

SENES

Hazardous Material and Debris Inventory

SENES

Laboratory Certificates

- **Soil Chemistry**
- **Water Chemistry**
- **Incinerator Waste Chemistry**
- **Letter from Maxxam on Peat
Results (ET1101 Location)**

Soil Chemistry

SENES

APPENDIX B

DAILY REPORTS (SEE CD-ROM)

SENES



—

—

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-SENE; 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 residue 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-SENEC; 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

April 30, 2007

Our file Notre référence

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 |
|
<u>31(1)(m) - Matters Not Inconsistent with the Regulations</u> | | |
| 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

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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,

A handwritten signature in dark ink, appearing to read 'T. Kabloona', with a long horizontal flourish extending to the right.

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

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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.

A handwritten signature in dark ink, appearing to read 'T. Kabloona', with a long horizontal flourish extending to the right.

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 its 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**

of _____
(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:

1BR-ROB0813
Licence Number _____

NUNAVUT 07
Water Management Area _____

ROBERT'S BAY AND IDA BAY MINE SITE REMEDIATION PROJECT
Location _____

WATER USE AND WASTE DISPOSAL
Purpose _____

INDUSTRIAL – TYPE “B”
Classification of Undertaking _____

FIVE (5) CUBIC METRES PER DAY
Quantity of Water Not to Exceed _____

AUGUST 8, 2008
Date of Licence _____

AUGUST 30, 2013
Expiry Date of Licence _____

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 Facilities, 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 -C ₁₀ 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)anthracene	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



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:

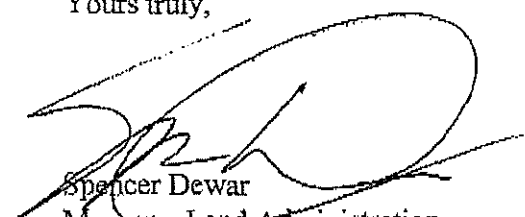
Re: Land Use Permit #N2007X0006
Type of Operation: Site Remediation
Location: Ida Bay and Roberts Bay

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



TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0059

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

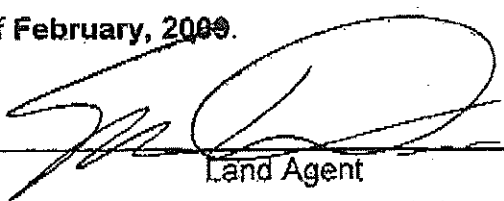
DIAND – Contaminated Sites

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



TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0060

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

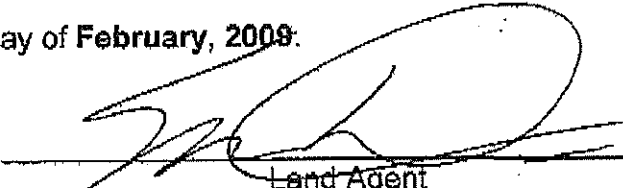
DIAND – Contaminated Sites

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



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



TERRITORIAL QUARRYING REGULATIONS

QUARRYING PERMIT NO.2009QP0062

Permit Fee.....Free Permit under Section 12(2)(a)
of Territorial Quarrying Regulations.

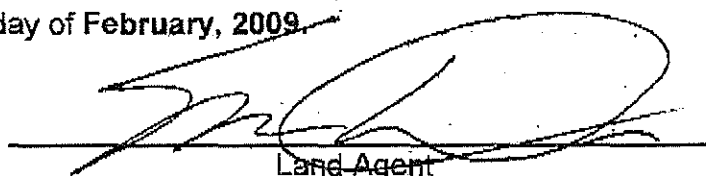
DIAND – Contaminated Sites

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



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



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



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

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 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



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



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.
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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.
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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



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- 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).

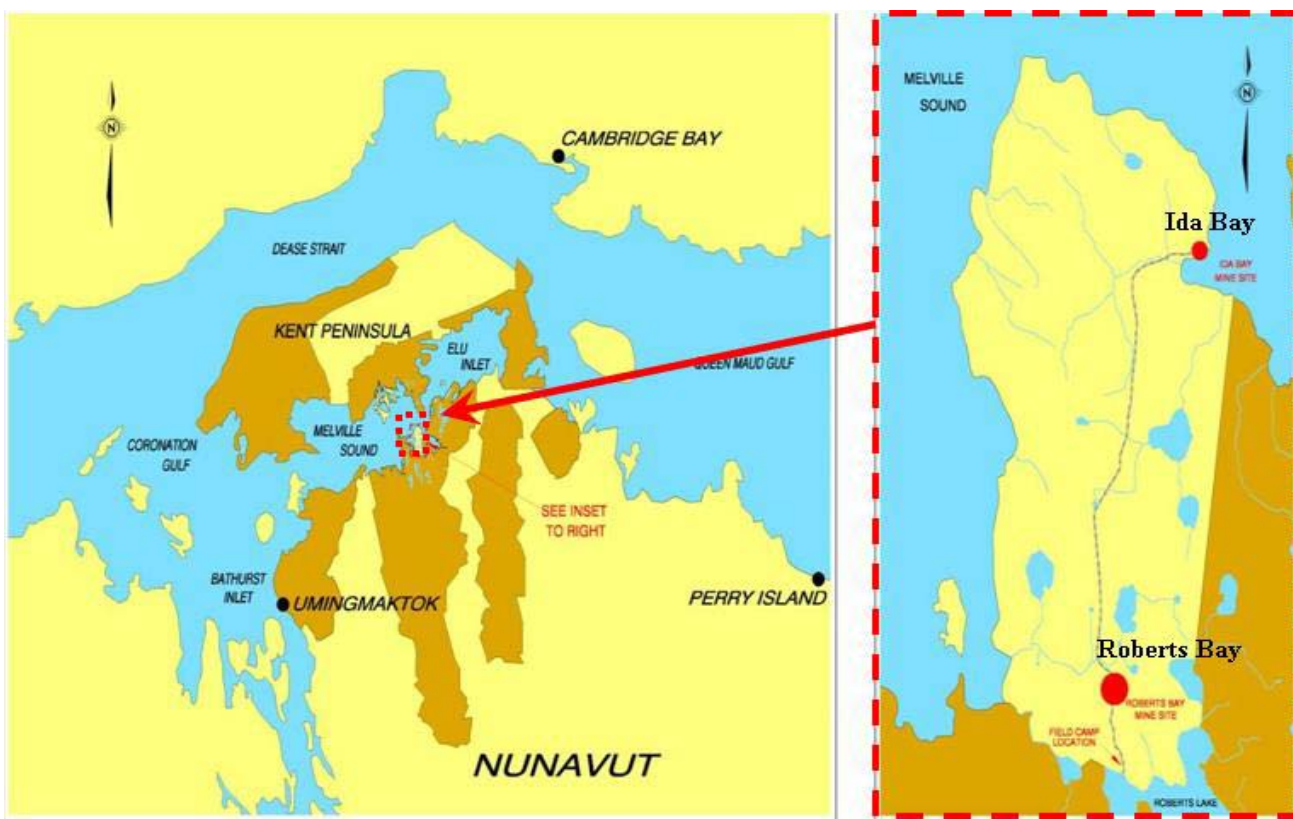


Figure 1: Roberts Bay and Ida Bay Location



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 NHL 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 NHL 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

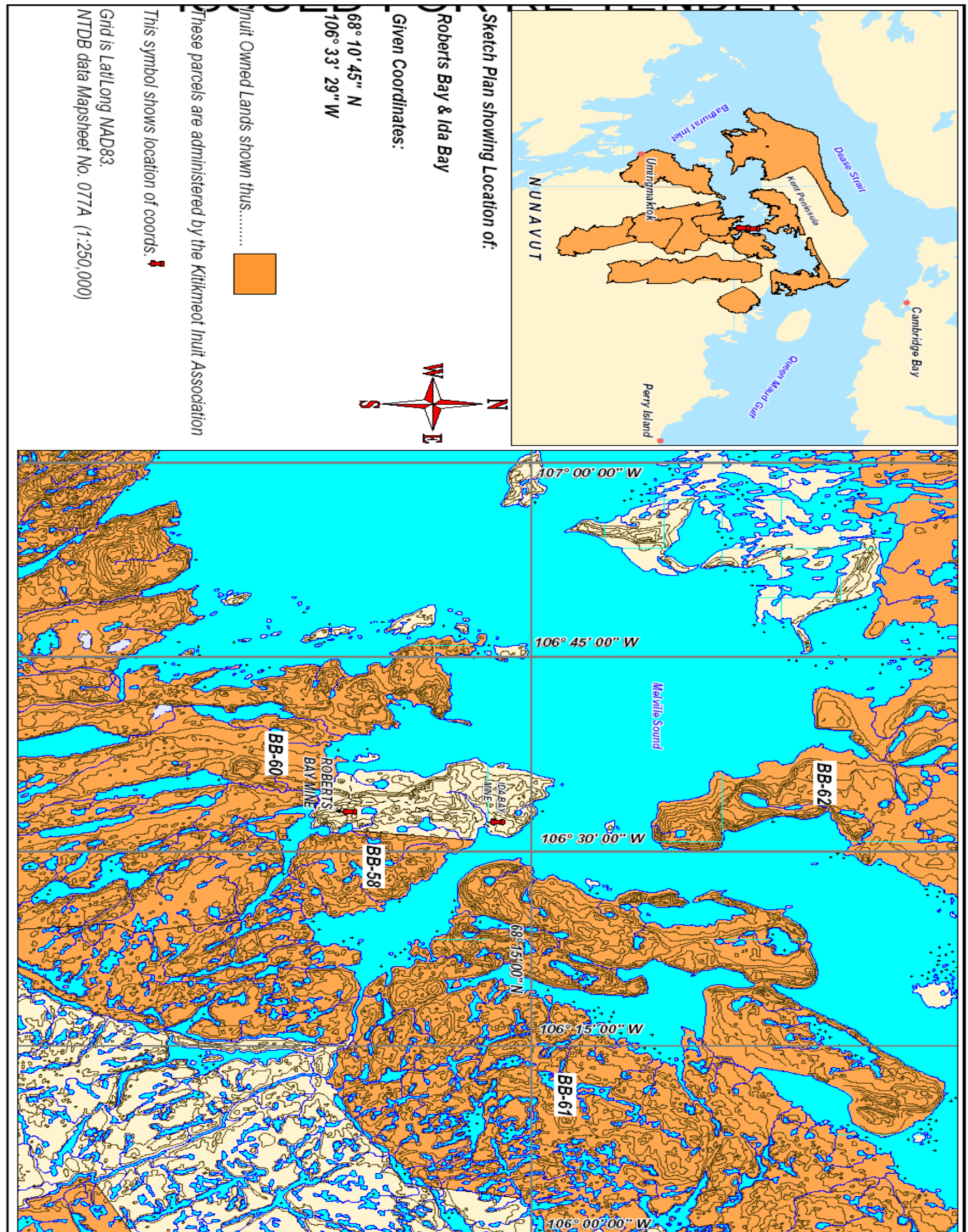
3.0 Quality Assurance/Quality Control

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.

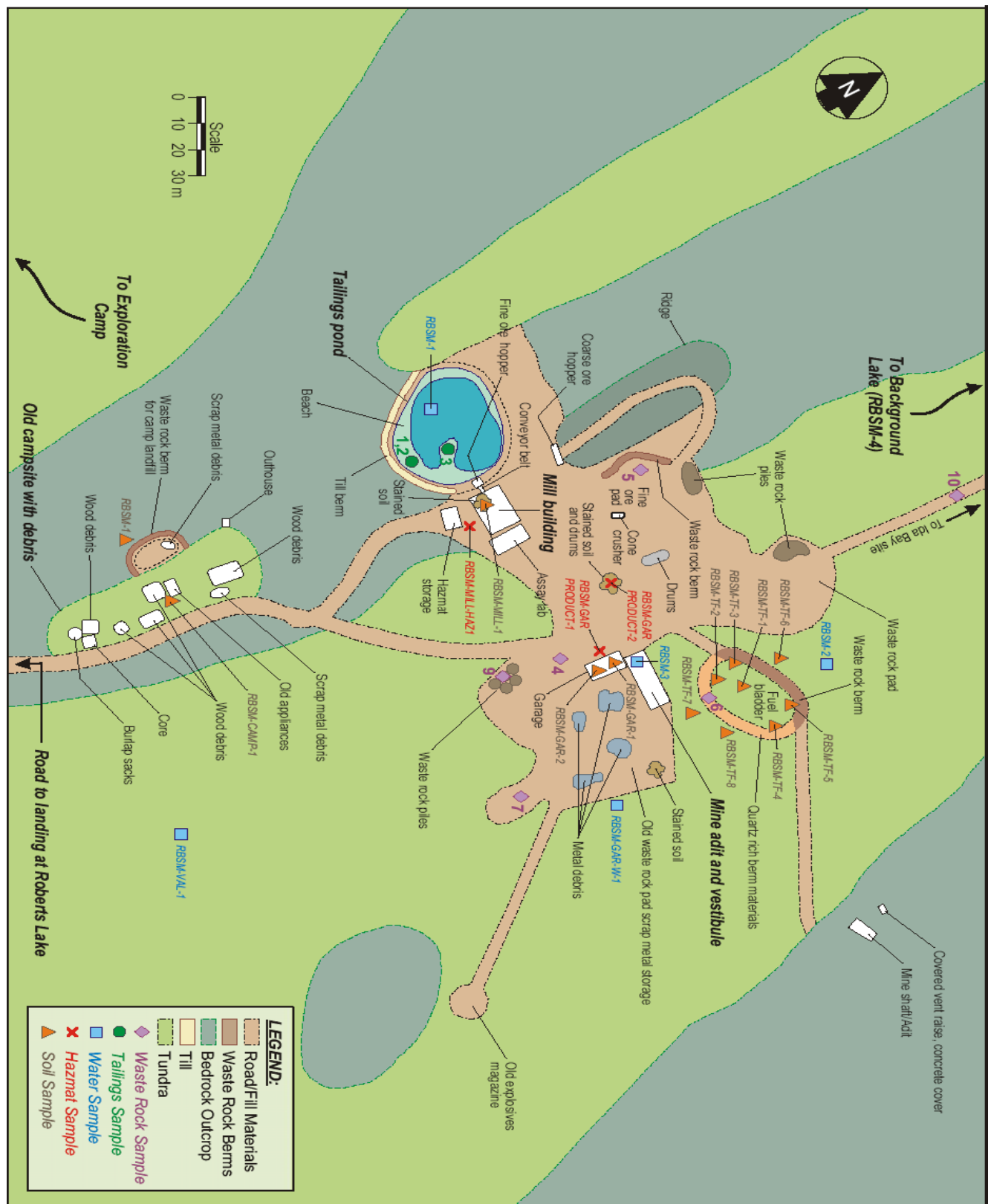


Appendix A: Roberts Bay and Ida Bay Map



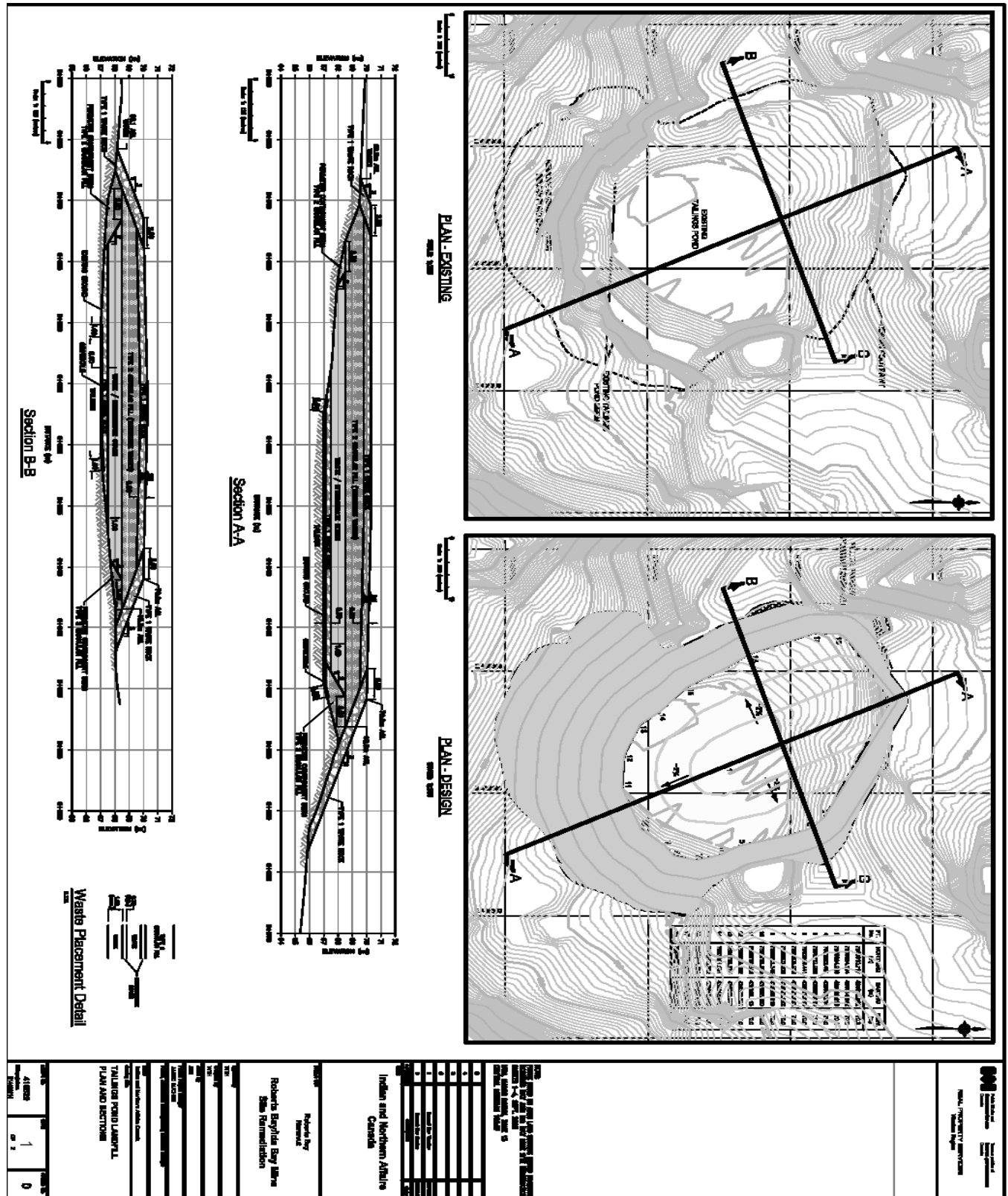


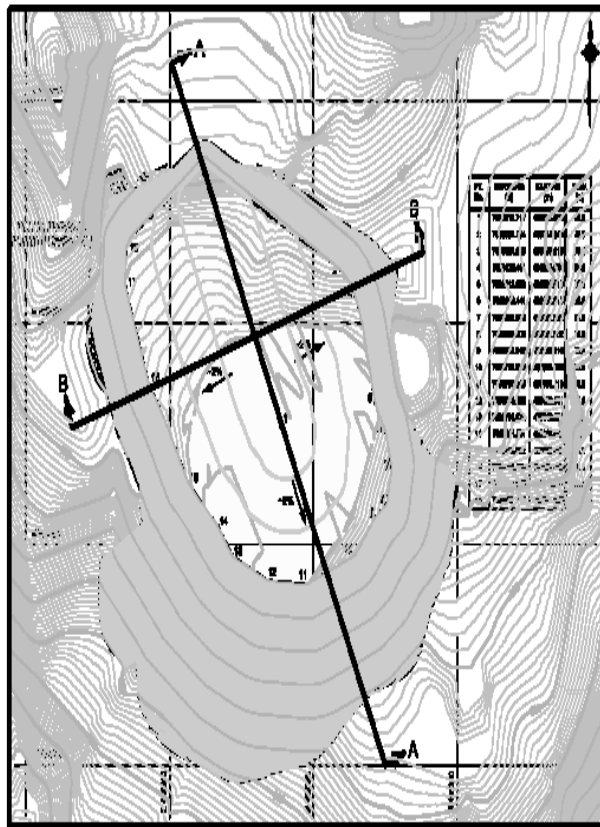
Appendix B: Non-Hazardous Waste Landfill Location Map (Tailings Pond Area)





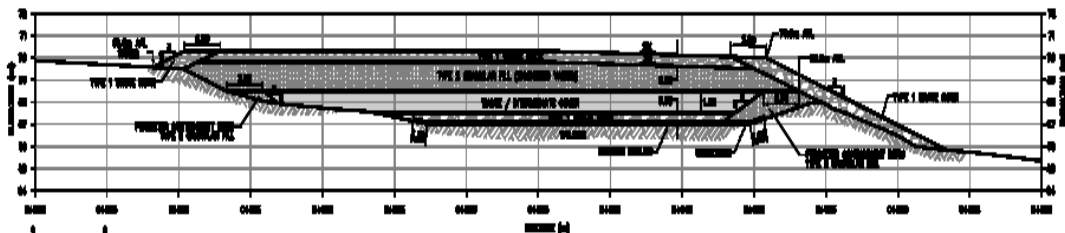
Appendix C: Non-Hazardous Waste Landfill As-Built Drawings



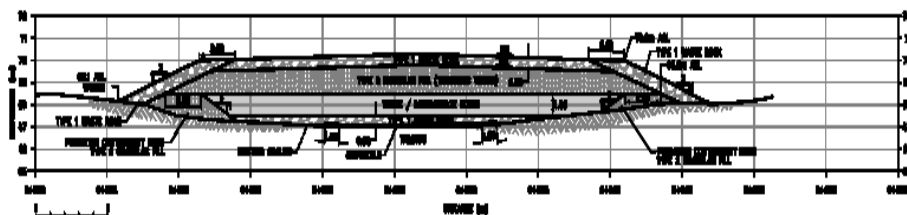


PLAN - DESIGN

Scale: 1" = 100'



Section C-C



Section D-D

REAL PROPERTY (Registered)	
Title No.	
Municipality	
County	
Province	
Country	
Indian and Northern Affairs Canada	
Roberts Bay	
Roberts Bay Mine	
Site Remediation	
Project No.	
Project Name	
Project Description	
Project Location	
Project Status	
Project Date	
Project Author	
Project Reviewer	
Project Approval	
Project Revision	
Project Version	
Project Page	
Project Total	



Appendix D: Visual Monitoring / Natural Monitoring Checklist



Roberts Bay and Ida Bay VISUAL MONITORING CHECKLIST

Date:	
Landfill:	
<i>Visually assess the landfill for the following items & provide a photograph record</i>	
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? <i>(percentage of surface area)</i>	
i) Is it localized or continuous?	
c) Where is the erosion occurring? <i>(i.e. along the toe, on the surface, through the berms)</i>	
d) Explanation: <i>(i.e. evidence of significant surface water run-off, poor material)</i>	
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? <i>(percentage of surface area)</i>	
i) Is it localized or continuous?	
ii) How deep is it?	
c) Where is the settlement occurring? <i>(i.e. near berms, near the centre of the facility)</i>	
d) Explanation: <i>(i.e. evidence of significant surface infiltration, water ponding, snow drifting)</i>	
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? <i>(percentage of surface area)</i>	
i) Is it localized or continuous?	
c) Where is the heaving/cracking occurring? <i>(i.e. along the toe, on the surface, through the berms)</i>	
d) Explanation: <i>(i.e. poor material, poor compaction, high water/silt content in cover material)</i>	



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

Results of 2010 Water Sampling

SENES

Water Tracking at Unnamed Pond

SENES

Health and Safety Report

SENES

Spill Report

SENES

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.

Wildlife Report

SENES

INAC Inspection Report

SENES

APPENDIX D
SITE PHOTOGRAPHS

SENES

