



Crown-Indigenous Relations
and Northern Affairs Canada

Relations Couronne-Autochtones
et Affaires du Nord Canada

Nunavut Regional Office (NRO)
P.O. Box 2200
Iqaluit, NU, X0A 0H0

August 30, 2018

Mr. Thomas Kabloona
The Chair,
Nunavut Water Board
P.O. Box 119, Gjoa Haven,
NU X0B 1J0

Dear Mr. Kabloona:

**RE: CAM-E (Keith Bay) Remediation Project: 2017 Annual Report
for Water Licence No: 1BR-KEI1722**

Please find attached the 2017 annual report for the Water licence No: 1BR-KEI1722 issued for the remediation of the CAM-E (Keith Bay) site.

If you have any questions or comments, please contact the undersigned or the Project Manager, Dele Morakinyo at dele.morakinyo@canada.ca, or by telephone at (819) 934 - 9224

Sincerely,

Charlotte Lamontagne
Director,
Contaminated Sites Program (NRO)
Tel: (867) 975-4730
Fax: (867) 975-4736
Email: charlotte.lamontagne@canada.ca

CC: Nunavut Impact Review Board (NIRB), Cambridge Bay, Nunavut



Canada

NWB Annual Report

Year being reported:

2017

License No: 1BR-KEI1722

Issued Date: January 17, 2017

Expiry Date: January 16, 2022

Project Name: CAM-E (Keith Bay) Site Remediation

Licensee: Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC)

Mailing Address: PO Box 2200
Iqaluit NU
X0A 0H0

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):

The Government of Canada has implemented the Federal Contaminated Sites Action Plan (FCSAP) to clean up federally owned contaminated sites, most of which the Department of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) (formerly INAC) is the custodian, and which pose risks to human health and/or the environment. One of such sites is the abandoned CAM-E Intermediate Distant Early Warning (DEW) Line Site, located about 75km to the east of Kugaaruk, Nunavut. CIRNAC applied for, and received funding approval under FSCAP, for the investigation and cleanup of this former DEW line site.

CAM-E was constructed in 1957 as an Intermediate DEW Line site. The station was taken out of service in 1963 and in 1965, responsibility for the site was assumed by INAC. The site consists of two (2) distinct areas – Area 1 - the main site area (which housed the station's module train, garage, warehouse, and so on) and Area 2 - the beach area. There are two (2) airstrips (one in each of the two (2) areas). The airstrips are in good conditions and they are currently being used for flight landing and taking off to move people and site supplies / resupplies, as the remediation works progress.

Facilities constructed at the main station - Area 1 - included a module train, warehouse, garage, Petroleum, Oil and Lubricant (POL) tanks, Quonset huts, storage pads and a radar tower. A small airstrip (460 m long), located north of the main station, was also part of the site infrastructure. Area 2 - the beach plateau area has a larger airstrip (915 m long); a bunker for cold storage and some Quonset huts. Area 2 is located approximately 5.6 km away from Area 1. Currently, all structures at both locations have been demolished and the site now consists of scattered debris of the felled structures (including the remains of the module train, radar tower, warehouse, garage, POL tanks and the huts). The site also contains large stockpiles of drums at the main site and several locations of scattered drums all over the site including the beach area; soils contaminated with petroleum products (e.g. gasoline and diesel); soils contaminated with metals (such as lead) and PCBs, asbestos containing materials,

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):	Freshwater Lake (within the site)	
Water Quantity:	14/day	Quantity Allowable Domestic (cu.m)
	8.5/day max	Actual Quantity Used Domestic (cu.m)
	N/A	Quantity Allowable Drilling (cu.m)
	N/A	Total Quantity Used Drilling (cu.m)

Waste Management and/or Disposal

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

Additional Details:

None

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)

No major spills were recorded in 2017.

Spill No.:

Date of Spill:

Date of Notification to an Inspector:

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

None

Revisions to the Spill Contingency Plan

SCP submitted and approved - no revision required or proposed



Additional Details:

None

Revisions to the Abandonment and Restoration Plan

AR plan submitted and approved - no revision required or proposed



Additional Details:

None

Progressive Reclamation Work Undertaken

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

WORK COMPLETED:

The 2017 construction season marked the beginning of remedial activities at the CAM-E site. During March and April 2017, equipment and personnel were mobilized to site using a winter road from Kugaaruk, NU, to set up camp facilities. Personnel were mobilized to site using aircraft access to begin remedial work in mid-June.

Remedial works began in June 2017 and were concluded in September 2017. Major works completed in 2017 include:

- Construction of Non-Hazardous Waste Landfill, Landfarm Facility and Tier II Soil Landfill.
- Surface debris removal and sorting from areas of soil excavation.
- Borrow source area development.
- Granular material production.
- Barrel sorting and crushing.
- Testpit investigation.
- Road and Airstrip upgrades and maintenance.
- Structure demolition and disposal.
- Hazardous material collection, sorting, and disposal and storage.
- Burning of non-painted wood debris.
- Excavation of 4120 m3 of Type B PHC soils and 1031 m3 of Type A PHC soils.
- Excavation of 212 m3 of Tier I soil, and 495 m3 of Tier II soil.
- Backfilling of completed excavations.
- Processing buried debris material.

FUTURE WORKS PROPOSED UNDER THIS LICENCE FOR COMPLETION IN 2018:

- Construction and closure of Waste Facilities.
- Decommissioning of Landfarm Facility.
- Decommissioning of borrow source areas.
- Demolition of site bunker.
- Surface debris removal and disposal.
- Barrel processing and crushing.
- Excavation of remaining impacted soils.
- Backfilling of excavated areas.
- Road and Airstrip upgrades and maintenance.
- Processing buried debris material.
- Re-grading Buried Debris Areas (BDAs).
- Decommission camp facilities.

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:

See GPS Co-ordinates below

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

Details attached



Additional Details:

See GPS Co-ordinates attached

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)

None

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)

None

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)

Any additional comments or information for the Board to consider

None

Date Submitted:

August 30, 2018

Submitted/Prepared by:

Dele Morakinyo

Contact Information:

Tel: (819) 934-9224

Fax: (819) 934-9229

email: dele.morakinyo@canada.ca

GPS Coordinates for water sources utilized

Source Description	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
Freshwater Lake	68	17	32.20	88	06.00	06.50

GPS Locations of areas of waste disposal

Location Description (type)	Latitude			Longitude		
	Deg °	Min '	Sec "	Deg °	Min '	Sec "
Sewage Treatment Facility	68	17	42.70	88	07	00.96
Non-Hazardous Waste Landfill	68	15	08.05	88	09	07.21
Landfarm Facility	68	15	12.24	88	09	07.94
Tier II Soil Disposal Facility	68	15	04.00	88	09	09.95

Appendix A:

CAM-E (KEITH BAY) REMEDIATION PROJECT

EXECUTIVE SUMMARY

CAM-E (KEITH BAY) FORMER DEW LINE SITE REMEDATION PROJECT

NON-TECHNICAL EXECUTIVE SUMMARY

1. BACKGROUND

The Government of Canada has implemented the Federal Contaminated Sites Action Plan (FCSAP) to clean up federally owned contaminated sites (most of which the department of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) (formerly INAC)) is the custodian and which pose risks to human health and/or the environment. CAM-E (Keith Bay) is one of those. CIRNAC applied for, and received funding approval under FSCAP, for the investigation and cleanup of CAM-E (Keith Bay) site in Nunavut.

CAM-E (Keith Bay) station was constructed in 1957 as an Intermediate Distant Early Warning (DEW) Line Station. The station (which is located 75 Km to the east of Kugaaruk) was operated for about 6 years and was taken out of service in 1963. In 1965, the responsibility for the site was assumed by CIRNAC.

CAM-E site consists of two (2) distinct areas – Area 1 - the main site area, and Area 2 - the beach plateau area. Area 1, initially, consisted of a module train, warehouse, garage, petroleum, oil and lubricant (POL) tanks, quonset huts, storage pads, a radar tower and an airstrip (460m long) while Area 2 - the beach plateau area, initially, consisted of a bunker for cold storage, some Quonset huts, and a longer (915 m long) airstrip. Area 2 (the beach area) is located approximately 5.6 km away from Area 1. All the structures on the site (both Area 1 and Area 2) have, now, been demolished and the site now consists of scattered debris and remains of the felled structures. The site also contains large stockpiles of drums at the main site (Area 1) and several locations of scattered drums at the beach area, soils contaminated with petroleum products (e.g. gasoline and diesel), soils contaminated with metals (e.g. lead) and PCBs, asbestos containing materials, batteries, gas cylinders and so on.

2. SITE LOCATION/ACCESS

CAM-E (Keith Bay) site is located at approximate latitude, 68° 17' 16" N; and Longitude, 88° 7' 10" W and at about 75 km east of Kugaaruk (the nearest Nunavut community to the site). The

site is accessible by ATV, snowmobile, airplanes, helicopter, CAT train and boat. Heavy equipment and materials can be moved to and out of the site by sealift or a combination of sealift and CAT train while personnel movement and supplies/resupplies can be done by helicopter, airplanes, ATV or boat.

Historically, it has been difficult to land barges at CAM-E or any other closer location (Kugaaruk inclusive) because of large ice build-ups in the area. So, a feasible approach is to sealift the heavy equipment to either Taloyoak or Repulse Bay (where the cargo ships reach) and then CAT train to site. Cargo ships do not go to Kugaaruk unless it is accompanied by an ice breaker. The contractor for this project (Kudlik) adopted the cargo ship with ice breaker approach and mobilized his equipment and supplies with shipment via sealift from Sainte-Catherine, QC to Kugaaruk, NU, in the summer of 2016 and then CAT trained to the CAM-E from Kugaaruk in winter, March/April, 2017.

3. PROJECT ACTIVITIES & SCHEDULE

Environmental site assessment (ESA) activities were carried out to identify and estimate the quantities and extents of contaminants of concerns on CAM-E (Keith Bay) site. Reports of these assessment studies were produced by Environmental Science group (ESG) (1995); WESA (February, 2012); and by Stantec (2013). The investigation reports are as follows: Based on these site assessment studies, a site clean plan was developed for the cleanup of the CAM-E (Keith Bay) site. Following the development of the draft of the plan, a community consultation, in the form of public meeting, was held in Kugaaruk on January 8, 2014. The meeting was well attended by members of the communities and feedbacks from the meetings were considered when the plan was finalized.

The cleanup of the CAM-E site planned for the years 2016 to 2020 commenced in 2016. Summary of tasks being completed at the site include: mobilization to site; improvement of site access routes, site internal roads and airstrips; Camp set-up and operation; and the actual remediation of the site. Full details of works completed and yet to be completed are contained in the Annual Report Spread sheet attached. Additional details are available in the cleanup plan document previously submitted to the regulatory bodies via Nunavut Planning Commission (NPC). The project is scheduled for final completion on March 31 2020.

Prior to the start of the remedial works, authorizations were obtained from the following regulatory bodies: Nunavut Planning Commission for conformity check; Nunavut Impact Review Board (NIRB) for Screening; Indigenous and Northern Affairs Canada (INAC) for Land Use Permit; and Nunavut Water Board (NWB) for Water Use Licence.

Following the completion of site remediation (by 2020) at CAM-E, INAC will embark on up to 25 years of long term monitoring of the site to ensure the stability of the non-hazardous landfill facility as well as the Tier II (metals and PCB) landfill at the site. Any problems discovered during the post-remediation monitoring shall be fixed. This monitoring procedure is in accordance to INAC's Abandoned Military Sites Remediation Protocol (AMSRP).

4. SOCIAL IMPACT OF THE PROJECT

As much as possible, the project has adopted and will continue to adopt solutions tailored to the northern environment and its inhabitants, by using local knowledge and including the unique needs of northerners and their environments in the remediation work plan.

Apart from the public community meeting held to present the draft clean up plan to the community in 2014, other community consultation meetings are being held in Kugaaruk as the site cleanup activities progresses to discuss employment and sub-contracting opportunities and work progress.

The contracting/procurement procedure being adopted for this project aims at maximizing the benefits of the project to the closest northern community (Kugaaruk) by employing local and northern employees and engaging the services of local and northern sub-contractors.

Appendix B:

CAM-E (KEITH BAY) REMEDIATION PROJECT

EXECUTIVE SUMMARY (INUKTITUT)

Appendix C:

CAM-E (KEITH BAY) REMEDIATION PROJECT

MINUTES OF COMMUNITY MEETING OF OCT 25 2017

Minutes of Meeting

Date of Meeting	October 25, 2017	Start Time	19:05 MST	Project Number	60515379
Project Name	CAM-E Environmental Site Remediation				
Location	Community Hall in Kugaaruk				
Regarding	Fall 2017 Community Meeting				
Attendees	Dele Morakinyo (INAC), Matthew McElwaine (PWGSC), Philippe Poulin (Kudlik), Thibault Baley (Kudlik), Ben Reich (AECOM), Members of the Kugaaruk Community (see attached attendance sheets) - Approximately 68 adults and 24 children in attendance (note that not everyone signed the attendance sheets).				
Distribution	INAC: Dele Morakinyo PSPC: Matthew McElwaine, Rebecca Studer-Halbach AECOM: Roland Merkosky, Greg Wright, Amber Zilinsky, Ben Reich Kudlik: François Bourassa				
Minutes Prepared By	Ben Reich				

PLEASE NOTE: If this report does not agree with your records of the meeting, or if there are any omissions, please advise, otherwise we will assume the contents to be correct.

Item	Discussion	Action
1.0	Introductions <ul style="list-style-type: none">Summary of project participants<ul style="list-style-type: none">INACPSPCKudlikAECOM	N/A
2.0	Presentation by Kudlik <ul style="list-style-type: none">Outline of PresentationGeneral site location (CAM-E, Keith Bay)Mention of CAT Train trail used to mobilize to siteOverview of site, including:<ul style="list-style-type: none">Plan of siteAerial view of site"Welcome to CAM-E" signOverview of work completed in 2017 construction season, including:<ul style="list-style-type: none">CAT TrainFirst mobilization to site via planeCamp situation	N/A

Item	Discussion	Action
2.0	Presentation by Kudlik (continued) <ul style="list-style-type: none"> ○ Obtaining freshwater from nearby lake (not much treatment required to make it potable) ○ Installation of monitoring wells ○ Processing of granular materials (including screening of sand) ○ Berms for facilities constructed using granular materials ○ Installation of geotextile / geomembrane ○ Excavation of contaminated soil and transporting soil to the constructed facilities ○ Tilling of hydrocarbon impacted soils ○ Pictures of the facilities including: <ul style="list-style-type: none"> ▪ Aerial view ▪ Pictures showing debris within Non-Hazardous Waste Landfill ▪ Tier II Landfill ○ Surface debris cleanup ○ Overview of barrel processing methodology ○ Structure demolition including: <ul style="list-style-type: none"> ▪ Antenna ▪ Garage ○ Soil testing to help make sure all contaminated soil was excavated ○ Buried debris encountered including an excavated fuel pipe and other debris that was sorted and hauled to the landfill • Work planned for next season (2018) includes: <ul style="list-style-type: none"> ○ Excavation of contaminated soil ○ Treatment of hydrocarbon impacted soil ○ Surface debris cleanup ○ Barrel processing ○ Landfill facilities closure ○ Preparation of camp and equipment for demobilization from site 	N/A
3.0	Questions/Comments: <ul style="list-style-type: none"> • Q: Are the sites all 50 miles apart? A: Yes. • Q: Where do we sign up for work? A: Next spring there will be representatives from Kudlik in Kugaaruk – you can sign up with them. • Q: When will mobilization to Keith Bay happen next year? A: June. 	N/A
4.0	Closing Comments / Draw Prizes	N/A

Sign in Sheet for Kugaaruk Community Meeting - October 25, 2017

Name		
Stacey Niptayok	769-7037	
Lisa Niptayok	"	
Janelle Niptayok	"	
Jeffrey Niptayok	"	
Helen Niptayok	769-6789	
Sheila Ananting		
Mary Wingak		
Damian Wingak		
Mary Tinashlu	769-7600	
Britney Ruben	769-6155	
Rene Tavalok	769-6155	
Theresa Kenoit	769-6054	
Alina Tungilik		
Nancy Jean Inutuinak	769-6350	
Elsa Inutuinak	769-6350	
Bruce Jr Tootiak	769-7057	
Roger Jiggak	769-6021	
Ryan Tegumia		
John Qagut	769-1006	

Sign in Sheet for Kugaaruk Community Meeting - October 25, 2017

Name
James Anguti 769-6770
Cedrick Anguti 769-6058
Jennifer Anguti 769 6058
Geraldine Illuitok 769 6155
Ann Niptayuk 769-6306
Kathy Anaittuq - 769-7946
Francis Anaittuq 769-7946
Ashley Tade 769-7946
Christine Inuksag 769-6051
Cheryl Etung 769-7057
Stevenson Kayak 769-7057
Martha Inuksag 769-6051
Leonie Mrlungayuk 769 6473
Jeannie Illuitok 6699
Maureen Subgut 6667
Solomon Subgut 6667
Jessica Inuksag 6105
Alicia Inuksag ⁷⁶⁹ 796 -6105
Lesley Marie Inuksag 769-6105

Sign in Sheet for Kugaaruk Community Meeting - October 25, 2017

Name
Tom Kagitok
Caitlin Tularialik
L. Nalungiaq
Suzanne Kregunark
Yanina Pynardjok
Joanne Ruben
Ruth Ruben
Austin Uggarluk
David Inuitok
Lutgard Angutigungunirle
Alicia Dirnging
Rosemary Apsaktaus
Jacob Sikkuruk
Kimberly Wingark
Kirby Niptayok
Ching Lukmy
Erik Bohlender
Adrian Bohlender
Debbie Oogagq

Sign in Sheet for Kugaaruk Community Meeting - October 25, 2017

Name
Adele Sigjuk 769-6028
Jorello Sigjuk 769-6028
Rick Anguti 867-769 6058
RENE NASALIK 769-7363
Gordon master 7363
Eli Qayutinnuaq 769-7721
Mary.m.QayagSaag 769-7721
Christine Qirnguaq 769-6055
Travis Nalungiasq 769-7174
Glen Sutherland 769-7012
Roger Anguti 769 6058
Conate Krejerkark 769-6805
LIR Allto 7696473

Sign in Sheet for Kugaaruk Community Meeting - October 25, 2017

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