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

April 30, 2019

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: 2018 Annual Report for Water Licence No: 1BR-KEI1722

Please find attached the 2018 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:** 2018

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. At the onset of the remediation program in 2017, various structures at both locations have been demolished and the site consisted only of scattered debris of the felled structures (including the remains of the module train, radar tower, warehouse, garage, POL tanks and the huts), 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, batteries, gas cylinders and so on. Following the remedial works completed at the site in 2017 and 2018, the entire site is now clean. Non-hazardous waste items were disposed off in an onsite Non-Hazardous Waste Landfill (NHWL) facility while Tier II soils were disposed off in a Secure Tier II facility onsite. Equipment,

Licence Requirements: the licensee must provide the following information in accodance 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:	5/day	Quantity Allowable Domestic (cu.m)
	2.4/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:

Potable water was obtained from Freshwater Lake as well as a second lake north of the site. Construction water was obtained from water bodies north of the Beach Airstrip. For the 2018, the average daily domestic use was 2.4 m3/day, while for construction the average daily use was 10.7 m3/day, both of which were below their permitted use of 5 m3/day and 35 m3/day, respectively. See the attached report by the Project's Departmental Representative for more 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: April 2018
Date of Notification to an Inspector: June 26 2018
Additional Details: (impacts to water, mitigation measures, short/long term monitoring, etc)

There was one unauthorized discharge consisting of 205 litres (L) of 15W40 motor oil. Spill from a barrel probably occured during the CAT Train in April 2018 when the barrel was probably hit by an equipment. Spill was not noticed until after snow thaw in June 2
6 2018, when it was reported to the inspector. Absorbents were used to contain and collect the spilled material, water and spilled material was pumped into a tote. Soil from below the area

---

Spill No.: None
Date of Spill: None
Date of Notification to an Inspector: N/A
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:

Work completed at CAM-E in 2018:

The 2018 construction season was the second and final construction season at the CAM-E site. During April, additional equipment, supplies, and fuel were mobilized to the site using a winter road from Kugaaruk, NU, in preparation for the construction season. Personnel were mobilized to site using snowmobile and aircraft to continue remedial work in early June. Remedial works restarted in June 2018 and were completed in September 2018. Major works completed in 2018 include:

- Construction and closure of NHWL, and Tier II Landfill.
- Decommissioning of a Landfarm Soil Treatment Facility.
- Excavation of 3,261 m^3 of Type B PHC contaminated soil, 195 m^3 of Type A PHC/Tier I contaminated soil, and 1,868 m^3 of Tier II contaminated soil.
- Treatment of Type B PHC contaminated soil.
- On-site disposal of Type A PHC contaminated soil, Tier I contaminated soil and Tier II contaminated soil.
- Backfilling of completed excavations.
- Development and restoration of borrow source areas.
- Production of granular material.
- Excavation and grading of buried debris areas; processing, sorting, and disposal of buried debris material.
- Demolition of site bunker.
- Collection, sorting, and disposal or containerization of surface debris.
- Collection, sorting, and disposal or containerization of hazardous material/waste.
- Sorting, processing, cleaning, crushing, and disposal of barrels and barrel content.
- Burning of non-painted, non-treated wooden debris.
- Maintenance of access roads and airstrip.
- Removal of culverts.
- Restoration of disturbed areas.
- Installation and testing of thermistors.
- Set-up of temporary storage area for waste, materials, supplies, and equipment to be transported off-site.

FUTURE WORKS PROPOSED UNDER THIS LICENCE FOR COMPLETION IN 2019:

- Decommission and remove winter camp facilities.
- Transport all waste, materials, supplies, and equipment by CAT Train from CAM-E to Kugaaruk, NU.
- Transport all hazardous materials from Kugaaruk, NU for off-site disposal at a southern

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:	March 31, 2019	
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:

WL Annual Report Information Produced by

AECOM - the Departmental Representative

AECOM
101 – 18817 Stony Plain Road NW
Edmonton, AB, Canada T5S 0C2
www.aecom.com

780 486 7000 tel
780 486 7070 fax

March 26, 2019

Dele Morakinyo
Project Manager, Contaminated Sites Program (NRO)
Crown-Indigenous Relations and Northern Affairs Canada
Government of Canada
25 Eddy Street, 10th floor
Gatineau, Quebec K1A 0H4

Dear Mr. Morakinyo:

Project No: 60579368 (400)

Regarding: 2018 Water Licence Reporting Requested Information
CAM-E DEW Line Site, Keith Bay, Nunavut

The following summarizes the information requested corresponding to Part B – General Conditions, Section 1 of Water Licence No. 1BR-KEI1722 (incorporating adjustments from Modification No. 1, Amendment No. 1, and Authorization to Use an Alternate Temporary Water Source).

a. The monthly and annual quantities of material deposited in the on-site Waste Disposal Facilities.

2018 Construction Season	Quantity (m^3) to Landfarm Facility	Quantity (m^3) to Sewage Treatment Facility	Quantity (m^3) to Non-Hazardous Waste Landfill	Quantity (m^3) to Tier II Soil Disposal Facility
2018, June	2,551	90	221	1,348
2018, July	650	70	348	450
2018, August	60	116	650	70
2018, September	0	126	990	0
2018 Annual Total	**3,261**	**402**	**2,209**	**1,868**

Note: NHWL quantity includes non-hazardous waste debris and Type A/Tier I contaminated soil.

b. The soil in the Landfarm Facility was sampled at the beginning of the 2018 construction season to provide a baseline assessment of the soil. Landfarm Cell 1, sampled between June 19, 2018 and June 20, 2018, had concentrations between 658 milligrams per kilogram (mg/kg) and 2,944 mg/kg for the summation of petroleum hydrocarbon (PHC) fractions F1 to F3 (Type B PHCs). Landfarm Cell 2, sampled between June 18, 2018 and June 20, 2018, had concentrations between 1,398 mg/kg and 2,990 mg/kg for Type B PHCs. The results indicated that more than half of the material was below the criteria for shallow Type B PHC soil (less than 2,500 mg/kg) and was ready to be removed, with the remaining material above 2,500 mg/kg but below 5,000 mg/kg (criteria for Type B PHC soil deeper than 0.5 m). The soil below criteria in each of the cells was removed from the Landfarm and stockpiled for later use.

The soil above shallow criteria was stockpiled in Cell 1 with additional Type B PHC soil excavated in 2018 and spread out in a uniform layer for treatment. Following several weeks of treatment, the southern two-thirds of Landfarm Cell 1 was sampled on July 24, 2018 and the northern third of Landfarm Cell 1 was sampled on August 14, 2018. Analytical results reported concentrations between 652 mg/kg and 1,918 mg/kg. Although all of the soil was below shallow criteria, due to the extended treatment period, the soil was left in place and covered with 0.5 metres (m) of granular fill as per approved Request for Modification (June 28, 2018).

c. The monthly and annual quantities of effluent discharges from the Landfarm Facility, Sewage Treatment Facility, Non-Hazardous Waste Landfill and Tier II Soil Disposal Facility.

2018 Construction Season	Quantity (m^3) from Landfarm Facility	Quantity (m^3) from Sewage Treatment Facility	Quantity (m^3) from Non-Hazardous Waste Landfill	Quantity (m^3) from Tier II Soil Disposal Facility
2018, June	0	0	0	0
2018, July	**0**	108	0	360
2018, August	0	158	0	0
2018, September	0	146	0	0
2018 Annual Total	**0**	**412**	**0**	**360**

d. The monthly and annual quantities of contaminated water in barrels, site contact water, and demolition rinse water discharged.

2018 Construction Season	Quantity (m^3) from Barrels	Quantity (m^3) from Site Contact Water	Quantity (m^3) from Demolition Rinse Water
2018, June	0	0	0
2018, July	0	1,065	0
2018, August	0	0	0
2018, September	0	0	0
2018 Annual Total	**0**	**1,065**	**0**

* Note that approximately 30 m^3 of contaminated water from barrels, stored in the bionest treatment system, remains to be treated prior to discharge in 2019.

e. Summary of all waste deposited at all Waste Disposal Facilities.

Location	Waste Deposited
Landfarm Facility	Type B PHC Soil
Sewage Treatment Facility	Sewage (greywater and toilet wastes)
Non-Hazardous Waste Landfill	Tier I Soil Type A Soil Unpainted metal and wooden debris Approved (non-hazardous) painted metal and wooden debris Empty/cleaned crushed barrels Geotextile and geomembrane from Landfarm Cell 2 Asbestos Containing Material (double bagged)
Tier II Soil Disposal Facility	Tier II Soil Ash from untreated/unpainted wood burning

f. No waste was backhauled to any community in Nunavut (NU) during the 2018 construction season. Wastes are expected to be backhauled to Kugaaruk, NU in April, 2019 and stored until sealift to Sainte-Catherine, Quebec in September, 2019.

g. Approximate GPS co-ordinates of all locations where wastes associated with the Project were deposited are summarized in the table below.

Waste Deposition Location	GPS Co-ordinates
Landfarm Facility	Lat/Lon: 68° 15' 12.24" N, 88° 09' 07.94" W
Sewage Treatment Facility	Lat/Lon: 68° 17' 42.70" N, 88° 07' 00.96" W
Non-Hazardous Waste Landfill	Lat/Lon: 68° 15' 08.05" N, 88° 09' 07.21" W
Tier II Soil Disposal Facility	Lat/Lon: 68° 15' 04.00" N, 88° 09' 09.95" W

h. Approximate GPS co-ordinates of all water sources and their ownership are summarized in the table below.

Water Source Location	GPS Co-ordinates	Ownership
Freshwater Lake	Lat/Lon: 68° 17' 32.22" N, 88° 06' 06.48" W	Crown Land
Alternate Freshwater Source	Lat/Lon: 68° 24' 25.02" N, 88° 05' 49.02" W	Crown Land
Water Shower 1 (Construction Usage)	Lat/Lon: 68° 15' 32.08" N, 88° 08' 25.73" W	Crown Land
Water Shower 2 (Construction Usage)	Lat/Lon: 68° 15' 28.32" N, 88° 08' 25.67" W	Crown Land

i. The monthly and annual quantities of freshwater used by the Project.

2018 Construction Season	Potable Water Quantity (m^3)	Construction Water Quantity (m^3)
2018, June	58	0
2018, July	90	0
2018, August	95	882
2018, September	40	386
2018 Annual Total	**283**	**1,268**

j. A summary of the Waste Disposal Facilities built in 2018 is listed below and Figures are found in **Attachment 1**.

- Landfarm Facility:
  - Cell 1 (original cell).
    - Construction completed in 2017.
    - Contaminated soil placement and treatment occurred June, 2018 to August, 2018.
    - Clean soil from first round of sampling (June, 2018) was removed and stockpiled east of Cell 1 in June/July, 2018.
    - Clean soil from second (July, 2018) and third (August, 2018) rounds of sampling was left in place and compacted to at least 95% of Standard Proctor Maximum Dry Density (SPMDD).
      - Geotextile and reinforced polyethylene (RPE) liner removed from anchor trenches and interior berm walls and placed in the Non-Hazardous Waste Landfill (NHWL).
    - 500 millimetres (mm) of granular pit-run material with a maximum particle size of 250 mm (Type 3 Granular Fill), consisting of treated soil removed from Cell 2, placed over Cell 1 treated soil and compacted to at least 95% SPMDD.
    - Berms cut to match grade of landfarm and sloped to 6(H):1(V).
  - Cell 2
    - Construction completed in 2017.
    - Contaminated soil treatment occurred in June/July, 2018.
    - Following receipt of analytical results (July, 2018), clean soil was removed and stockpiled south of Cell 2, while contaminated soil was removed and placed into Cell 1 for additional treatment.
    - 400 mm of granular pit-run material with a maximum particle size of 150 mm (Type 2 Granular Fill) was removed and stockpiled on south side of Cell 2 (July/August, 2018).
    - Geotextile and high density polyethylene (HDPE) liner removed and placed in the NHWL (July/August, 2018).
    - Berms and floor graded to match surrounding topography (August/September, 2018).
  - Monitoring Wells
    - Monitoring well MW18-10 installed on west side of Cell 2 in June, 2018 to replace monitoring well MW17-10 installed and decommissioned in 2017.

  - Following completion of Landfarm use, three monitoring wells (MW17-08, MW17-09, MW18-10) were decommissioned as follows:
    - Pipe cut 450 mm to 600 mm below ground surface.
    - Pipe and annulus backfilled with bentonite to 300 mm below ground surface.
    - Remaining portion backfilled with native material and mounded to provide drainage away from area and provide additional material in case of slumping.

- Non-Hazardous Waste Landfill (NHWL):
  - Berms were constructed to design height and reshaped in July, 2018. Riprap from oversize screening of Type B PHC soil was used as riprap slope protection on the berms, with placement in July, 2018.
  - Non-hazardous material (soil, debris, processed/crushed barrels) was transported to the landfill for disposal. Double bagged asbestos-containing materials were segregated in the northeast corner of the landfill. Used geotextile and liner, and washed/compacted Contractor fuel barrels, were disposed of within the landfill to provide infill in low areas.
  - Intermediate fill, consisting of Type A/Tier I contaminated soil excavated from the site and pit-run gravel and sand granular material (Type 1 Granular Fill) and 2 Granular Fill, was placed between compacted waste layers.
  - Due to limited availability of Type 3 Granular Fill at the site, the cap was redesigned on August 31, 2018 for the use of Type 2 or Type 3 Granular Fill provided the lower 400 mm of the cap contained at least 3% fines and the upper 700 mm of the cap contained at least 7% fines.
  - The NHWL was closed to waste placement on September 7, 2018, and placement of final layer of intermediate fill, consisting of Type 1 and 2 Granular Fill, was placed to provide a level surface to start cap construction.
  - The NHWL cap was re-designed September 8, 2018 as waste was identified above design grade in one area near the west-central berm. The entire cap was raised 400 mm to provide sufficient cover over the waste layer.
  - NHWL cap was completed on September 12, 2018 with removal of the access ramp and placement of riprap slope protection on the raised berms. Granular fill used in the cap construction was compacted to at least 95% SPMDD.
- Tier II Soil Disposal Facility:
  - Berm construction completed to elevation of upper liner and reshaped in July, 2018. Riprap from oversize screening of Type B PHC soil was used as riprap slope protection on the berms, with placement in July, 2018.
  - Liner anchor trench was excavated, liner installed in anchor trench, and anchor trench backfilled in July, 2018.
  - Continued placement of Tier II contaminated soil. Soil placed in landfill graded and track compacted in 300 mm thick lifts. Final placement of Tier II contaminated soil occurred on August 13, 2018.
  - Waste layer was surveyed and high spots regraded. A lift of Type 1 Granular Fill was placed to bring the landfill to designed waste height and create a level layer to start cap construction.
  - 300 mm of sand was placed on top of the fill prior to start of liner placement. Geotextile and liner installation occurred between August 31, 2018 and August 24, 2018.

- 300 mm of sand was placed on top of the geotextile followed by the placement of the cap, consisting of 2.75 m of Type 2 and 3 Granular Fill and 300 mm of Type 1 Granular Fill. Granular fill used in the cap construction was compacted to at least 95% SPMDD.
- The Tier II cap was completed on September 8, 2018 with removal of the access ramp and placement of riprap slope protection on the upper portion of the berms.
- Thermistors:
  - Thermistor casings were initially installed on the berms in June, 2018, however were decommissioned and re-installed in August, 2018 when they were reported to be in the wrong locations. Thermistor casings were decommissioned by cutting the casing at the height of the saturated berm and backfilling the casing with sand.
  - Thermistors installed in the berms were completed using an air rotary drill rig, and advanced to a depth of the bottom of the key trench. Casings were grouted in place to the elevation of the saturated berm. Additional casing lengths were added as berm/cap construction advanced.
  - Thermistors installed within the waste layer were initially excavated by excavator and an exterior casing placed. The interior casing was placed within the exterior casing and grouted in place to waste height. As the grout was placed, the exterior casing was removed. Additional casing lengths were added as cap construction advanced.
  - Once the thermistor cables and data loggers were installed in September, 2018, a 100 hour test was completed to confirm they were operational.

- Sewage Treatment Facility:
  - Sewer lines damaged over the winter were repaired in June, 2018 prior to use of the sewage treatment facility.
  - A second day pond was constructed in June, 2018. Native material from the pond was excavated and used to create raised berms. Extra liner was used to line the day pond.
  - Sewage Pond 4 was relined on July 16, 2018 due to damage sustained over the winter.
  - Following final discharge of the sewage ponds, remaining sludge and all pond liner was removed and containerized for off-site disposal. The area of the ponds was regraded to match the surrounding topography.
- Domestic Waste:
  - All combustible domestic waste generated as a result of camp operation was destroyed in a dedicated incinerator.
  - Non-combustible material, such as aerosol cans, used batteries, light bulbs and hazardous waste, was collected for backhauling and/or treatment at the conclusion of the project.

k. During 2018, the monitoring program included the volume of raw water sourced, the volume and quality of sewage discharge, volume and quality of discharged contact water, volume and quality of water discharged from the constructed facilities, and groundwater well monitoring. The quality of discharge water from the sewage treatment facility, contact water and Tier II Landfill are provided in **Attachment 2**. The volume of raw water obtained, as well as discharged from the sewage treatment facility, contact water, and Tier II Landfill are provided in points c, d, and i above. No water was discharged from the Landfarm or NHWL. The groundwater wells were frozen or dry during 2018 and no groundwater samples could be obtained. Information collected during groundwater well monitoring is provided in **Attachment 2**.

l. The following was collected for the Monitoring Program in 2018:

- Raw Water
  - Potable water was obtained from Freshwater Lake as well as a second lake north of the site. Construction water was obtained from water bodies north of the Beach Airstrip. For the 2018 construction season, the average daily domestic use was 2.4 cubic metres per day (m^3/day), while for construction the average daily use was 10.7 m^3/day, both of which were below their permitted use of 5 m^3/day and 35 m^3/day, respectively.
- Sewage Water
  - Sewage water was sampled by the Contractor prior to each discharge. All samples taken from the sewage ponds met the discharge criteria, with the exception of one taken on September 20, 2018. This sample came back with a high five-day biological oxygen demand (BOD_5), but was resampled after one week and met discharge criteria. AECOM sampled sewage water, along with the Contractor, for quality assurance for two sampling events. All samples met discharge criteria.
- Contact Water
  - Three contact water samples were collected from two areas of the Site. Parameters analyzed in two of the samples met applicable discharge criteria. The third sample did not meet discharge criteria and was not discharged outside of the excavation area.
  - Three water samples from barrel rinsate were collected from the Site. pH, oil and grease, total lead and toluene were found above discharge criteria and the water will be further treated before being discharged.
  - 1,065 m^3 of contact water was discharged in 2018.
- Constructed Facilities
  - One water sample was collected from the Tier II Landfill. Parameters analyzed met applicable discharge criteria.
  - 360 m^3 of water was discharged in 2018.
- Groundwater Wells
  - One groundwater well was installed west of the Landfarm to replace the one decommissioned in 2017.
  - All ten groundwater wells were monitored in July, 2018 and August, 2018. All groundwater wells were frozen or dry, and no groundwater samples could be collected.
- Future Monitoring Program
  - A long term monitoring (LTM) program was developed in 2018. A copy of the LTM program to be provided by Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC).

m. The 2018 construction season was the second construction season at the CAM-E site. During April, a winter CAT train occurred to haul additional equipment, supplies, and fuel to the site.

Personnel were mobilized to site in early June by snowmobile to start snow removal. Aircraft access to mobilize personnel began mid-June. Remedial work re-started in June, 2018 and concluded in September, 2018, and included the following:

- Construction and closure of NHWL, and Tier II Landfill.
- Decommissioning of a Landfarm Soil Treatment Facility.

- Excavation of 3,261 m^3 of Type B PHC contaminated soil, 195 m^3 of Type A PHC/Tier I contaminated soil, and 1,868 m^3 of Tier II contaminated soil.
- Treatment of Type B PHC contaminated soil.
- Disposal of Type A PHC contaminated soil, Tier I contaminated soil and Tier II contaminated soil.
- Backfilling of completed excavations.
- Development and restoration of borrow areas.
- Production of granular material.
- Excavation of buried debris areas and processing/sorting of buried debris material.
- Regrading of buried debris areas.
- Demolition of site bunker.
- Removal and disposal of windsock and tower.
- Removal, sorting, and disposal or containerization of surface debris.
- Collection, sorting, and disposal or containerization of hazardous material/waste.
- Sorting, processing, cleaning, crushing, and disposal of barrels and barrel content.
- Burning of non-painted, non-treated wooden debris.
- Maintenance of access roads and airstrip.
- Removal of culverts.
- Restoration of disturbed areas.
- Installation of one monitoring well, and decommissioning of three monitoring wells.
- Installation and testing of thermistors.
- Decommissioning of camp facilities.
- Set-up of winter camp facilities.
- Set-up of temporary storage area for waste, materials, supplies, and equipment to be transported off-site.

Remedial work that is expected to be completed during 2019 includes the following:

- Decommission and remove winter camp facilities.
- Demobilizing all waste, materials, supplies, and equipment from site.
- Transporting all hazardous materials for proper off-site disposal.

n. The Board did not request any studies related to waste disposal and/or reclamation in 2018, and no future studies are planned.

o. In 2018, there was one unauthorized discharge consisting of 205 litres (L) of 15W40 motor oil. It was expected a drum was broken during a winter CAT train in April, 2018 and was discovered in June, 2018 and reported to the NT-NU Spill Report Line. Stained snow was removed, absorbent sheets and booms were used to contain snow melt, and melt water was pumped to a tote tank for treatment. On July 12, 2018, 1 m^3 of potentially impacted soil was removed and placed in the Landfarm for treatment. Analytical results from a confirmatory soil sample collected from the area were below Abandoned Military Site Remediation Protocol (AMSRP) criteria.

p. No trenches or sumps were excavated at the site in 2018.

q. Public consultation/participation report to be provided by CIRNAC. Community meeting was held in Kugaaruk, NU on September 19, 2018.

r. No inspection or compliance reports were issued under this licence by an Inspector. An inspection was completed by Baba Pedersen, Resource Management/Water Resource Officer for CIRNAC, on July 29, 2018. The only deficiencies identified during the inspection were missing signs at Freshwater Lake, indicating sample location KEI-1, at the Sewage Treatment Facility, indicating sample location KEI-2, as well as signs indicating Ponds 1, 2, 3, and 4 at the Sewage Treatment Facility. These signs were erected during the 2018 construction season.

During 2018, the Contractor worked to complete deficiencies identified during the 2017 Northern Contaminated Sites Program (NCSP) Environment, Health and Safety (EHS) Compliance and Due Diligence Audit.

s. Executive summary of the construction summary report to be provided by CIRNAC.

t. No other details were requested by the Board.

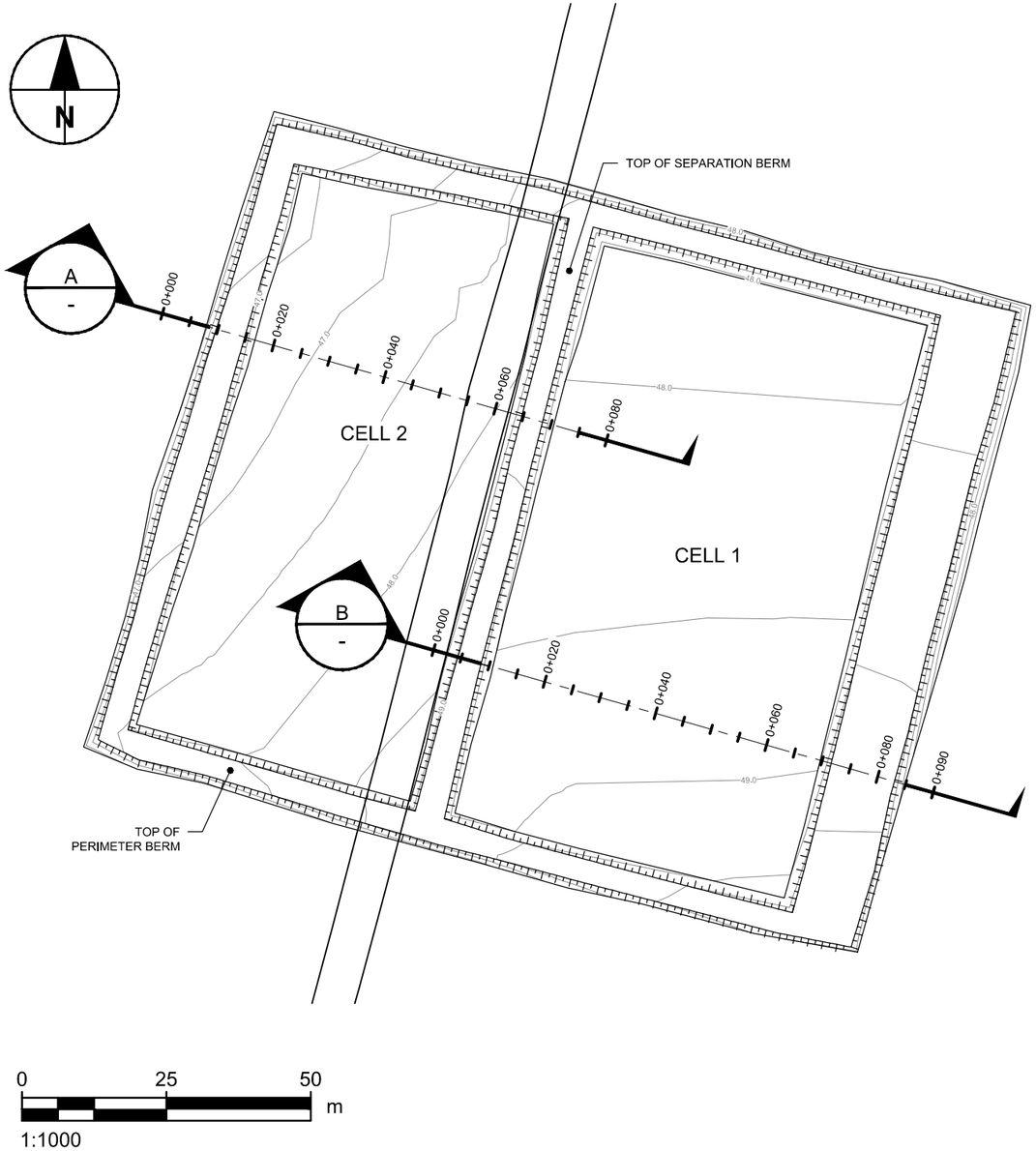
I trust the information presented herein meets your expectations for the Water Licence annual reporting requirements. If you have any questions or comments, please contact the undersigned at your convenience.

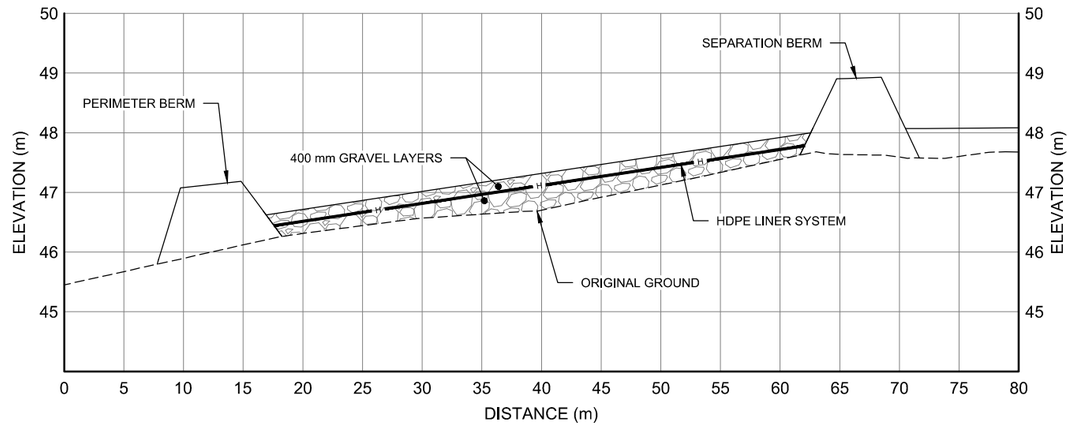
Sincerely,
AECOM Canada Ltd.

Greg Wright, M.Sc.
Project Manager
T: 780-486-5922
E: greg.wright@aecom.com

AZ:cn

Encl. Attachment 1 – Figures
Attachment 2 – Monitoring Program Data





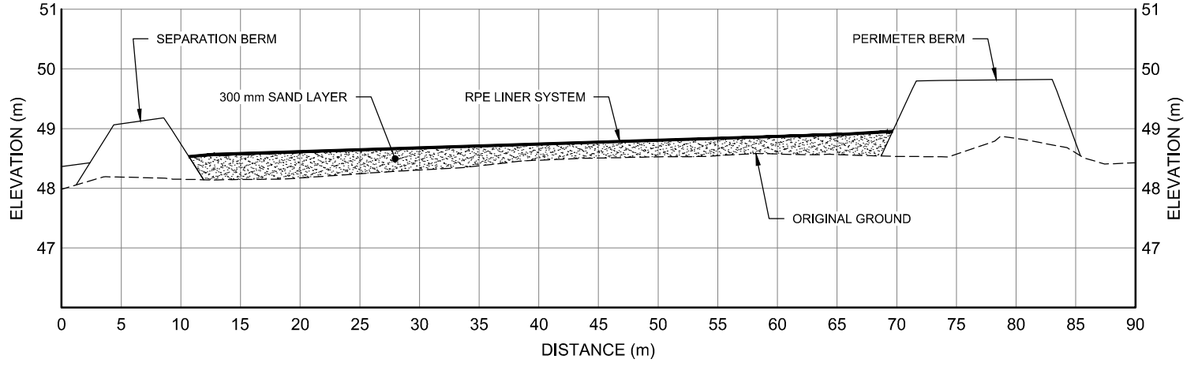
A SECTION

-

0 12.5 25 m

0 2.5 5

H=1:500
V=1:100



B SECTION

-

0 12.5 25 m

0 2.5 5

H=1:500
V=1:100

Issue Status: FINAL

Project Management Initials: Designer: ____ Checked: ____ Approved: ____ ANSI B 279.4mm x 431.8mm

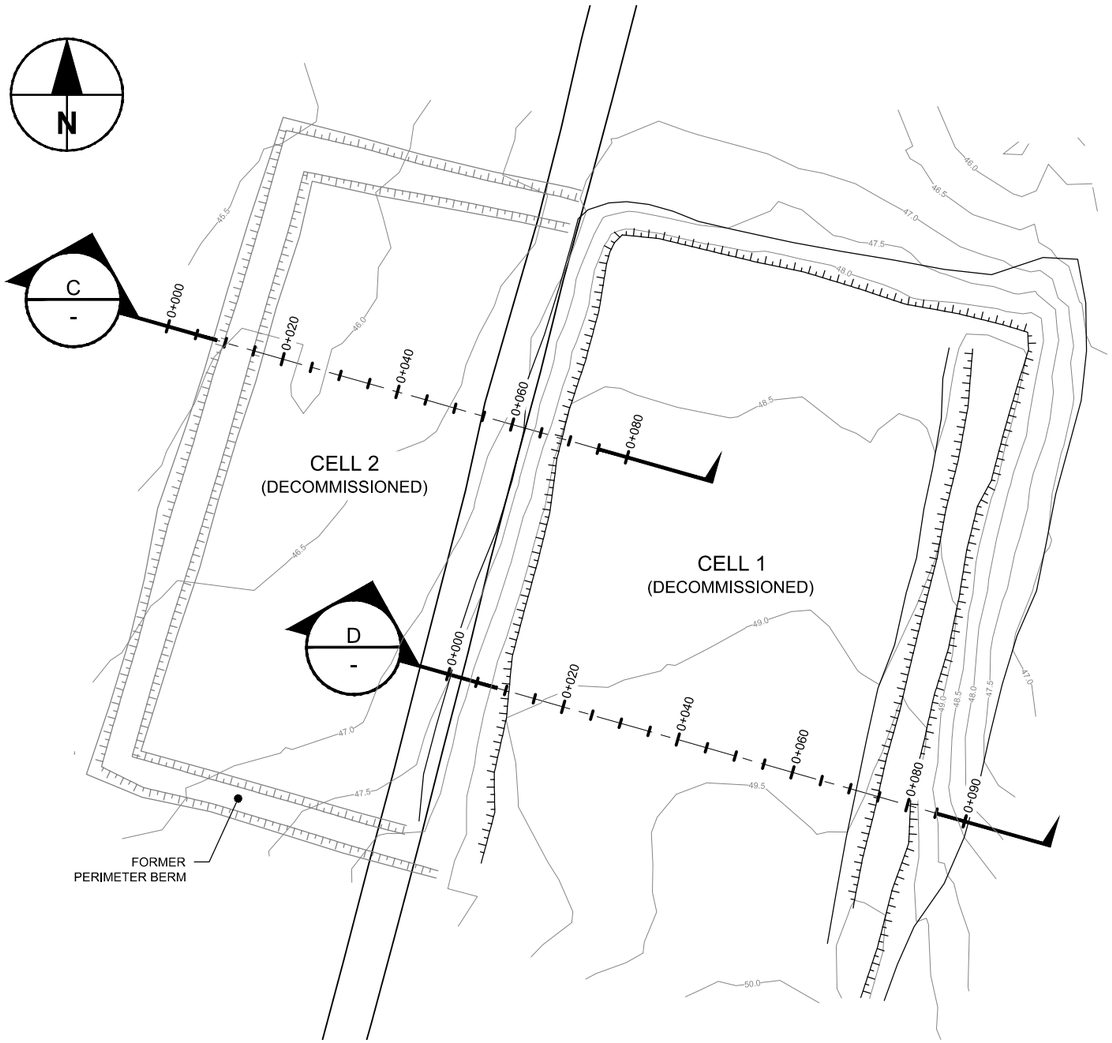
Last saved by: EROSC(2019-03-25) Last Plotted: 2019-03-25
Filename: P:\60579368\900-CAD_GIS\910-CAD\30-FIGURES\H101160579368-FIG-01-0000-H-0001.DWG

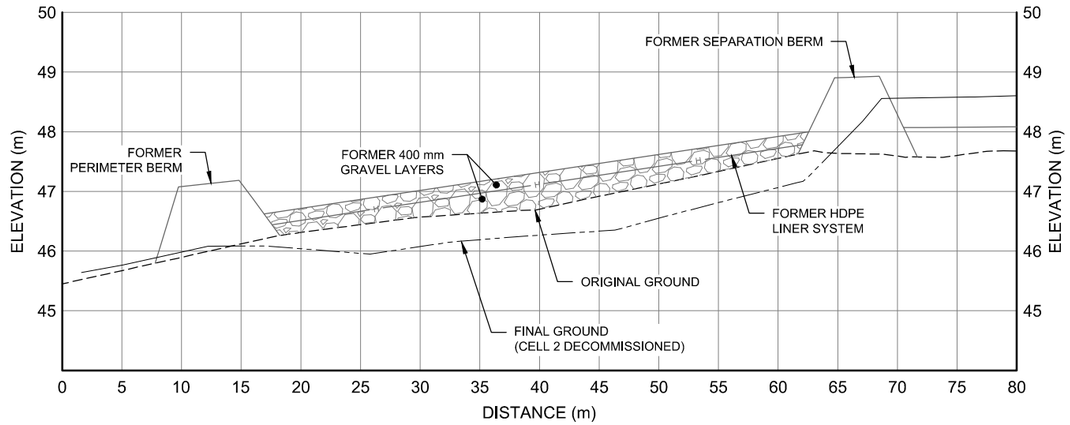
CAM-E REMEDIATION PROJECT
2018 WATER LICENCE REPORTING REQUESTED INFORMATION
Public Services and Procurement Canada
Project No.: 60579368 Date: 2019-03-25

LANDFARM CELL 1 AND CELL 2
AS-BUILT DETAILS DURING OPERATION

AECOM

Figure 1





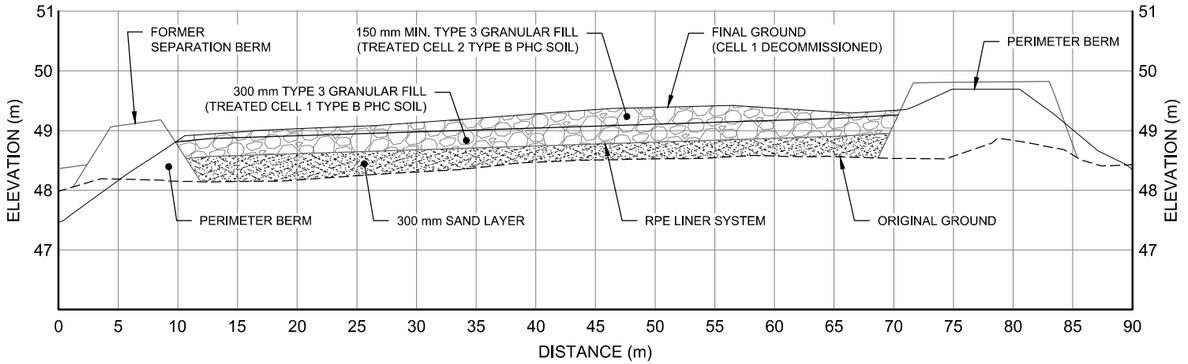
C | SECTION

-

0 12.5 25 m

0 2.5 5

H=1:500
V=1:100



D | SECTION

-

0 12.5 25 m

0 2.5 5

H=1:500
V=1:100

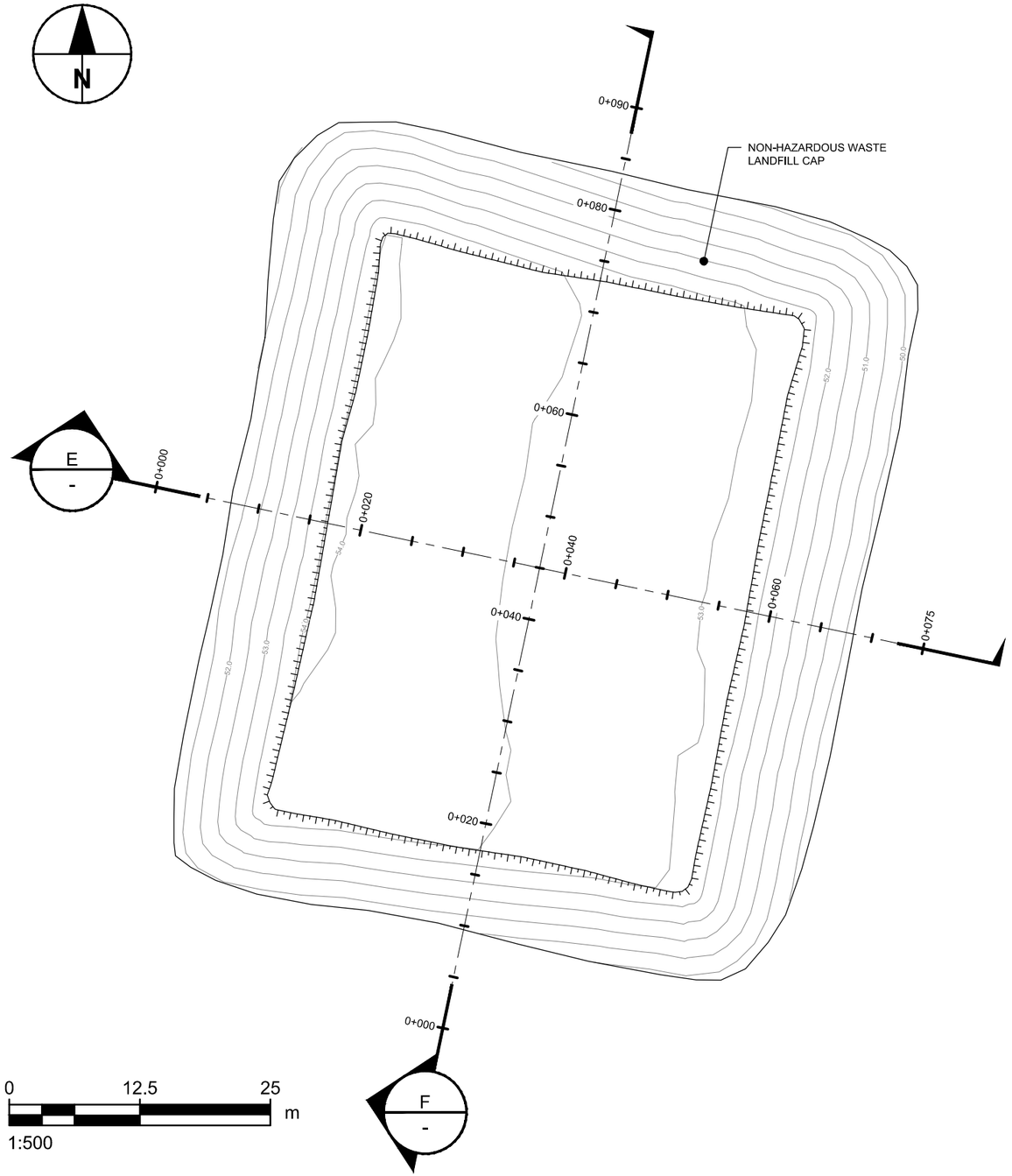
Issue Status: FINAL

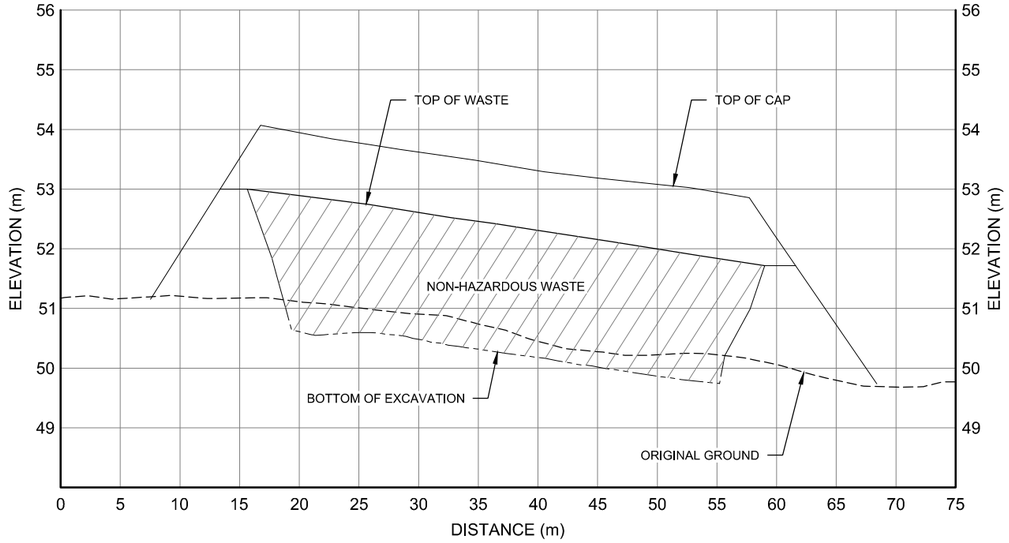
CAM-E REMEDIATION PROJECT
2018 WATER LICENCE REPORTING REQUESTED INFORMATION
Public Services and Procurement Canada
Project No.: 60579368 Date: 2019-03-25

LANDFARM CELL 1 AND CELL 2
DECOMMISSIONED DETAILS

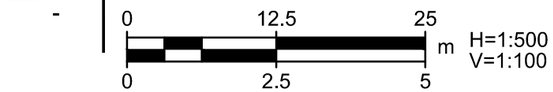
AECOM

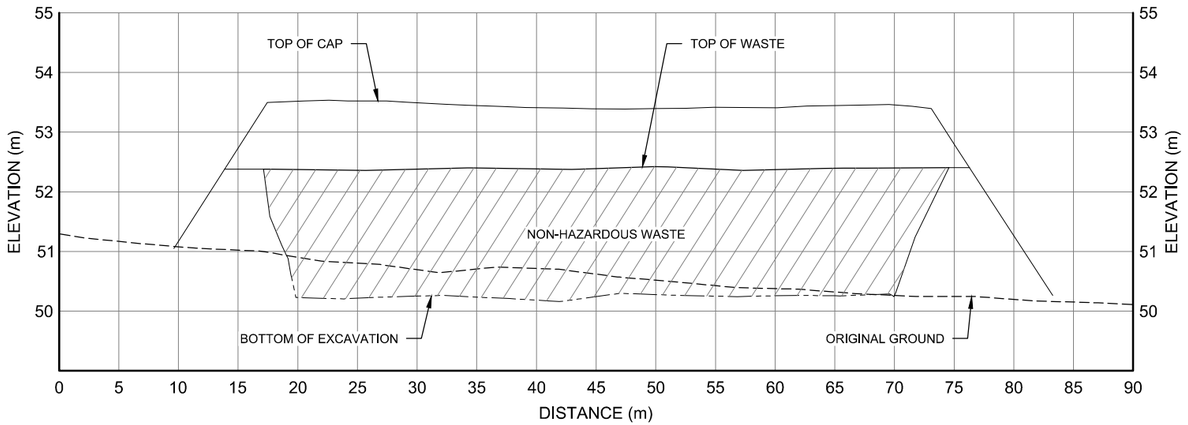
Figure 2



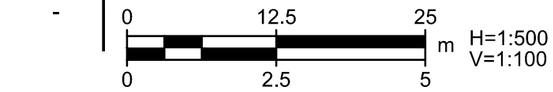


E | SECTION





F | SECTION



Issue Status: FINAL

CAM-E REMEDIATION PROJECT
2018 WATER LICENCE REPORTING REQUESTED INFORMATION
Public Services and Procurement Canada
Project No.: 60579368 Date: 2019-03-25

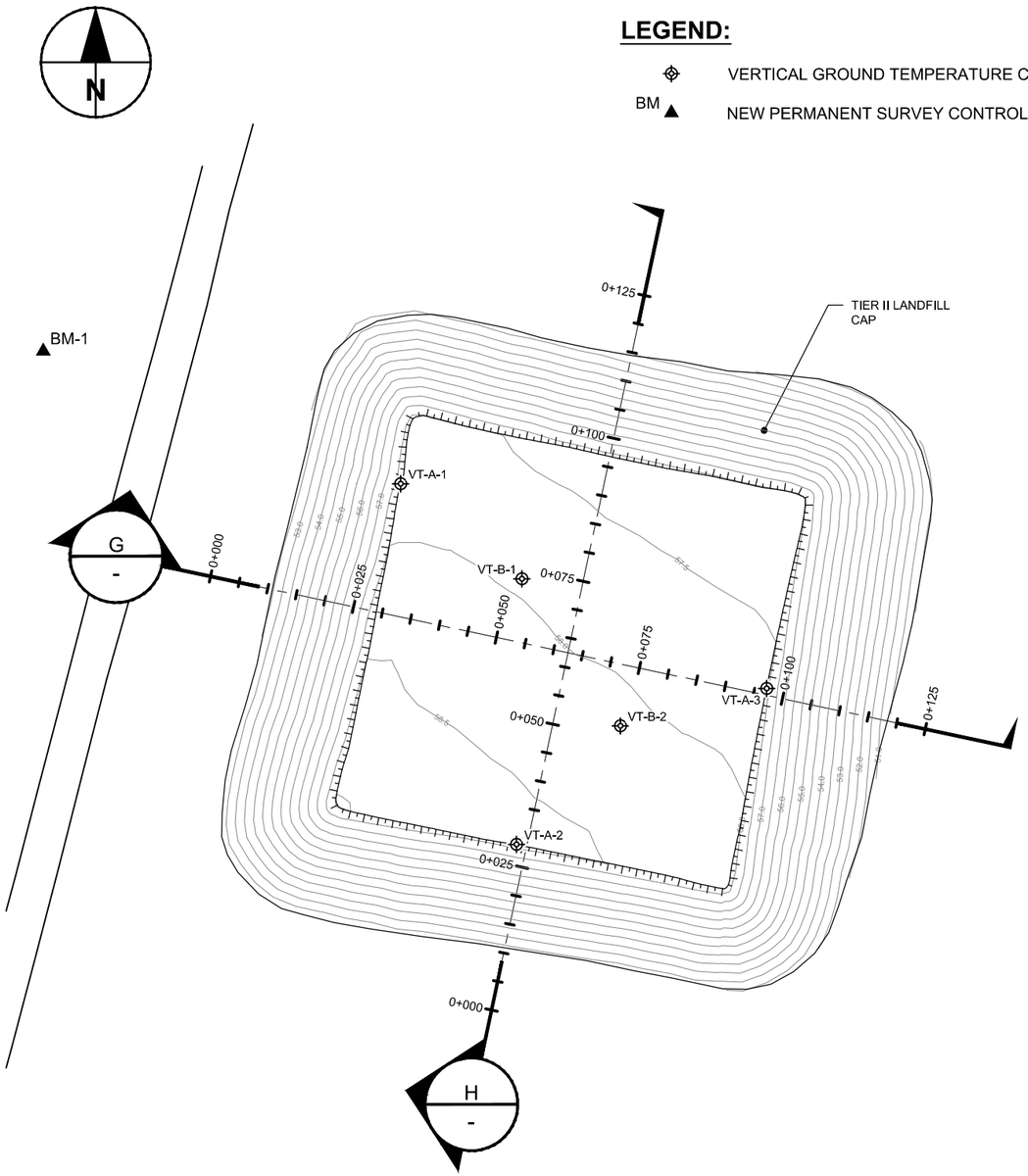
NON-HAZARDOUS WASTE LANDFILL AS-BUILT DETAILS

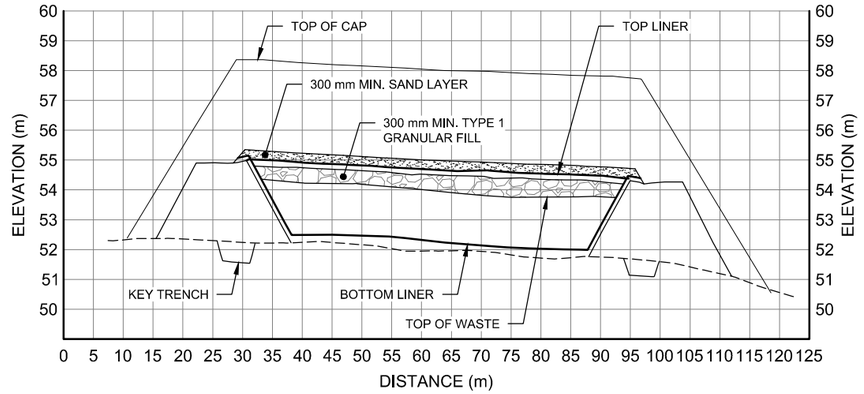
AECOM

Figure 3

LEGEND:

- VERTICAL GROUND TEMPERATURE CABLE
- BM ▲ NEW PERMANENT SURVEY CONTROL MONUMENT

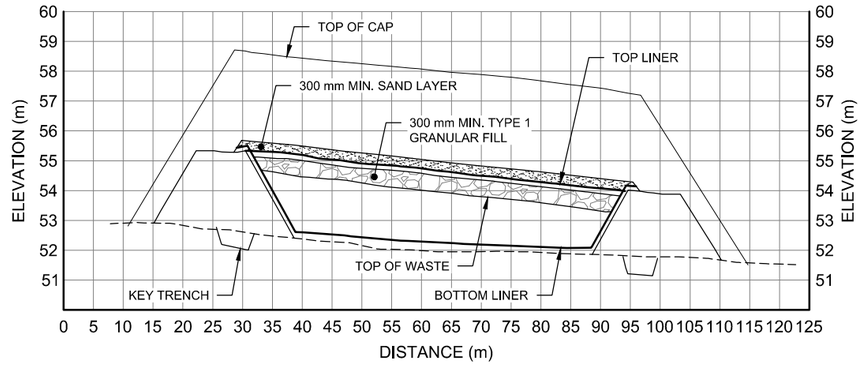




G - SECTION

0 25 50 m
0 5 10

H=1:1000
V=1:200



H - SECTION

0 25 50 m
0 5 10

H=1:1000
V=1:200

Issue Status: FINAL

CAM-E REMEDIATION PROJECT
2018 WATER LICENCE REPORTING REQUESTED INFORMATION
Public Services and Procurement Canada
Project No.: 60579368 Date: 2019-03-25

TIER II LANDFILL AS-BUILT DETAILS

AECOM

Figure 4

Table 1: 2018 CAM-E Sewage Water Analytical Results

Sample Name			CS-18-001	CS-18-002	CS-18-003	POND-4-1	CS-18-006	CS-18-007	CS-18-008	CS-18-009	CS-18-010	CS-18-011	CS-18-012	POND 4-2	CS-18-013	CS-18-014	CS-18-015	CS-18-016	CS-18-W-017	CS-18-I-017
Area			POND 3	POND 2	POND 1	POND 4	POND 3	POND 4	POND 1	STEEL TANK	POND 4	POND 3	POND 1	POND 4-2	POOL	POND 3	POND 4	POND 4/3	POND 4	POND 4
Sampled By			KUDLIK	KUDLIK	KUDLIK	AECOM	KUDLIK	KUDLIK	KUDLIK	KUDLIK	KUDLIK	KUDLIK	KUDLIK	AECOM	KUDLIK	KUDLIK	KUDLIK	KUDLIK	KUDLIK	KUDLIK
Date Collected			21-Jun-18 22-Jun-18	21-Jun-18 22-Jun-18	21-Jun-18 22-Jun-18	04-Jul-18	11-Jul-18	18-Jul-18	25-Jul-18	15-Aug-18	15-Aug-18	15-Aug-18	15-Aug-18	15-Aug-18	29-Aug-18	12-Sep-18	12-Sep-18	20-Sep-18	26-Sep-18	26-Sep-18
Parameter	Criteria	Units																		
Water Sewage																				
pH	6.0 - 9.0	pH Units	7.16	6.72	7.15	7.59	6.64	7.35	7.82	7.55	7.75	8.16	8.31	7.4	8.1	8.73	7.92	7.44	-	-
TSS	180	-	21.7	27.9	5.9	67	14.3	33.5	28	41.3	88.1	97.5	49.5	86	60.1	58.3	12.9	147	-	-
Oil and Grease	No Visible Sheen	mg/L	<5.0	<5.0	<5.0	12	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	-	-
BOD_5	120	mg/L	6	86	58	58	3	<2	41	21	26	23	17	21	24	8	16	**157**	112	36
Fecal Coliform	1000000	CFU/dL	2420	2420	<1	9700	<1	1	4	<1	10	213	216	2	96	4	10100	24200	-	-

Table 2: 2018 CAM-E Contact Water Analytical Results

Sample Name			W POL-18-001	WT2-18-001	WBDA-3-18-001	WTP-76-18-001	A-18-001	WBP-18-001	WBP-18-002
Area			POL	Tier II Landfill	BDA3	TP 76	Barrel Processing	Barrel Processing	Barrel Processing
Sampling Program			KUDLIK	KUDLIK	KUDLIK	KUDLIK	AECOM	KUDLIK	KUDLIK
Date Collected			21-Jun-18 22-Jun-18	21-Jun-18	11-Jul-18	18-Jul-18	12-Sep-18	20-Sep-18	20-Sep-18
Parameter	Criteria	Units							
Water Discharge (Part D)									
pH	6.0 - 9.0	pH Units	8	7.82	8.08	8.04	**9.79**	**9.77**	**9.82**
TSS	50	-	18.8	17.4	<3.0	<3.0	<1.0	-	-
Oil and Grease	15 mg/L; and No Visible Sheen	mg/L	<5.0	<5.0	<5.0	<5.0	**24,** no	<5.0	<5.0
Total Lead	0.050	mg/L	0.000745	0.000365	0.000406	0.00285	0.021	0.013	0.0151
Benzene	0.370	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.054	0.0197	0.00188
Toluene	0.002	mg/L	<0.00045	<0.00045	<0.00045	<0.00045	**0.092**	**0.0307**	**0.0176**
Ethylbenzene	0.090	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.018	0.00447	0.00363
Xylenes	0.18	mg/L	<0.00075	<0.00075	<0.00075	<0.00075	0.13	0.0292	0.023
Water Discharge (Part K)									
pH	6.0 - 9.0	pH Units	8	7.82	8.08	8.04	**9.79**	**9.77**	**9.82**
TSS	50	-	18.8	17.4	<3.0	<3.0	<1.0	-	-
Oil and Grease	No Visible Sheen	mg/L	<5.0	<5.0	<5.0	<5.0	**24,** no	<5.0	<5.0
Nitrate-Nitrite		mg/L	0.0015	0.098	0.0093	<0.0051	0.21	-	-
Total Phenols		mg/L	0.0013	<0.0010	0.0011	<0.0010	0.77	-	-
Total Hardness		mg/L	60.9	40	81.6	94.7	43.1	-	-
Sodium		mg/L	3.49	2.09	1.97	1.51	5.8	-	-
Magnesium		mg/L	6.55	4.21	6.02	5.46	1.9	-	-
Chloride		mg/L	6.38	4.09	3.42	3.11	6.7	-	-
Potassium		mg/L	0.703	0.23	0.622	1.3	2.2	-	-
Sulphate		mg/L	1.73	1.04	3.23	1.98	12	-	-
Calcium		mg/L	21.4	18.5	22.8	28	14	-	-
Conductivity		uS/cm	134	89.5	159	186	130	-	-
Ammonia Nitrogen		mg/L	-	-	-	<0.020	0.28	-	-
Total Alkalinity		mg/L	59.1	40.6	76.7	94.5	31	-	-
Total Copper		mg/L	0.00109	0.0006	0.00174	0.00568	0.0064	-	-
Total Iron		mg/L	0.24	0.18	0.028	0.039	0.14	-	-
Total Mercury		mg/L	<0.0000050	<0.0000050	<0.0000050	0.000006	0.0000045	-	-
Total Zinc		mg/L	<0.0030	<0.0030	0.0033	0.0041	0.021	-	-
Total Aluminum		mg/L	0.33	0.155	0.0201	0.0449	0.84	-	-
Total Cobalt		mg/L	0.00013	0.00012	<0.00010	<0.00010	0.00047	-	-
Total Cadmium		mg/L	0.000011	0.0000166	0.0000131	0.0000374	0.000026	-	-
Total Chromium		mg/L	0.0010	0.00035	0.00014	0.0004	<0.0010	-	-
Total Lead	0.050	mg/L	0.000745	0.000365	0.000406	0.00285	0.021	0.013	0.0151
Total Nickel		mg/L	<0.0010	0.00061	<0.00050	0.00063	0.0029	-	-
Total Phosphorous		mg/L	<0.050	<0.050	<0.050	<0.050	<0.10	-	-
Total Manganese		mg/L	0.0197	0.0185	0.00308	0.008	0.044	-	-
Total Arsenic		mg/L	0.00019	0.00014	0.00014	0.00016	0.00027	-	-
TPH		mg/L	-	-	-	-	<2.0	-	-
BOD5		mg/L	<2.0	<2.0	<2.0	15	1200	-	-
Total Coliform		CFU/100 mL	<1.0	<1.0	26	<1.0	<1	-	-
PAH		mg/L	Varies	Varies	Varies	-	Varies	-	-
Benzene	0.370	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.054	0.0197	0.00188
Toluene	0.002	mg/L	<0.00045	<0.00045	<0.00045	<0.00045	**0.092**	**0.0307**	**0.0176**
Ethylbenzene	0.090	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	0.018	0.00447	0.00363
Xylene	0.18	mg/L	<0.00075	<0.00075	<0.00075	<0.00075	0.13	0.0292	0.023

"-" Parameter was not sampled for by the contractor

Table 3: 2018 CAM-E Monitoring Well Monitoring Results

Monitoring Well ID	Date	Depth to Water (m)	Depth to Bottom (m)
MW17-01	22-Jul-18	Bailer Frozen	
	09-Aug-18	Bailer Frozen	
	27-Aug-18	-	1.120
MW17-02	22-Jul-18	-	1.124
	09-Aug-18	-	1.038
	27-Aug-18	-	1.042
MW17-03	22-Jul-18	1.050	1.078
	09-Aug-18	-	1.077
	27-Aug-18	-	1.078
MW17-04	22-Jul-18	0.994	1.027
	09-Aug-18	-	1.030
	27-Aug-18	-	1.037
MW17-05	22-Jul-18	1.007	1.047
	09-Aug-18	-	1.045
	27-Aug-18	1.001	1.007
MW17-06	22-Jul-18	0.953	1.020
	09-Aug-18	0.987	1.038
	27-Aug-18	1.026	1.044
MW17-07	22-Jul-18	0.944	1.024
	09-Aug-18	0.978	1.037
	27-Aug-18	0.980	1.037
MW17-08	22-Jul-18	1.143	1.203
	09-Aug-18	1.190	1.209
	27-Aug-18	-	1.210
MW17-09	22-Jul-18	1.128	1.185
	09-Aug-18	-	1.195
	27-Aug-18	-	1.200
MW18-10	22-Jul-18	1.117	1.155
	09-Aug-18	1.140	1.158
	27-Aug-18	-	1.150

"-" no reading, monitoring well was frozen or dry
No groundwater samples were collected for analysis due to insufficent quantities of water.

MW17-10 was decomissioned during the 2017 construction season.

Appendix B:

CAM-E Non Technical Executive Summary in English

CAM-E (KEITH BAY) FORMER DEW LINE SITE REMEDIATION 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 (located 75 Km east of Kugaaruk) operated for 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, prior to start of site remediation, 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, 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 were demolished and the site was full of scattered debris and remains of the felled structures. The site also contained 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. The whole site was remediated to acceptable remedial standards during 2017 and 2018 and it is now considered clean. The only work remaining to be completed under the current licence is sealift demobilization to the south.

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. Similar approach will be adopted during the demobilization to the south in 2019 – equipment, supplies and materials will be moved by CAT Train from CAM-E to Kugaaruk in April 2019 and shipped by sealift to south in August / September 2019.

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). Based on these site assessment studies, a site clean plan was developed for the cleanup of 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 NWB Standard Form for Annual Water Licence Report attached. Additional details are available in the cleanup plan previously submitted to the regulatory bodies via Nunavut Planning Commission (NPC). Field activities on this project were completed in 2017 and 2018. Final demobilization will be completed in 2019.

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 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.

Public community consultation meetings were held in Kugaaruk as the site cleanup activities progressed to discuss employment and sub-contracting opportunities and work progress. The meetings were well attended by community members.

The contracting/procurement procedure adopted for this project maximized and continues to maximize 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 C:

CAM-E Non Technical Executive Summary in Inuktitut

CAM-E (ᑭᐃᑦ ᑕᓚᐅᖅᓯᓐᓂᒃ) ᐅᖅᓯᑕᕆᔨᖅᑐᑦ ᖃᐅᔨᓴᖅᑲᐃᓂᖅᓯᑕ ᓄᓇᐅᑦ ᐅᑎᖅᑎᑕᐅᓂᖅᓯ ᐃᓕᓴᐅᔪᓐᓇᓄᑦ ᐱᓕᕆᐊᖅ

ᓇᓗᓇᓗᐊᖅᑎᑦ ᓇᐃᓕᑎᐊᖅᓭᒪᔪᑦ ᐱᓕᕆᐊᖅᐃᔨᐅᐊᖅᑐᑦ

1. ᐱᑎᐊᖅᑭᓕᐊᓂᐃᓐᓄᖅᓯᖅ

ᑲᓇᑕᐅᑦ ᑲᖏᒪᖅᑎᑦ ᐊᑐᓕᖅᑎᓯᓕᐅᕐᒪᑕ ᑲᓇᑕᐅᑦ ᑲᖏᒪᖅᑎᑕ ᓴᓗᒪᐃᓕᓕᓯᒪᔪᑦ ᓄᓇᑎᑦᑐᐅᑦ ᖃᑲᐃᐃᓕᐅᑲᐅᓂᖅᑎᓄᑦ ᑦᑲᓇᐅᑦ (FCSAP) ᑲᓇᑕᐅᑦ ᑲᖏᒪᖅᑎᑕ ᓄᓇᕆᔨᑎᖅᑎᑦ ᓴᓗᒪᓕᖅᓴᓴᑲᐅᓂᐊᕐᓗᑎᒃ (ᑕᒪᐃᓐᓂᒃ ᐱᓕᕆᐊᖅᓯᒪᓕᐅᕐᓂᖅᑐᑦ ᑲᓇᑕᐅᑦ ᑲᖏᒪᖅᑎᑕ ᓄᓇᖃᖅᓂᖅᓂᖅᓭᒪᔪᓂᒃ ᐱᓕᕆᖃᖅᑎᖅᑐᑦ ᐅᑭᐅᖅᑕᖅᑐᒪᒥ ᐱᓕᕆᐊᖅᑎᓂᒃᓂᒃ ᑲᓇᑕᒥ (CIRNAC) (ᐊᑎᖅᑲᓕᐅᖅᑐᑦ INAC)) ᓇᖅᒥᓂᖅᖏᓕᑕ ᐅᓗᓕᐊᓇᖅᑐᑦᓯᑎᓴᓗ ᐃᓄᖅᓄᑦ ᐊᐖᑎᑦᓴᖅᓴᓗ. CAM-E (ᑭᐃᑦ ᑕᓚᐅᖅᑎᓂᒃ) ᐃᓕᑎᐅᐅᖅᓯᑦ ᑕᑦᔨᓄᖅᓯ. ᑲᓇᑕᐅᑦ ᑲᖏᒪᖅᑎᑕ ᓄᓇᖃᖅᓂᖅᓂᖅᓭᒪᔪᓂᒃ ᐱᓕᕆᖃᖅᑎᑦᑐᐅᑦ ᐅᑭᐅᖅᑕᖅᑐᒪᒥ ᐱᓕᕆᐊᖅᑎᓂᒃᓂᒃ ᑲᓇᑕᒥ (CIRNAC) ᑐᓴᓕᓚᐅᖅᓯᒪᑦ ᐊᖅᑎᖅᑕᐅᑦᓯᑐᓗ ᑭᓇᐅᔪᓂᒃ FSCAP, ᖃᐅᔨᓴᖅᑎᓂᐊᕐᓗᑎᒃ ᑲᓇᒪᖅᓴᖅᑲᐃᓐᓄᑐᓗ CAM-E (ᑭᐃᑦ ᑕᓚᐅᖅᓯᓐᓂᒃ) ᓄᓇᕆᔨᑎᖅᑎᓂᒃᓂᒃ ᓄᓇᕗᒪᒥ.

CAM-E (ᑭᐃᑦ ᑕᓚᐅᖅᓯᓐᓂᒃ) ᐱᓕᕆᑦᐊᐅᐅᖅᖃᖅ ᑕᐃᑦᓭᒪᓂᒃ ᓴᓇᔨᐅᓕᐅᖅᓭᒪᓯᓕᑦ 1957 ᖃᐅᔨᓕᕐᕕᐅᑎᓂᔪᓂᒃ ᓭᕗᓂᖅᓯᓂᒃ ᑎᑭᑦᓕᐊᐅᐅᖅᖃᓕᖅᓂᖅᑦᑐᑦ ᐃᓕᑎᐅᔨᖅᑎᕐᑐᓂᒃᓂᒃ (DEW) ᐱᓕᕆᑦᐊᐅᑦᓂᔪᓂᒃ. ᑕᒪᓐ ᐱᓕᕆᑦᐊᐅᐅᖅᖃᖅ (ᐅᖅᓯᓭᔪᓂᖅᖃᖅᑐᖅ 75 ᑭᓕᒥᑐᑦ ᑯᓚᕐᔪᖏᑦ) ᐃᖅᑎᕆᓕᐅᖅᓴᖅ 6 ᐊᕿᔪᓂᒃ ᓄᖅᖃᖅᑎᑕᐅᑦᓯᑐᓗ ᐊᑐᓕᖅᑎᑦᓂᔭᒍ 1963. ᑕᐃᑦᓭᒪᓂ 1965, ᐱᓕᕆᐊᖅᑐᓕᐅᖅᓴᖅ ᒥᐊᓂᓚᐅᑕᖅᓵᔪᓂᓗ ᑲᓇᑕᐅᑦ ᑲᖏᒪᖅᑎᑕ ᓄᓇᖃᖅᓂᖅᓂᖅᓭᒪᔪᓂᒃ ᐅᑭᐅᖅᑕᖅᑐᒪᒥ ᐱᓕᕆᐊᖅᑎᓂᒃᓂᒃ ᑲᓇᑕᒥ (CIRNAC).

CAM-E ᓄᓇᕗᑎᖅᓱ ᐃᓗᑕᖅᑎᖅᓴᖅ ᒪᑭᖅᓂᒃ (2) ᐊᐅᐅᖅᓯᑐᖅ ᓄᓇᕆᔨᐅᐊᖅ – ᓄᓇᕗᑎᖅᓱᑦ 1 - ᐃᖅᑲᓇᐃᔨᖅᓂᐊᕐᓗᑎᒃ ᓄᓇᕆᔨᐅᐊᖅᑐᖅ, ᐊᒻᒪ ᓄᓇᕗᑎᖅᓱᑦ 2 - ᓭᓴᒥᓭᐅᖅᑐᖅᓴᖅ ᒪᓂᒃᑐᑦᓯᑎᓴᓗ. ᓄᓇᕗᑎᖅᓱᑦ 1, ᐃᓕᓴᕆᔨᖅᓂᒃ ᐅᑎᖅᑎᑕᐅᓕᐅᕐᓂᖅᓯᖅᓂᒃ ᓄᓇᑯᐅᑎᕐᐊᐸᖅᑕᖅᑲᓕᐅᖅᓴᖅ, ᓭᕐᓗᐊᖅᑕᖅᑲᖅᓵᔪᓂᓗ, ᐱᓇᓚᖅᑕᖅᑲᖅᓵᔪᓂᓗ, ᐅᖅᓭᐊᓗᓭᓚᐅᑦᓯᑐᓗ (POL) ᐅᖅᓭᐊᓗᖅᑎᓚᖅᑕᖅᓴᖅ, ᐃᓗᕆᓕᑦ, ᐱᓂᖅᐃᐃᓚᑦ ᐃᓅᓗᕐᔪᐃᓕ, ᑐᓴᕐᓗᐊᖅᑐᖅ (460 ᒥᑐᑦ ᑕᑭᑎᑎᕐᔪᖅ) ᓄᓇᕗᑎᖅᓱᓂᓕᓂ 2 - ᓭᓴᖏᓕᑕ ᓄᓇᖏᓱ ᒪᓂᒃᑐᑦᓯᑐᓗ, ᐱᖅᔨᓕᐅᓭᓚᐅᖅ, ᐃᓅᓗᕆᓕᑦ ᐊᒻᒪ ᑕᑭᓂᖅᓴᖅᑲᖅ ᒥᑎᖅᓚᖅ (915 ᒥᑐᑦ ᑕᑭᑎᑎᕐᔪᖅ) ᒥᑎᖅᓚᖅ. ᓄᓇᕗᑎᖅᓱᓂᓕᓂ 2 (ᓭᓴᖅᑐᑦ ᓄᓇᕗᑎᖅᓱᓂᓂᒃ) ᑕᒪᓐ ᐅᖅᓯᓭᓂᖅᖃᖅᑐᖅ ᖃᐅᔨᓂᓂᖅᓱᓂᓂᒃ 5.6 ᑭᓕᒥᑐᑦ ᓄᓇᕗᑎᖅᓱᓂᓂᒃ 1. ᑕᓕᕐᒥᒃ ᐱᖅᔨᑎᑦ ᓭᕗᑦᓯᑎᓴᓕᐅᖅᓴᖅᑦ ᓄᓇᓗ ᐃᓂᓕᑕᐅᖅᑕᖅᑕᖅᓯᓕᑦ ᐊᒥᓭᓂᒃ ᐱᖅᔨᑎᖅᑕᖅᑕᖅᓴᖅᑦ ᓇᓂᖅᑐᖅᓴᖅᑦ ᐊᓭᖅᑕᓂᒃ ᖃᓄᖅᓯᓕᓕᐅᖅᓭᓚᐅᖅᑐᖅ ᐊᓭᖅᑕᓂᒃᓂᒃ

ᐃᓕᖅᓯᖏᓪᓗᒍ ᓯᵒᓂᖏᑎᐊᖅᓯᓗᒍ. ᐊᒥᓯᓂᓗ ᖃᑕᐅᖅᓚᐃᓂᓂᓂᒃ ᐱᑕᖃᖅᓴᖅ ᓯᐅᑦᓕᖅ (ᓄᓇᖅᑎᖓᓵᵒᓂ 1) ᓇᓂᒥᐊᖅᓗ ᖃᑕᐅᖅᓚᐃᓂᑦ ᓯᓚᖓᒥ ᑕᑯᵒᓇᖅᓴᑦ, ᓄᓇᓗ ᓴᓗᒪᐃᓕᓯᒪᖅᓵᵒᓂ ᐅᖅᓯᐊᓗᐃᓂᓂᒥᒃ (ᐅᓇᑐᑦ ᐅᖅᓯᖅ ᐅᖅᓯᐊᓗᓚᓗ), ᓴᓇᐃᓂᖅᑕᖃᖅᓴᖅᓵᓗ ᓯᑭᖅᓯᒪᔨᓂᒃ (ᐅᑯᐊᑐᑦ ᓴᓇᒃᓴᐃᐸᖅ), ᓯᑭᖅᓇᖅᑐᑦ ᓯᓚᒥᒥ ᓄᐃᑕᖓᑐᑦ, ᐊᐃᐱᑦᓴᖃᖅᓯᓗᑎᒃ ᐃᓕᖅᖏᑦ ᐱᖅᑎᑦ, <ᖅᑐᓕᐃᓂᖅᑕᖃᖅᓴᖅᓵᑦ, ><ᓕᐃᓂᖅᑕᖃᖅᓴᖅᓯᓗᓗ ᐊᓯᖏᵒᓂᓚ ᐊᑕᑯᵒᓂᒃ. ᓄᓇ ᐃᓕᓴᓯᓯᖓᓄᑦ ᐅᑎᖅᑎᑕᐅᓕᐅᖅᓴᖅ ᑕᐃᖅᓯᒪᵒᓂ 2017 ᐊᒻᒪ 2018 ᐅᖅᑐᓗᐅᔨᖅᓗ ᓄᓇᖅᓱ ᓴᓗᒪᓕᖅᓴᖅ. ᑭᓯᐊᓂ ᐊᑕᐅᓯᑐᐊᖅ ᐱᓴᓕᐊᓕᒃ ᐅᑎᐊᖅᔨᐊᐊᑯᑦ ᐅᓯᖏᐅᵒᓂᑦ ᐱᖓᑦᑎᐊᖅ ᐃᖅᑲᓇᐃᖅᑐᑦ ᐱᖓᑦᑎᐊᖅ ᐅᖅᑐᓗᐅᔨᖅᓴᖅ ᑕᐃᖅᓯᒪᵒᓂ 2017 ᐊᒻᒪ 2018 ᐅᖅᑐᓗᐅᔨᖅᓗ ᓄᓇᖅᓱ ᓴᓗᒪᓕᖅᓴᖅ. ᑭᓯᐊᓂ ᐊᑕᐅᓯᑐᐊᖅ ᐅᑎᖅᑎᑕᐅᓕᐅᖅᓴᖅ ᑕᐃᖅᓯᒪᵒᓂ 2017 ᐊᒻᒪ 2018 ᐅᖅᑐᓗᐅᔨᖅᓗ ᓄᓇᖅᓱ ᓴᓗᒪᓕᖅᓴᖅ ᐅᑎᖅᑎᑕᐅᓕᐅᖅᓴᖅ ᑕᐃᖅᓯᒪᵒᓂ 2017 ᐊᒻᒪ 2018 ᐅᖅᑐᓗᐅᔨᖅᓗ ᓄᓇᖅᓱ ᓴᓗᒪᓕᖅᓴᖅ. ᑭᓯᐊᓂ ᐊᑕᐅᓯᑐᐊ

ᐊᕐᑎᑎᐅᐸ ᖃᑲᐅᓴᖅᑕᐅᓂᖓᓗᓄᑦ ᑎᑎᕋᖅᑕᐅᓯᒪᔪᑦ (ESA) ᐅᑯᐊᖏᓪᓗᓂᑎᒃ ᓇᓗᓇᐃᖅᑕᐅᓗᓐᓂᒃᑐᑦ ᖃᐅᔨᐅᓂᖓᓕᓐᓂᓗ ᐃᓕᓴᓐᓇᖅᑐᑦ ᐅᓗᓕᐊᓇᖅᓯᓯᒪᔪᑦ ᓄᓇᕗᑎᑎᑦᓴᐅᐸᓪᓕᐊᑐ CAM-E (Keith Bay) ᓄᓇᕗᑎᖓᓂᒃ. ᐅᓂᐸᑲᖅᓯᒪᔪᑦ ᖃᑲᐅᓴᖅᑕᐅᓂᖓᓐᓄᑦ ᐊᖏᑲᓯᖅᑕᐅᑕᐅᕐᓕᒡᓗ ᐊᕐᑎᑎᓕᕆᓂᖅᓴᖅ ᖃᑲᐅᓴᖅᑎᑦ ᑎᒥᖅᑎᖓᓐᓄᑦ (ESG) (1995); WESA (ᐃᓱᒋᐊᓗ, 2012); ᐊᒻᒪ ᓯᓚ ᓴᑕᑎᑯᓐᓄᑦ (Stantec) (2013). ᖃᐅᔨᓴᖅᓂᑯᖓᑦ ᒪᑕᒃᓯᑦ, ᓄᓇᕗᑎᑎᑦᓴᐅᐸᖅ ᓴᓗᒪᑎᐊᑕᖅᓯᓗᓐᓂᒃ ᐃᓕᓯᑦᓴᐅᓯᒪᔪᖏᖅ ᓴᓗᒻᒪᖅᓴᖅᑕᐅᓂᖓᓂ CAM-E (ᑭᐃᑦ ᑕᓗᐅᖓᓐᓂᒃ) ᓄᓇᕗᑎᖓᓂᑕ. ᑭᖓᔪᓂᖓᓐᓂ ᐸᖅᓯᖏᓐᓄᑦ ᑎᑎᕋᖅᑕᐅᓂᖓᓐᓂ, ᓄᓇᕐᓂᒃ ᑲᑎᒪᖅᑎᑦᑲᕐᖅᓴᐅᑦ ᑯᓚᖅᓯᖓ 8, 2014. ᓄᓇᕐᓂᒥᐅᓂᑦ ᐅᖅᓂᑐᐅᕐᖅᓱᓐᓂᒃ ᐅᖅᑕᖅᑕᖅᓱᑎᓐᓗ ᐅᖅᑕᖅᑕᐅᓂᖓᓂᒃ ᐊᐃᒪᖅᓴᐅᓂᒃᑐᑦᓴᔪᑉ ᑲᑎᒪᒃᑯᑦ ᐊᐃᒪᖅᓴᐅᓂᒃᑐᑦᓴᔪᑉ ᐅᑯᐊᖏᓪᓗᓂᑎᒃ: ᐱᖅᑯᑎᑦ ᓄᑕᐅᓴᑎᒃ ᐱᕐᓇᐃᐅᓂᐊᖅᑐᓕᒫᑦ; ᐊᖏᑲᑕᐅᓴᓐᓂ ᐊᑦᖅᑯᑎᑎᒋᓂᐊᖅᑕᖓᑦ; ᐊᑦᖅᑯᓯᐅᖅᑕᐅᓴᓐᓂ ᒥᑕᐃᓕᐅᖅᑕᐅᓴᓂᓴ; ᐱᕐᓇᐃᐅᓂᐊᖅᑐᑦ ᐊᖏᑲᑕᐅᓴᓐᓂ ᐃᖏᕋᑎᑕᐅᓴᓂᓴ; ᐊᒻᒪ ᓄᓇ ᐃᕐᓂᑯᓯᓴᑦ ᐅᑎᖅᑎᑕᐅᕐᓂᑦᓴᓐᓂ. ᑕᒪᓕᐊ ᐱᕐᓇᐃᖏᓂᐊᖅᑐᑦ ᑎᑎᕋᖅᑯᓯᒪᔪᑦ ᓄᓇᕘᓐᓗ ᐃᒪᕐᓇᓵᓕᑦ ᑲᑎᒪᓐᓇᖅᑐᑦ ᑲᑎᒪᓐᓇᖅᑐᑦ ᓄᓇᕗᑦ ᐱᕐᓇᐃᐅᓂᐊᖅᑐᑦ ᐃᓕᓴᕐᓂᖅᓴᖅ ᐊᖏᑲᑕᐅᓴᓐᓂᒃᑐᑦ ᐃᓚᖓᑕᐅᓂᖓᓂᒃ ᐊᖏᑲᑕᐅᓴᓐᓂᒃᑐᑦ ᐃᓚᖓᑕᐅᓂᖓᓂᒃ ᐊᒻᒪ ᓄᓇ ᐃᓕᓴᕐᓂᖅᓯᓚᑦ ᐅᑎᖅᑎᑕᐅᕐᓂᑦᓴᓐᓂ

4. ᐃᓄᓐᓴᒧᑦ ᐊᒃᑐᐃᓱᒋᐅᓱᓪᓗᐊᖅᑐᑦ ᐱᓕᕆᐊᖏᑦ

ᐊᓱᖏᓐᓂᒃᑐᓄᑦ, ᐱᓕᕆᐊᖓᓱᖅ ᐊᑐᓕᓕᐅᖅᓴᖅ ᐃᓄᐃᑦ ᓄᓇᖅᑲᓄᑦ ᑐᕎᖅᓴᓱᓂᒃ ᓄᓇᖏᑎᖅᓄᓕᓪᓗ ᐃᓄᐃᑦ, ᖃᐅᐅᓴᒪᓂᖅᑐᓂᒃ ᐊᑐᖅᓯᓂᒃ ᐃᓄᐃᑦ ᐱᓕᕆᔨᑎᖅᑲᓂᖅᓱᓪᓗ ᐅᑭᐅᖅᑕᖅᑐᓴᖏᑦ ᐱᓕᕆᓇᐅᓕᐅᖅᑐᓴᖏᒃ ᐃᓕᓖᐊᓂᖅᑲᓂᓄᑦ ᐅᑎᖅᑎᕐᓂᑐᖅᑎᓕᕐᓂ.

ᓄᓇᓕᖅᑎᐅᓂᒃ ᑲᑎᒪᖃᑎᖃᓕᐅᖏᒪᑕ ᑯᓚᐊᖅᑎ ᓴᓂᓴᒪᖅᓴᐃᓂᖏᑦᑎᒃ ᐅᓂᐸᑲᕆᐊᖅᑐᖅᓯᓂᒃ ᓄᓇᓕᖅᑎᓗᓂ ᐃᖃᑲᓇᐃᔾᔪᑎᓂᒃᑐᓂᒃ ᐅᖃᓕᒫᖅᑎᓂᒃ ᐱᓕᕆᓂᐊᖅᑎᓂᓂᒃ. ᐊᒥᓱᑦ ᑲᑎᕗᖅᑐᓕᐅᖅᓴᑦ ᓄᓇᓕᖅᑎ ᑲᑎᒪᑎᓱᓂᖏᓐᓂᒃᓂ.

ᑲᓐᑐᖃᑯᑦ ᐱᓕᕆᑎᓱᒋᓂᖅ ᐱᓪᓚᓕᒪᓂᖅᓴᐅᓕᕆᓂᖅᓴᖅ ᓄᓇᓕᖅᓯᓗ ᑯᓚᐊᖅᑎᓗ ᐃᖃᑲᓇᐃᔾᔪᑎᓂᖏᓪᓗᒋᑦ ᓄᓇᓕᖅᑎᒥᑦ ᐱᖁᑎᐅᓂᖅ ᐃᓄᐃᑦ ᓄᓇᖏᓐᓂᓗ ᐊᑐᖅᓯᓂᒃᑐᓂᒃ ᑯᓚᐊᖅᑎᓗᒋᑦ ᐃᓄᐃᑦ ᓄᓇᖏᓐᓂᑕ ᐊᑐᖅᓴᓂᒃᑐᓂᒃ

Appendix D:

WATER LICENCE INSPECTION REPORT BY

Mr Baba Pedersen, Resource Management/Water Resource Officer, Kitikmeot Region

Morakinyo, Dele (AADNC/AANDC)

From: Pedersen, Baba (AADNC/AANDC)
Sent: Thursday, February 14, 2019 11:58 AM
To: Morakinyo, Dele (AADNC/AANDC)
Cc: Lamontagne, Charlotte (AADNC/AANDC); Landsmining (AADNC/AANDC); Licensing Department
Subject: CAM-E Keith Bay Inspection of July 29, 2018
Attachments: 2018 KIT 011 BP 1BR KEI1722 N2016U0009 INAC Contaminated Sites CAM E Keith Bay.pdf

To Dele Morakinyo, Project Manager, Crown-Indigenous Relations and Northern Affairs Canada

Hello Dele,

Attached you will find my Inspection Report for INAC (CIRNAC) Contaminated Sites Water License 1BR-KEI1722, Land Use Permit N2016U0009 and Quarry Permit 2017QP0034. All of these are associated with your CAM-E Keith Bay Remediation Project. I did the Inspection on July 29, 2018 and I was accompanied by Manuel Bellemare from Kudlik Construction and Cody Sipkema from AECOM. I apologize for the lateness of my report.

My only concern during the Inspection was the lack of Signage at the Sample Locations for the Potable Water Intake and the Final Sewage/Grey Water Discharge. Everything else was very nice, clean and organized.

Once I have received your Final Plan, I will do a Final Inspection, tentatively in the summer of 2019.

I would like to thank you and your staff for your co-operation and assistance during the Inspection process.

If you have any questions or concerns, please feel free to contact me at any time.

I have copied this to the Nunavut Water Board in Gjoa Haven and CIRNAC Lands in Iqaluit for their information and files.

Koana,
Baba

Baba Pedersen
Resource Management/Water Resource Officer
Kitikmeot Region
Crown-Indiginous Relations and Northern Affairs Canada
Box 278, Kugluktuk, NU X0B-0E0
Phone 867-982-4306
Fax 867-982-4307
Cell 867-222-2839
Baba.pedersen@canada.ca

WATER LICENCE INSPECTION FORM

☒ **Original**
☐ **Follow-Up Report**

Licensee	**Licensee Representative**
INAC Contaminated Sites	Dele Morakinyo
Licence No. / Expiry	**Representative's Title**
Water License 1BR-KEI1722	Project Manager
Land / Other Authorizations	**Land / Other Authorizations**
Land Use Permit N2016U0009	Quarry Permit 2017QP0034
Date of Inspection	**Inspector**
29 July 2018	Baba Pedersen

Activities Inspected

☒ Camp ☐ Drilling ☐ Mining ☐ Construction ☒ Reclamation ☒ Fuel Storage
☐ Roads/Hauling ☐ Other: ☒ Other: Quarrying

Conditions: **A - Acceptable** **C - Concern** **U - Unacceptable** **NA – Not Applicable** **NI – Not Inspected**

Water Use	Condition	Comment	**Site Conditions**	Condition	Comment	**Haz/Mat Management**	Condition	Comment
Intake/Screen	C	6	Water Management Structures			Storage	A	5&16
Flow Measure. Device	A		Culverts / Bridges			Spills	A	
Source:			Drainage			Spill Plan	A	
Water Use:	A		Erosion / Sediment					
Recirculation (y /n)			Mitigation Measures	A		**Administrative**		
			Reclamation Activities	A	11,12&14	Records	A	1
			Materials Storage			Reports	A	
Waste Disposal			Signage	C	3 & 6	Plans		
Waste Water	A	2				Notifications	A	
Solid Waste	A	4&15	**Monitoring**			**Other**		
Hazardous Waste	A	13	Sample Collection / Analysis	A		Quarrying	A	7,8,9,10&17

**The number in the comments field will correspond with specific comments provided below.*

Samples taken by Inspector:	Location(s):
☐ Yes ☒ No	

SECTION 1 ☒ **Comments** (s.__) ☐ **Non-Compliance with Act or Licence** (s.__) ☐ **Action Required** (s.__)

I Inspected the CAM-E Keith Bay Remediation Camp (Photo 1) on July 29, 2018. I was accompanied by Manuel Bellemare from Kudlik Construction and Cody Sipkema from AECOM.

SECTION 2 ☒ **Comments** ☐ **Non-Compliance with Act or Licence** ☐ **Action Required**

I saw 1. All associated Permits and Authorizations on Display (Photo 2) in the Dining Hall, 2. The Sewage/Grey Water Settling Ponds and Bionest Container Filter System, 3. The Final Sewage/Grey Water Discharge Location (Photo 3), 4. The Incinerator, 5. The Fuel Storage Area (Photo 4), 6. The Potable Water Intake Location (Photo 5), 7. Borrow Area #4 (Photo 6), 8. Borrow Area #3, 9. Borrow Area B (Photo 7), 10. Borrow Area #2 (Photo 8), 11. The Stockpile of Treated Type B Material (Photo 9) from the Land Farm, 12. The Active Land Farm (Photo 10), 13. The Non-Hazardous Waste Pile, 14. The Tier II Facility (Photos 11 & 12), 15. The Untreated Wood Burn Can, 16. The Diesel Truck-Fill Station (Photo 13), and 17. Borrow Area #8 (Photo 14).

SECTION 3 ☐ **Comments** ☐ **Non-Compliance with Act or Licence** ☒ **Action Required**

1. Thank you for displaying Permits as required. 2. All is well with this. 3. Signage must be installed indicating this Sample Location. 4. All is well with this. 5. All is well with this. 6. Signage must be installed indicating this Sample Location. 7. All is well with this. 8. All is well with this. 9. All is well with this. 10. All is well with this. 11. All is well with this. 12. All is well with this. 13. All is well with this. 14. All is well with this. 15. All is well with this. 16. All is well with this. 17. All is well with this.

Licensee or Representative	**Inspector's Name**
	Baba Pedersen
Signature	**Signature**
	Signed Original on File
Date	**Date**
	14 February 2019

Office Use Only: Follow-up report to be issued by Inspector ☐ Yes ☒ No

cc. CIRNAC, Lands Division, Iqaluit, aadnc.landsmining.aandc@canada.ca Nunavut Water Board, Gjoa Haven, licensing@nwb-oen.ca

PHOTO LOG

Date	Camera	Inspector	Authorization
29 July 2018	Sony DSC-HX50V	Baba Pedersen	1BR-KEI1722 & N2016U0009

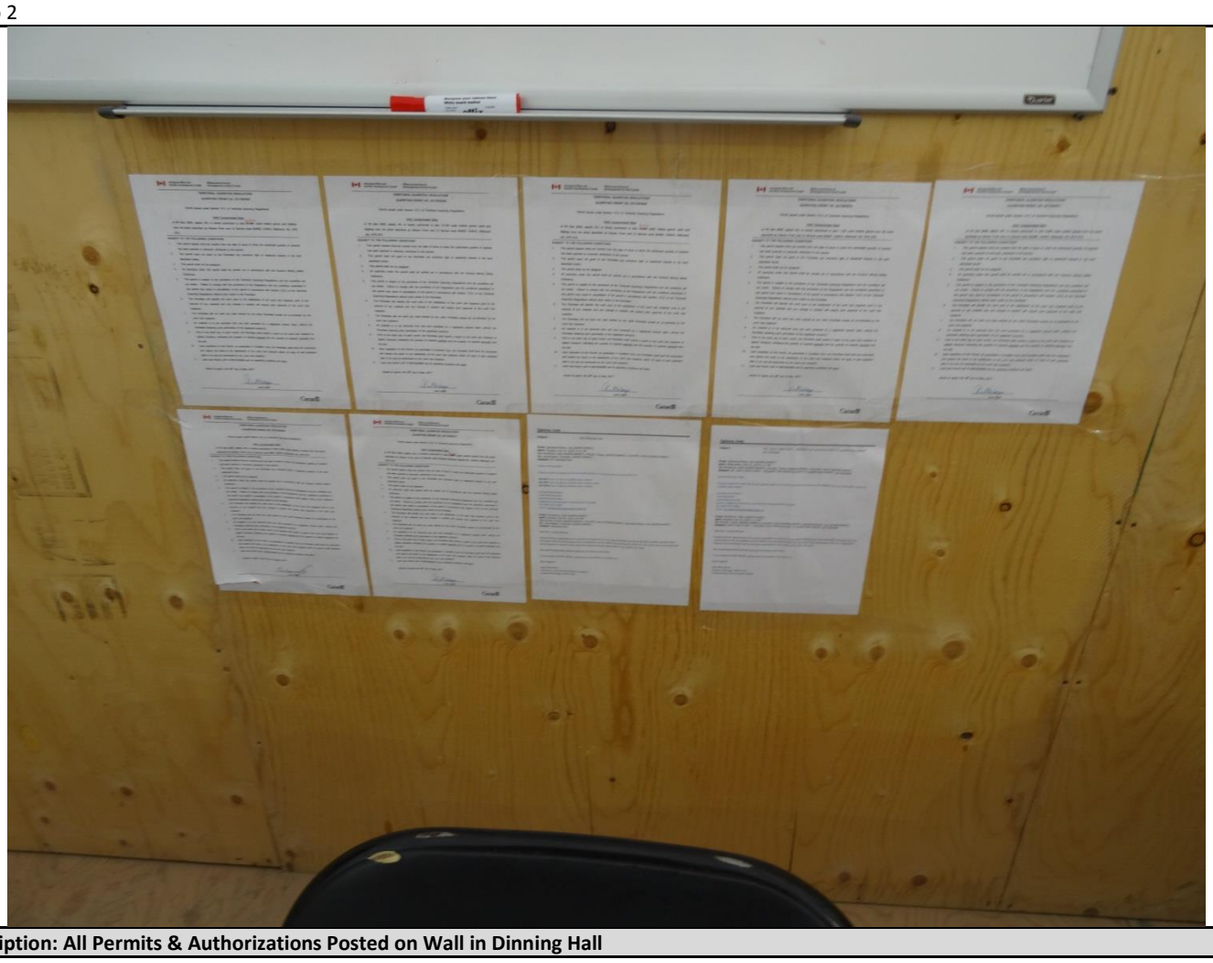
Photo Log # DSC03409 **Location : CAM-E Keith Bay**

Photo 1

Description: Aerial View of the CAM-E Keith Bay Remediation Camp

Photo Log # DSC03440 **Location :** CAM-E Keith Bay

Photo 2



Description: All Permits & Authorizations Posted on Wall in Dinning Hall

Photo Log # DSC03451 **Location :** CAM-E Keith Bay

Photo 3

Description: Final Grey Water Discharge – No Signage

Photo Log # DSC03465 **Location :** CAM-E Keith Bay

Photo 4

Description: Fuel Storage in Secondary Containment – 760 Full Drums on Site

Photo Log # DSC03476	**Location :** CAM-E Keith Bay
Photo 5	N 68* 17’ 32.2” W 088* 06’ 06.3”

Description: Potable Water Intake Location – No Signage

Photo Log # DSC03478	**Location :** CAM-E Keith Bay
Photo 6	

Description: Borrow Area #4

Photo Log # DSC03484 **Location :** CAM-E Keith Bay

Photo 7

Description: Borrow Area B

Photo Log # DSC03485 **Location :** CAM-E Keith Bay

Photo 8

Description: Borrow Area #2

Photo Log # DSC03492 **Location :** CAM-E Keith Bay

Photo 9

Description: Treated Type B Material from Land Farm

Photo Log # DSC03497 **Location :** CAM-E Keith Bay

Photo 10

Description: Active Land Farm

Photo Log # DSC03524 **Location :** CAM-E Keith Bay

Photo 11

Description: Tier II Facility

Photo Log # DSC03528 **Location :** CAM-E Keith Bay

Photo 12

Description: Tier II Facility Signage

Photo Log # DSC03534 **Location :** CAM-E Keith Bay

Photo 13

Description: Diesel Truck-Fill Station

Photo Log # DSC03545 **Location :** CAM-E Keith Bay

Photo 14

Description: Borrow Area #8

Appendix E:

Spill Report

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR June 26, 2018	REPORT TIME 13:20	X ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-____
B	OCCURRENCE DATE: MONTH – DAY – YEAR April 2018, discovered on June 26	OCCURRENCE TIME unknown		

C	LAND USE PERMIT NUMBER (IF APPLICABLE) N2016U0009	WATER LICENCE NUMBER (IF APPLICABLE) 1BRKEI722
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION KEITH BAY	REGION ☐ NWT X NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
E	LATITUDE DEGREES 68 MINUTES 17 SECONDS 45.40	LONGITUDE DEGREES 88 MINUTES 7 SECONDS 3.14
F	RESPONSIBLE PARTY OR VESSEL NAME KUDLIK CONSTRUCTION LTD	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION PO BOX 727, 1519 FEDERAL ROAD, IQALUIT
G	ANY CONTRACTOR INVOLVED KUDLIK	CONTRACTOR ADDRESS OR OFFICE LOCATION

H	PRODUCT SPILLED RVING, IDO PREMIUM PLUS 15W4(	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES 205 L	U.N. NUMBER
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
I	SPILL SOURCE DRUM	SPILL CAUSE BROKEN DURING SNOW REMOV	AREA OF CONTAMINATION IN SQUARE METRES 6
J	FACTORS AFFECTING SPILL OR RECOVERY --	DESCRIBE ANY ASSISTANCE REQUIRED --	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT NO

K — ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS

During snow removal operation to have access to the generator room during winter cat train, the baril was plowed with the snow and thorn. Due to the large amount of snow the incident went unnoticed until the snow bank thawed. Most of the oil was recovered using absorbent sheets and booms. All used absorbents were collected and stored in barrels. The water poddle from snow melt was pumped in a tote tank for treatement. New absorbents spread on the ground and the water poddle until the entire snow bank has thawed. Absorbents will be collected and replaced as required. Any other snow melt water in this area will be pumped to the tote tank.

L	REPORTED TO SPILL LINE BY François Bourassa	POSITION project manager	EMPLOYER Kudlik Construction	LOCATION CALLING FROM office	TELEPHONE 418-930-0850
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			