Fuel and Hazardous Material Spill Contingency Plan

CAM-C (Matheson Point) Intermediate Distant Early Warning (DEW) Line Site, Nunavut

Submitted by: **Department of Indigenous and Northern Affairs Canada (INAC) (Nunavut Regional Office)**

Prepared by: **Public Works and Government Services Canada (PWGSC)**
Real Property Services
Architectural & Engineering Services
Environmental Services
Western Region

October, 2016

Table of Contents

1 Site Description and Characteristics

1.1 CAM-C (Matheson Point) site is located at approximate latitude 68° 49' 08" N and longitude 95° 17' 20" W in the Kitikmeot region of Nunavut. The site is approximately 30 kilometres (km) northeast of Gjoa Haven – the nearest Nunavut community to the site. The site was historically used as an intermediate DEW Line site by Department of National Defense (DND). The DEW Line site was constructed in 1957 and was taken out of service in 1963. In 1965, responsibility for the site was assumed by the Department of Indigenous and Northern Affairs Canada (INAC)

CAM-C (Matheson Point) site consists of two separate areas; Main Station Area and Beach Area. The Main Station consist of remains of a building train, a garage, warehouse, POL (petroleum, oil and lubricants) tanks, drum storage area and communications tower. Site facilities were dismantled after the station was abandoned. In 1985 some hazardous materials, including two transformers, a choke and light ballasts were removed. Concrete foundations, scattered debris and a fallen antenna are the only remnants of the Main Station. An airstrip suitable for landing twin otter aircraft, which is in a good condition, is located adjacent to the Main Station area.

The Beach Area was used for barge landings of supplies; approximately 400 drums (205 L) remain at the area. Most of these drums are empty with few containing some substances. Partially buried debris is visible along the hillside southwest of the site. The beach area has a barge landing area suitable to support sealift access to the site.

1.2 The entire territory of Nunavut lies within the Artic climate zone, with exceptionally cold winters, and cool to cold summers. There is an Environment Canada weather monitoring station in Gjoa Haven, the nearest community to CAM-C. Based on the climate normals from 1984 – 2007, the mean annual daily minimum temperature of -17.7 ^{o}C and mean annual daily minimum temperature of -11.0 ^{o}C. Coldest month is February with daily minimum and maximum of -37.2^{o}C and -30.5^{o}C respectively. Warmest month is July with daily minimum and maximum of 3.8^{o}C and 12.1^{o}C respectively. The area has a summer mean of approximately 4^{o}C (June, July, and August) and a winter mean of approximately -20^{o}C. Precipitation is scarce throughout most of the territory of Nunavut and falls almost entirely as snow, with very small quantities of rainfall during the summer months. Average rainfall is 77.6 mm while average snowfall is 131.3 cm.

This region's landscape is shaped by glaciers, which left wide, flat plateaus and gently rolling plains; coastal land is rising over time as it decompresses after the glacial pressure. permafrost is evident throughout the region, where freeze/thaw cycles shape the soil and drainage channels, while simultaneously degrading the limestone and sandstone bedrock. Some parts of the region have steep coastal cliffs, but CAM-C is situated in a small cove, with a somewhat protected and gently sloped beach. King William Island is entirely aligned with a geological formation comprising Cambrian-Silurian carbonate and siliciclastic rocks (Geological Survey of Canada, Canada-Nunavut Geoscience Office, 2006). The CAM-C site geomorphology is

characterized by hummocks, low rolling hills, several ponds, and raised beaches composed of coarse-grained gravel over bedrock. Regional overland drainage from the site is generally towards Rae Straight to the west.

Based on the results of the 2013 investigation, none of the soil types identified are particularly prone to erosion. However, areas near the coast may be subject to future erosion by wave action in the event of sea level rise with global warming. Any borrow development in the vicinity of the Beach Area may require drainage control to prevent sediment loading to the coastal area. Areas identified for new development (borrow and potential new landfill construction) in the Station Area are not considered at risk for any significant erosion (For more details please refer to the attached EIA report).

Vegetation in the Victoria Island Lowlands ecoregion is sparse and stunted. Species present include: arctic poppy, purple saxifrage, mountain avens, moss campion, arctic bladder campion, arctic daisy, crustose lichens, arctic willow, white arctic heather, yellow oxytrope, cotton grass, mastodon flower, arctic lousewort, mountain sorrel, pygmy buttercup, river beauty, chickweed, and various sedges.

Based on observations made by the wildlife monitors, observations made during the 2013 phase III site assessment, the key wildlife of the region includes: muskox, peary caribou, long-tailed Jaeger, glaucous gull, short-tail weasel (ermine), horned lark, collared lemming, black-bellied plover, ruddy turnstone, red phalarope, horned larks, ravens, snow buntings, oldsquaw, brant, king eider, red-throated loon (and chick), burrowing rodent (lemming or vole possibly), snow goose, arctic hare, arctic fox, spider, bee, and unidentified small, brown songbirds, Arctic tern, Arctic fox, Canada geese, swans, snowy owl, and polar bear.

There are lots of evidences of site use by local people for hunting.

The current land use is limited to hunting, fishing, and recreation. The site is a 2.5 hour ATV ride from Gjoa Haven, and has easy access by local people virtually year round.

1.3 The site has two main areas: the Main Station and Beach Area.

The Main Station consisted of a building train, a garage, warehouse, POL (petroleum, oil and lubricants) tanks, drum storage area and communications tower. Following the abandonment of the site in 1963, the site facilities were dismantled at different times in the past. In 1985 some hazardous materials, including two transformers, a choke and light ballasts were removed. Concrete foundations, scattered debris and a fallen antenna are the only remnants of the Main Station. An airstrip suitable for landing twin otter aircraft, reported to be in good condition (2011), is located adjacent to the Main Station area.

The Beach Area was used for barge landings of supplies; approximately 400 drums (45 gallon) remain at the area. Partially buried debris is visible along the hillside southwest of the site. The beach area has a barge landing area suitable to support sealift access to the site.

1.4 Details of the site location, characteristics/features, topography and other details are contained in the drawings attached as the “file of maps and drawings”.

2 Fuel and Hazardous Material Spills - General Information

2.1 This Spill Contingency Plan presents the prescribed course of action to be followed in the case of unanticipated *fuel or chemical spills* during the remediation of the former DEW Line Site at CAM-C (Matheson Point), Nunavut. The plan will enable persons in a particular spill emergency situation to maximize the effectiveness of the environmental response and meet all regulatory requirements for reporting to the appropriate authorities. The plan also describes the locations where hydrocarbons (fuel) and spill response equipment will be stored at the site.

2.2 This current plan follows the standard procedure adopted by PWGSC / INAC on Crown lands to address unanticipated spills. The procedure has been customised and made specific to the CAM-C (Matheson Point) and made available for regulatory approvals pre-contract award. After the selection of a contractor for the project, the successful contractor will develop a more detailed Spill Contingency Plan which will be included as a component of the Site Specific Health and Safety Plan (SSHSP). The SSHSP is always prepared prior to the commencement of site construction (remediation) activities and it will be posted on-site during the remediation activities. Also, a copy of the SSHSP will be submitted to Nunavut Impact Review Board (NIRB), Nunavut Water Board (NWB), Lands Department of the Indigenous and Northern Affairs Canada (INAC) and other relevant regulatory bodies as soon as it is completed. The following information will be included in the SSHSP:

- a description of pre-emergency planning;
- personnel roles, lines of authority and communication;
- emergency alerting and response procedures;
- evacuation routes and procedures, safe distances and places of refuge;
- emergency alerting and response procedures;
- directions/methods of getting to the nearest medical facility;
- emergency decontamination procedure;
- emergency medical treatment and first aid;
- emergency equipment and materials;
- emergency protective equipment;
- procedures for reporting incidents; and
- spill response and containment plans for all materials that could potentially be spilled.

3 Types and Quantities of Materials that will be stored on-site

3.1 The types and approximate minimum quantities of fuels that will be stored on-site are:

Gasoline: Approximately 307,500 L stored in 1500 Nos. 205 L barrels;

Diesel: Approximately 41,200 L stored in 200Nos. 205 L barrels;

Oil: Approximately 40 L of hydraulic oil (two 20 L pails) and 40 L of motor oil (two 20 L pails);

Propane: Three (3) 45 kg tanks; and

Grease: Approximately 20 tubes stored within two 4 kg cases.

3.2 Method of Storage & MSDS Sheets:

All liquid fuels will be stored in barrels on pallets within a containment area surrounded by a 0.5 m berm and lined with hydrocarbon resistant material. Refueling activities will occur directly from the barrels in the containment area into the respective vehicle. The containment area will be located on flat, even ground at a distance of no less than 30 m away from the camp and any natural drainage area or water body.

Propane will be stored in 45 kg (100 lb) certified tanks near the kitchen tent.

The above quantities are estimates. Upon award of contract, the successful contractor will provide more specific information on the types and actual quantities, of all fuels and chemicals on site.

Contractor will comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding employee training, use, handling, storage and disposal of hazardous materials.

Under the Crown's contracting procedure, the provision of Material Safety Data Sheets (MSDS), as required by WHMIS, is the responsibility of the successful contractor. Upon the award of contract for the remediation of CAM-C (Matheson Point) project, the successful contractor will prepare the MSDS sheets for all fuels and chemicals he is bringing to site and include the MSDS sheets in the SSHSP which will be submitted to NWB before work can start on the site.

4 Fuel and Hazardous Material Spills Contingency Plan

4.1 The objective of the fuel-related contingency plan is to protect the environment and human health by minimizing the impacts of spill events through clear and concise instructions to all personnel.

4.2 A variety of fuels (diesel, gasoline and lubricating oils) will be used during the site remediation of the CAM-C (Matheson Point) site. Fuels will be stored in either barrels of 205 liters or smaller capacity or in double walled tanks. For either storage option, it is anticipated that any spill quantity would likely be small.

4.3 Transportation of fuels will be ensured to comply with the *Transportation of Dangerous Goods Act and Regulations.*

4.4 The most common pollution incidents would probably involve spills of diesel or gasoline onto land resulting from: human error during transfer, rupture of barrels from deterioration or damage, seepage from fittings or valves, or equipment failure. Daily checking of equipment and preventative maintenance would identify damage to the fuel system and reduce the risk of spills or leaks.

4.5 In the event of a spill, protection of human health and safety is paramount. Contamination of personnel involved in clean up is a real possibility as is contamination of the surrounding workplace and environment.

The individual responding to a spill shall:

i. Ensure personnel are appropriately trained.

All employees working on the CAM-C (Matheson Point) Remediation Project, including contractors and sub-contractors, will be trained in the safe operation of all machinery and tools, as well as in the handling of materials to help prevent and respond to hazardous material spills in a timely and effective manner. All employees on site will also be trained for initial spill response in the event of a spill. The recommended training for these purposes consists initially of the 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) course offered by various environmental firms and the 8-Hour HAZWOPER refresher course every two (2) years thereafter.

ii. Make use of materials and equipment available for adequate response to fuel spills, such as excavators for creating earthen dykes and hydrocarbon absorbent booms.

iii. Warn people in the immediate vicinity and evacuate the area if necessary.

iv. Wear protective clothing as required for handling spills.

v. Isolate and eliminate all ignition sources.

vi. Identify the spilled material if possible, and take all safety precautions before approaching it.

vii. Attempt to immediately stop the leakage and contain the spill, if safe to do so, by implementing the Spill Response Actions summarized in Section 2.5.1 below.

viii. Report to the Field Team Leader on the spill location, type of material, volume and extent, status of spill (direction of movement), and prevailing meteorological conditions.

ix. Follow all applicable federal/territorial regulations and guidelines or the disposal of spill materials.

x. Document all events and actions taken. Include information required by applicable regulations and guidelines.

xi. Notify appropriate government agencies using the contact list in Table 1 below. Report spills immediately on the 24-Hour Spill Report Line (867) 920-8130.

4.6 Spill Response Actions on Different Media:

On Land

- Do not flush into ditches or drainage systems.
- Block entry into waterways and contain with earth, snow or other barrier.
- Remove small spills with sorbent pads.
- On tundra use peat moss and leave in place to degrade, if practical.

On Snow & Ice

- Block entry into waterways and contain with snow or other barrier.
- Remove minor spills with sorbent pads and/or snow.
- Use ice augers and pump to recover diesel under ice.
- Slots in ice can be cut over slow moving water to contain oil.
- Burn accumulated diesel from the surface using Tiger Torches if feasible and safe to do so.

On Muskeg

- Do not deploy personnel and equipment on marsh or vegetation.
- Remove pooled diesel with pumps and skimmers.
- Flush with low pressure water to herd diesel to collection point.
- Burn only in localized areas, e.g., trenches, piles or windrows.
- Do not burn if root systems can be damaged (low water table).
- Minimize damage caused by equipment and excavation.

On Water

- Contain spill as close to release point as possible.

- Use spill containment boom to concentrate slicks for recovery.
- On small spills, use sorbent pads to pick up contained oil.
- On larger spills, use skimmer on contained slicks.
- Do not deploy personnel and equipment onto mudflats or into wetlands

Rivers & Streams

- Prevent entry into water, if possible, by building berm or trench.
- Intercept moving slicks in quiet areas using (sorbent) booms.
- Do not use sorbent booms/pads in fast currents and turbulent water.

5 Notification & Reporting Procedure on CAM-C(Matheson Point) Site

Notification and reporting procedure on CAM-C (Matheson Point) will follow similar procedures we adopt on all Crown sites. These are:

5.1 Report to the Project Manager / Site Supervisor, the spill location, type of material, volume and extent of spill, status of spill (direction of movement), and prevailing meteorological conditions.

5.2 A person shall immediately report the spill, where there is a spill, or where there is a reasonable likelihood of a spill, in an amount equal to or greater than the amount set out in Schedule B of the NWT / Nunavut *Spill Contingency Planning and Reporting Regulations* or in Schedule A of the *Yukon Spill Regulations*.

5.3 Notify appropriate government agencies using the contact list provided below (Table 1).

5.4 When reporting a spill, a person shall give as much of the following information as possible:

i. Date and time of spill
ii. Location of spill
iii. Direction the spill is moving.
iv. Name and phone number of a contact person close to the location of the spill.
v. Type of hazardous product/material spilled and quantity spilled.
vi. Cause of spill.
vii. Whether spill is continuing or has stopped.
viii. Description of existing containment.
ix. Action taken to contain, recover, clean, and dispose of the spilled material.
x. Name, address and phone number of person reporting spill.
xi. Name of owner or person in charge, management or control of hazardous materials at the time of the spill.

6 Key Contacts' List

6.1 24-Hour Spill Report Line

1. In the event of a spill, contact the 24-Hour Spill Report Line and provide them with all the relevant details (as stated in section 5 above). The contact details are: Telephone: (867) 920-8130 Fax: (867) 873-6924

2. Environment Canada, as lead agency, shall then be contacted by officials to ensure the appropriate response. The lines are staffed 24 hours a day and can also be used to co-ordinate a response in the event of a non-spill emergency outside of normal working hours.

6.2 Other Contacts

1. Detailed list of contacts in the event of spill emergency or a non-spill emergency (e.g. related to wildlife, fisheries, heritage resources etc.), are provided in Table 1 below.

Table 1: Contact List

Resource	Location	Phone Number	Fax Number
24 Hour Spill Line	NWT/Nunavut	(867) 920-8130	(867) 873-6924
Local Fire Department	Director / Fire Chief Emergency and Protective Services, Government of Nunavut, Iqaluit, Nunavut	(867) 976-5657	(867) 979-0680
Environment Canada, Enforcement Branch	Enforcement Officer, Environment Canada, Iqaluit, Nunavut	(867) 975-4644	(867) 975-4645
Indigenous and Northern Affairs Canada – Operations Department	Manager, Water Resources, INAC Iqaluit, Nunavut	867-975-4550	867-975-4286
Government of Nunavut	Director, Environmental Protection, Government of Nunavut Iqaluit, Nunavut	(867) 975-7729	867) 975-7739
Fisheries and Ocean Canada (DFO)	Director, Fisheries and Oceans Canada P.O. Box 2208 Iqaluit, X0A 0H0	(867) 979-8000	(867) 979-8039
Kitikmeot Inuit Association (QIA), Kugluktuk	Director of Lands, Qikiqtani Inuit Association (QIA) Igluvut Building, 2nd floor P.O. Box 1340, Iqaluit, NU X0A 0H0	(867) 975-8400	(867) 979-3238
Indigenous and Northern Affairs Canada – Project Proponent	HQ – Gatineau: Dele Morakinyo, INAC Project Manager OR Iqaluit Office: Spencer Dewar, A/Director, Contaminated Sites & Lands (NRO)	(819) 934-9224 (867) 975-4578	(819) 934-9229 (867) 975-4736
Public Works and Government Services Canada – Project Manager	Project Manager – Caitlin Moore, PWGSC Project Manager	(780) 497-3867	(780) 497-3842

7 NT-NU Spill Report Form

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	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		

C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS

F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION	
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION	
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS		

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
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

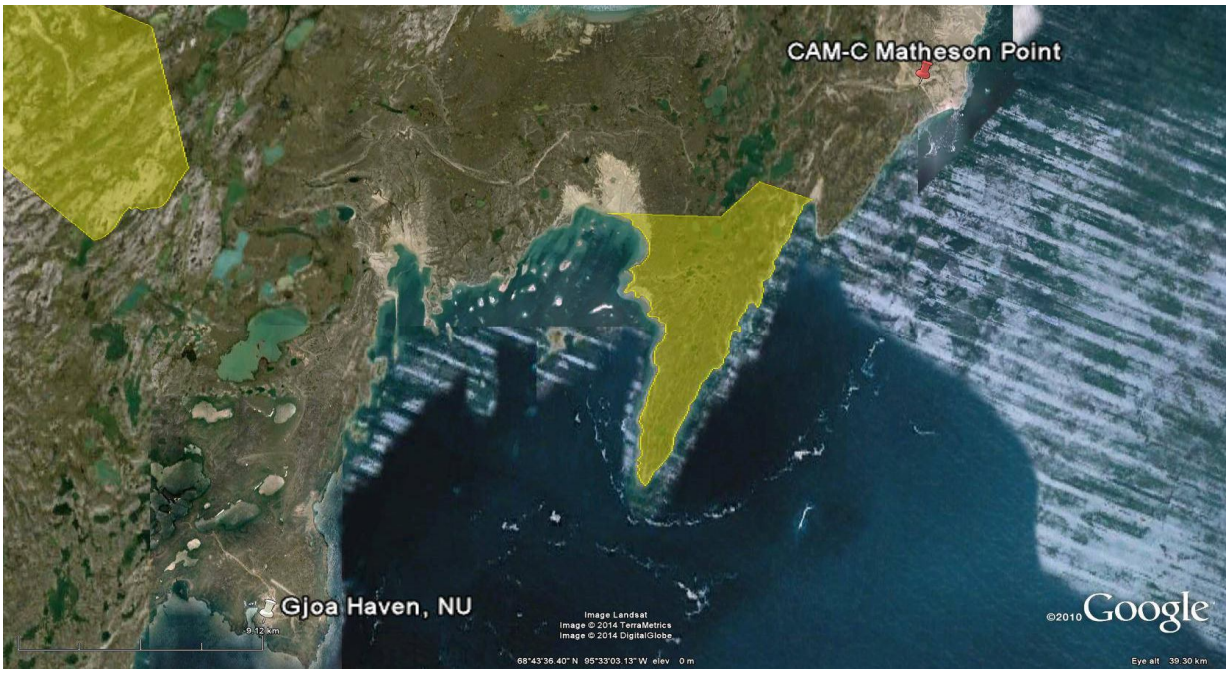
LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

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

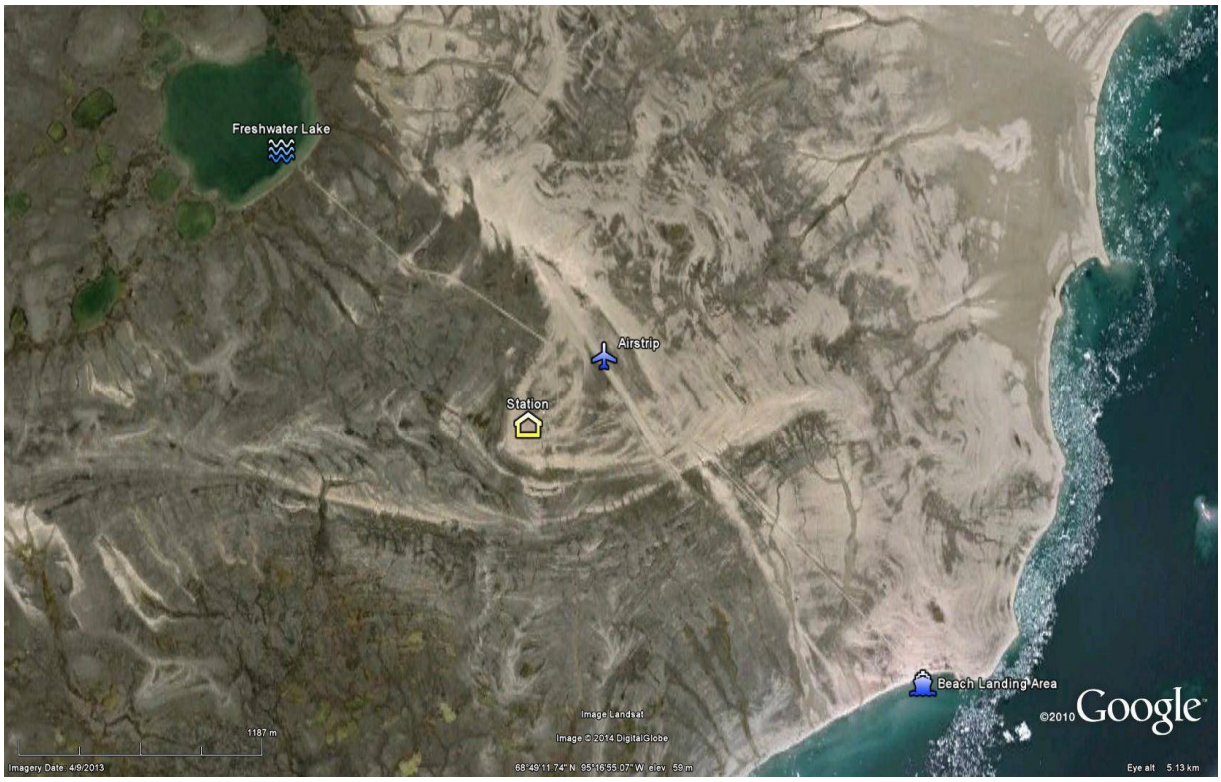
8 MAPS - Site Location, Site Layout / Features

Project Location

CAM-C Project Location Relative to Gjoa Haven – 30km NE of Gjoa Haven



CAM-C Project Location Relative to Gjoa Haven (Showing IOL areas in Yellow)



CAM-C Matheson Point – Project Layout Showing Water Source, Station, Beach Landing & Airstrip

9 NTS Map - Sheet No: 057B13E (Scale 1:50,000)

CANADA

Edition 1

57B/13 EAST

KING

WILLIAM

ISLAND

G I B S O N P E N I N S U L A

R A E S T R A I T

UGVG

400' RADIO

GIBSON PENINSULA

NORTHWEST TERRITORIES

SCALE 1:50,000

1.25 Inches to 1 Mile approximately

1 ½ 0 1 2 3 Miles

1000 500 0 1000 2000 3000 4000 Metres

1000 500 0 1000 2000 3000 4000 Yards

CONTOUR INTERVAL 50 FEET

UNIVERSAL TRANSVERSE MERCATOR GRID
ZONE 15

PROVISIONAL MAP
Subject to Correction

REFERENCE

Road, dry weather
cart track, winter road
Boundary, provincial
Power line
Astronomical monument
Horizontal control point △582
Bench mark BM 3025

Spot elevation, precise, approximate .4582 .757±
House, Building
School Church
Post Office Tower
Radio Station R.C.M.P. detachment
Well Tank o oil • gas
Airfield

REFERENCE

Cliff or low relief
Esker
Pingo
Contours:
elevation 250 200
depression 250 200
Wooded Area

Foreshore Flats Sand Mud
Rocky reef
Lake or pond, perennial
Lake or stream, intermittent
Rapids
Swamp, marsh
Tundra ponds
Tundra polygons

Produced by the Army Survey Establishment, R.C.E. 1963

Names appearing on this sheet have not been considered by the Canadian Board on Geographical Names

Users noting errors or omissions on this map are requested to mark hereon and forward to Commanding Officer, Army Survey Establishment, Ottawa. Maps will be replaced if desired.

Copies May Be Obtained from the Map Distribution Office, Dept. of Mines and Technical Surveys, Ottawa.

57B/13 EAST