Fuel and Hazardous Material Spill Contingency Plan

Coral Harbour Site Remediation Project, Near Coral Harbour Hamlet, Nunavut

Submitted by: **Crown-Indigenous Relations and Northern Affairs Canada, Nunavut Regional Office (CIRNAC - NRO)**

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1 Site Description and characteristics

1.1 Coral Harbour site is located at approximate latitude, 64° 11' 30.257" N; and Longitude, 83° 21' 0" W and it is at about 10 km northwest of Coral Harbour (the nearest Nunavut community to the site). The site is accessible by ATV, snowmobile, airplanes, helicopter, and CAT train. 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, or ATV. The proximity of the site to the Hamlet of Coral Harbour is an asset with regards to accessing the site.

Coral Harbour Site consists of areas around the Hamlet of Coral Harbour used between the 1940s to the mid 1950s as training areas and base for Northern operations by the US and Canadian Militaries. These areas were used as staging areas support operations (including the construction of DEW Line Sites) across Northern Canada. In the 1970s, military operations ceased in these areas, the airfield became the municipal airport and the rest of the site was abandoned. Coral Harbour Site is about 10 km northwest of the Hamlet of Coral Harbour. Past legal studies indicated that, though the Land regimes around the Coral Harbour Site belong to a number of organizations, a large amount of contamination on the site could be traced to Crown's military operations on the site between 1940s to 1970s.

1.2 The territory of Nunavut lies within the Arctic climate zone, with exceptionally cold winters, and cool to cold summers (Canadian Council on Ecological Areas [CCEA], 2014). Based on the climate normals from 1981 – 2010 for the Environment and Climate Change Canada (ECCC) weather monitoring station located at the Coral Harbour Airport, the prevailing wind is from the north and the mean annual temperature is -11°C. The area has a summer mean temperature of approximately 6.9°C (June, July, and August) and a winter mean temperature of approximately -23.5°C (November, December, January, February, March, April).

Precipitation throughout most of the Territory of Nunavut falls almost entirely as snow, with small quantities of rainfall during the summer months. The average annual precipitation in Coral Harbour ranges from 200-300 mm, with an average rainfall of 163 mm and average snowfall of 141.6 cm.

The Site is situated within the Southampton Island Plain ecoregion of the Southern Arctic Ecozone. Permafrost is continuous across the ecoregion and contains medium ice content with ice wedges. The dominant soil in the ecoregion is static and turbic cryosols, although outcrops of bedrock are common. The ecoregion is characterized by its continuous coverage of low arctic shrub tundra vegetation including dwarf birch (Betula nana), willow (Salix arctica), northern Labrador tea (Rhododendron tomentosum), avens (Dryas spp.), and dwarf shrubs (Vaccinium spp); wet areas tend to have a continuous cover of willow, sedge (Carex spp.), and moss. The wildlife that is characteristic of the ecoregion includes polar bear, seal, walrus, arctic hare, wolf,

weasel, fox, wolverine, ermine, caribou, rock ptarmigan, raptors, gulls, seabirds, waterfowl, and whale.

As described in the Surficial Materials of Nunavut Map, the surficial geology at the Site is composed of glaciomarine and marine deposits which occur when meltwater and floating ice deposit sediment during deglaciation and subsequent regression. The overburden at the Site consists of sand, gravel and finer sediment, and pockets of thin to discontinuous sediment veneer. Areas across the Site may include washed till and exposed bedrock surfaces.

Based on Site observations, regional surface drainage (anticipated shallow groundwater flow direction) is dependent on location and appears to be generally to the south towards Hudson's Bay. As the topography is variable throughout the Site and the surrounding areas, surface water drainage will change depending the land elevation. Seasonality may impact surface water drainage as well, as there are areas that are seasonally inundated. However, overall Site drainage is anticipated to be south towards the Hudson's Bay.

1.3 Environmental Site Assessments (ESAs) and Supplementary Site Assessments (SSAs) were completed on the Coral Harbour site in 2007-2008, 2011-2012, 2020-2021, 2021-2022, and 2022-2023 showed that the site contained substances that require remediation. According to the results of the ESAs and the SSAs , the Coral Harbour comprises of several areas of environmental and potential environmental concerns.
The categories of the waste streams delineated on Coral Harbour, andtheir estimated volumes based on the Phase III assessment and the RAP dated March 31, 2022 are:

NON-HAZARDOUS WASTE (NHW)

(a) Empty Barrels (353 cubic metres (cu.m.) compacted)
(b) Infrastructure (tank farm, wooden sheds, empty tanks, dilapidated building, concrete anchor and former maintenance building) (Minimum 400 cu.m. compacted)
(c) Buried Debris (332 cu.m.)
(d) Surface Debris (consolidated and unconsolidated) (770 cu.m. compacted)

CONTAMINATED SOIL (PHC)

(a) Type A (nonmobile PHCs) (20 cu.m.)
(b) Type B (mobile PHCs) Soil (Estimated volume of 300 cubic meters (cu.m.)
(c) Surficial Staining (2167 cu.m.)

HAZARDOUS WASTE (HW)

(a) Asbestos Minimum (13 cu.m.)
(b) Poorly adhered lead amended paint (Minimum 30 sq.m.)
(c) Batteries (Expected maximum of <10 cu.m.)
(d) Aqueous Liquids (volume is Unknown)
(e) Liquid Petroleum Products (265,255 L)

(f) Buried Debris (Unknown volume)

Consequently, a Remedial Action Plan (RAP) recommending options to clean-up the various waste streams at the site was written developed. The RAP has been scheduled for implementation within the next two (2) years – 2023 to 2025.

1.4 Details of the site location, characteristics/features, topography and other details are contained in the drawings attached to this Spill Contingency Plan.

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 Coral Habour Site, 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 CIRNAC on Crown lands to address unanticipated spills. The procedure has been customised and made specific to the Coral Habour 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 2050 L stored in ten (10) 205 L barrels;

Diesel: Approximately 10,250 L stored in forty (50) 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 Coral Habour 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 Coral Habour 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 Coral Habour 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:

<u>On Land</u>

- 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.

<u>On Snow & Ice</u>

- 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.

<u>On Muskeg</u>

- 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 Coral Habour Site

Notification and reporting procedure on Coral Habour 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

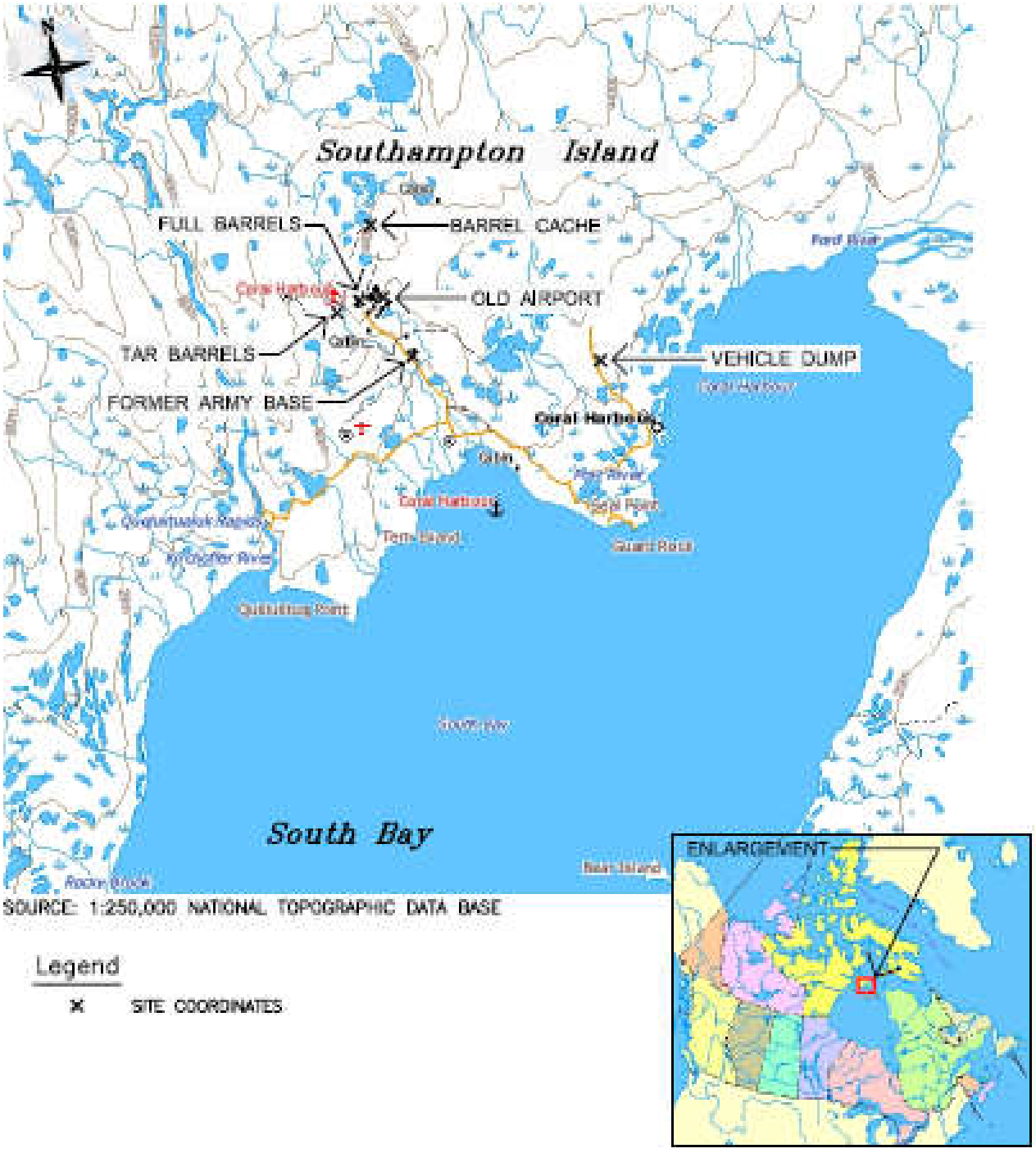
1. Detailed list of contacts in the event of spill emergency or a non-spill emergency (e.g. related to wildlife, fisheries, heritage resources etc.), are provided in Table 1 below.

Table 1: Contact List

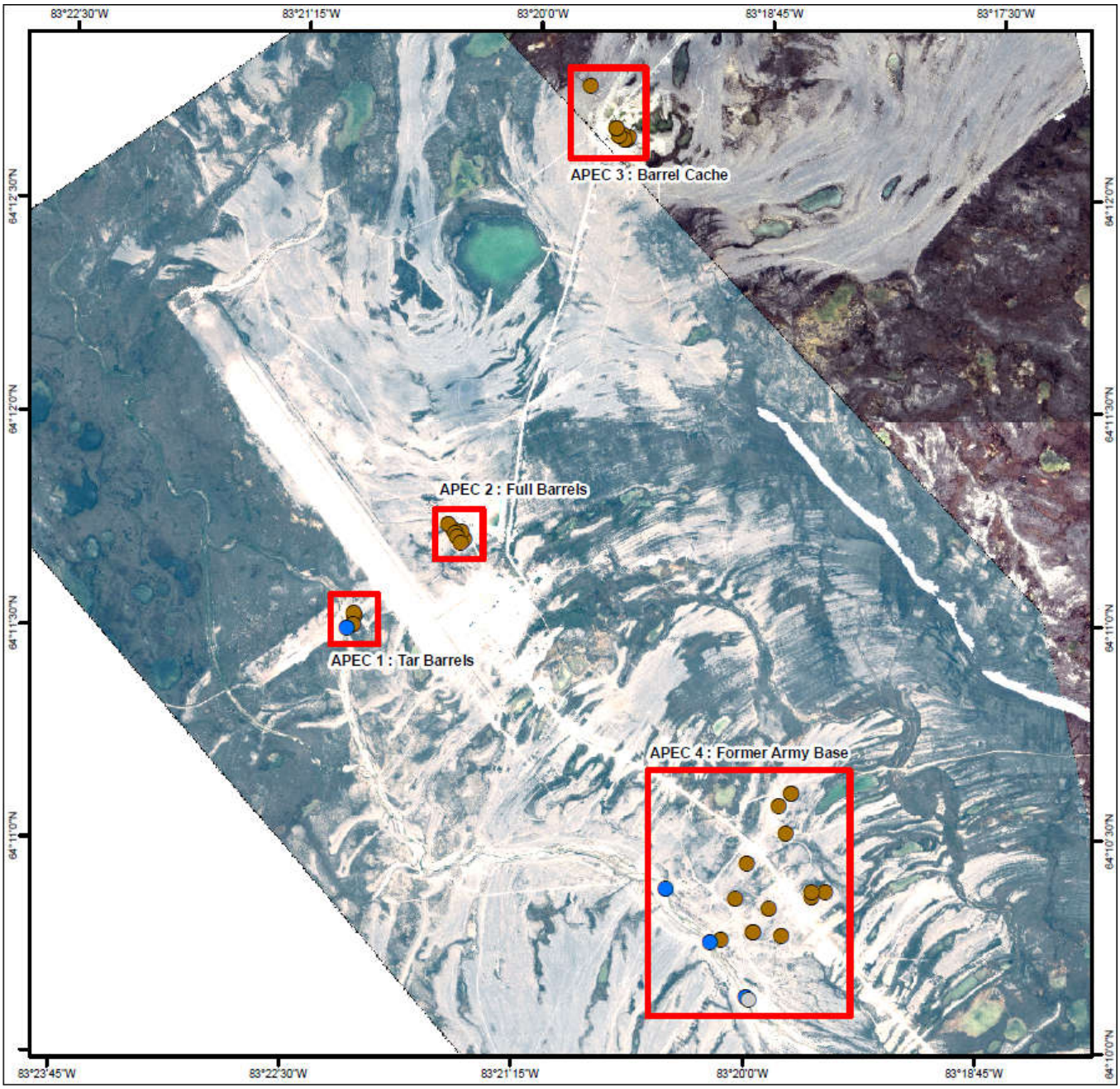
Resource	Location	Phone Number	Fax Number
24 Hour Spill Line	NWT/Nunavut	(867) 920-8130	(867) 873-6924
Local Fire Department	Director / Fire Chief Emergency and Protective Services, Government of Nunavut, Iqaluit, Nunavut	(867) 976-5657	(867) 979-0680
Environment Canada, Enforcement Branch	Enforcement 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: Charlotte Lamontagne, A/Director, Contaminated Sites & Lands (NRO)	(873) 354-1694 (867) 975-4730	- (867) 975-4736
Public Services and Procurement Canada – Project Manager	Project Manager – Caitlin Moore, PSPC Project Manager	(780) 901- 1148	-

7 NT-NU Spill Report Form

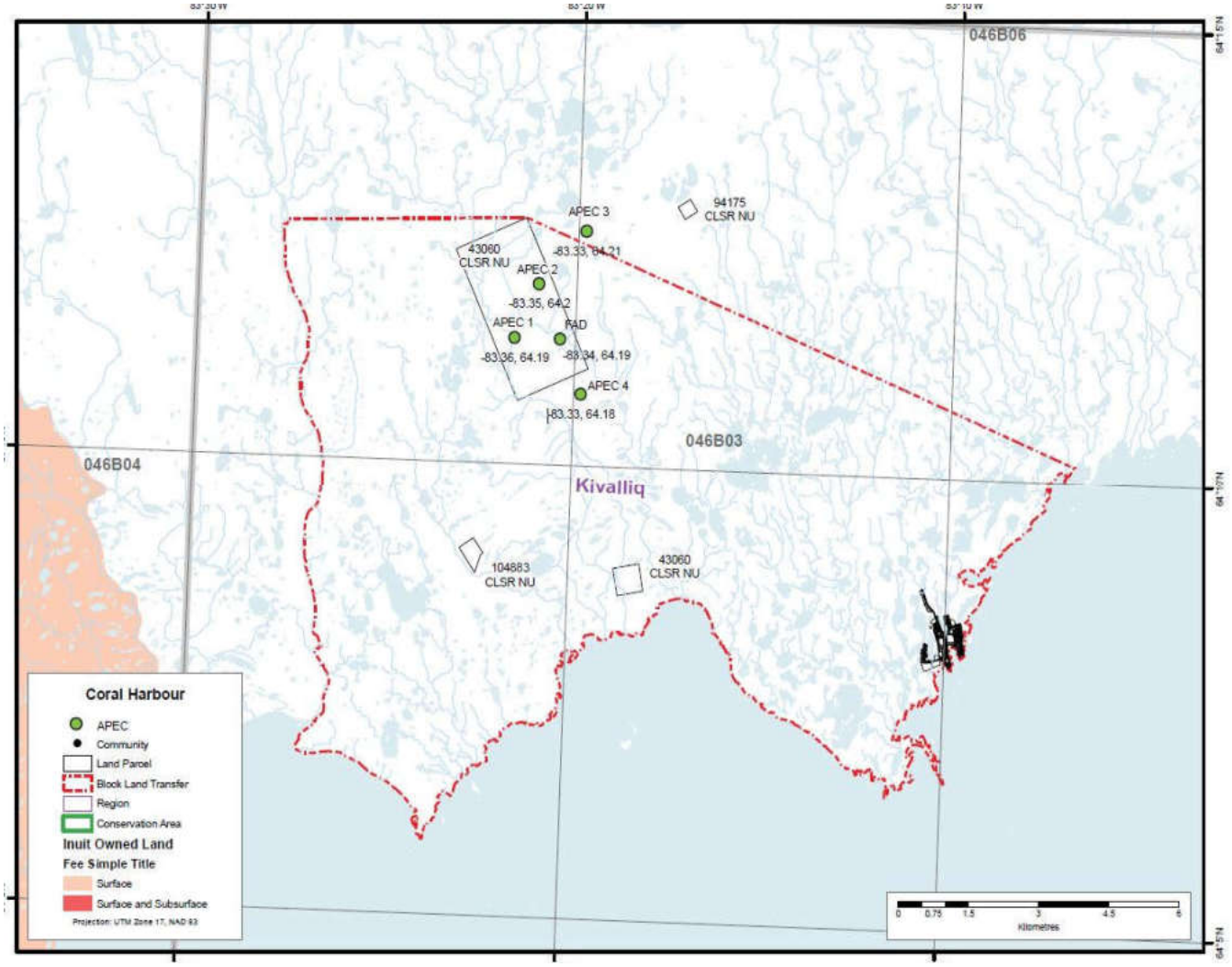
8 MAPS - Site Location, Features and Topography Maps



LOCATION MAP: Coral Habour Site - 10 km East of the Hamlet of Coral Habour, NU, Canada



Map of the land lots and Areas of Potential Environmental Concerns (APECs)



NTS Map Sheet No 046B43 (superimposed with site boundary and APECs/lots (Scale: 1:50,000)