

NWB Annual Report

Year being reported: 2016

License No: 1BR-ROB1536 Issued Date: November 19, 2015
 Expiry Date: November 18, 2036

Project Name: Roberts Bay Long Term Monitoring

Licensee: Indigenous and Northern Affairs Canada (INAC)
 Contaminated Sites

Mailing Address: PO Box 2200
 Iqaluit NU
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Name of Company filing Annual Report (if different from Name of Licensee please clarify relationship between the two entities, if applicable):

N/A

General Background Information on the Project (*optional):

Roberts Bay and Ida Bay are abandoned mine sites located approximately 115 km southwest of Cambridge Bay, on the north coast of mainland Nunavut. Exploration for silver at Roberts Bay and for silver and gold at Ida Bay were carried out at the Robert Lakes Area between 1965 and 1972. The Roberts Bay site was an active silver mine in the early 1970s and was the subject of exploration in the 1980s and 1990s.

Remedial activities were conducted between 2008 and 2010, and included demolition of remaining site structures, securing mine openings, and disposal of non-hazardous waste and contaminated soils. A non-hazardous waste landfill referred to as the Solid Waste Management Facility (SWMF) was constructed over the former tailings pond at Roberts Bay, to contain non-hazardous material and to encapsulate and stabilize tailings water. Thermistors were installed in the SWMF to monitor permafrost freezeback, all of which were replaced in 2016.

As per departmental commitments to monitor the SWMF post-closure, a long term monitoring (LTM) program was initiated at Roberts Bay in 2010 and includes visual inspection, thermal monitoring, surface water sampling, soil sampling (as required), and natural environment monitoring. Refer to the *Roberts Bay and Ida Bay Long Term Monitoring Plan (2009, 2017)* for additional information.

Year 7 of the 25-year LTM Plan was completed in August 2016. The attached report *Long Term Monitoring, 2016 Roberts Bay, Nunavut (Roberts Bay 2016 LTM Report)* contains more details and results of the LTM activities undertaken in 2016.

Previous LTM events occurred in August 2010, August 2012 and August 2014. The next LTM event is scheduled for 2019. Future events will occur in 2024 and 2034.

Licence Requirements: the licensee must provide the following information in accordance with

Part B ▼ Item 1 ▼

A summary report of water use and waste disposal activities, including, but not limited to: methods of obtaining water; sewage and greywater management; drill waste management; solid and hazardous waste management.

Water Source(s):	Small quantities from Roberts Lake and ponded water near the SWMF	
Water Quantity:	0.05/year	Quantity Allowable Domestic (cu.m)
	<0.05	Actual Quantity Used Domestic (cu.m)
	0	Quantity Allowable Drilling (cu.m)
	0	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

- ☒ Solid Waste Disposal
☐ Sewage
☐ Drill Waste
☐ Greywater
☐ Hazardous
☐ Other:

Additional Details:

Surface water samples were collected at 5 locations (4 in proximity to the SWMF, 1 distant for background). Samples were collected from previously established surface water monitoring locations ROB-6, ROB-7, ROB-8, and ROB-9, and ROB-10. The total volume of water used was less than 5 litres.

Monitoring activities were conducted within a single day and was based out of Cambridge Bay so no camp was required. Solid wastes (packaging, paper towels, paper, kimwipes, filters, Teflon tubing) generated (< 0.5 m³) were collected and removed from the site at the completion of monitoring activities.

Refer to the *Roberts Bay and Ida Bay Lake Long Term Monitoring Plan (2009, 2017)* and the *Roberts Bay 2016 LTM Report* for details.

A list of unauthorized discharges and a summary of follow-up actions taken.

Spill No.: (as reported to the Spill Hot-line)

Date of Spill:

Date of Notification to an Inspector:

Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

N/A

Revisions to the Spill Contingency Plan

N/A - not applicable



Additional Details:

N/A

Revisions to the Abandonment and Restoration Plan

N/A - not applicable



Additional Details:

N/A

Progressive Reclamation Work Undertaken

Additional Details (i.e., work completed and future works proposed)

Year 7 of LTM occurred on August 19, 2016. A visual inspection of the SMWF and surrounding area was conducted in accordance with the Abandoned Military Site Remediation Protocol (AMSRP). The SMWF was found to be in acceptable condition, is performing as designed, and continues to contain enclosed waste. Thermal monitoring data was assessed and waste in the SWMF continues to remain frozen year round. All 3 dataloggers were replaced in 2016. Surface water samples were collected within the vicinity of the SWMF and exceedances of the Canadian Council of Ministers of the Environment (CCME) Canadian Water Quality Guidelines for the protection of Freshwater Aquatic Life for some metals (i.e., Al, Cd, Cu, and Fe) were observed (including ROB-9). These exceedances are not considered indicative of any deterioration in the integrity of the SWMF but surface water will be closely monitored as the LTM program continues to assess if this is a natural occurrence; a result of minor residual, post-remediation metals; or a result of the SWMF. Soil samples were not collected because there was no indication of seepage or staining. Please refer to the *Roberts Bay 2016 LTM Report* for additional information.

As per the *Roberts Bay and Ida Bay Long Term Monitoring Plan* (2009, 2017), future LTM events are scheduled for 2019, 2024, and 2034 (years 10, 15, and 25 respectively).

Results of the Monitoring Program including:

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where sources of water are utilized;

Details attached



Additional Details:

Additional details regarding water sources can be found in the *Roberts Bay and Ida Bay Long Term Monitoring Plan* (2009, 2017).

The GPS Co-ordinates (in degrees, minutes and seconds of latitude and longitude) of each location where wastes associated with the licence are deposited;

Not Applicable (N/A)

Additional Details:

Remediation was completed in 2010 and the only structure remaining at the site is the SWML. No waste was deposited on site in 2016. Any solid waste generated was removed from site at the completion of monitoring activities.

Results of any additional sampling and/or analysis that was requested by an Inspector

No additional sampling requested by an Inspector or the Board

Additional Details: (date of request, analysis of results, data attached, etc)

N/A

Any other details on water use or waste disposal requested by the Board by November 1 of the year being reported.

No additional sampling requested by an Inspector or the Board

Additional Details: (Attached or provided below)

N/A

Any responses or follow-up actions on inspection/compliance reports

No inspection and/or compliance report issued by INAC

Additional Details: (Dates of Report, Follow-up by the Licensee)

N/A

Any additional comments or information for the Board to consider

Physical observations of the SWML conducted during the 2016 LTM event indicate that the SWML at Roberts Bay is in acceptable condition and is currently performing as designed to contain enclosed waste. Thermal observations indicate that the waste in the SWMF continues to remain frozen year round. All dataloggers were replaced in 2016, so it is expected that further issues will be prevented in the future.

Date Submitted:

March 29, 2017

Submitted/Prepared by:

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GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "
Surface water sample locations at Roberts Bay (ROB):						
ROB-6 (SE of SWMF)	68	10	43.9	106	33	25.2
ROB-7 (SW of SWMF)	68	10	47.8	106	32	34.9
ROB-8 (NE of SWMF)	68	10	54.0	106	33	23.6
ROB-9 (Roberts Lake)	68	10	15.1	106	33	21.1
ROB-10 (SE of SWMF)	68	10	48.5	106	33	26.9

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min ,	Sec "	Deg °	Min ,	Sec "
N/A						