



FOX-D (KIVITOO) SITE REMEDIATION PROJECT *-INTERIM SPILL CONTINGENCY PLAN-*

Prepared by: Indigenous and Northern Affairs Canada

February 17, 2016

Disclaimer

This Interim *Spill Contingency Plan* is being produced by Indigenous and Northern Affairs Canada (INAC) to satisfy the regulatory requirements for the remediation of FOX-D (Kivitoo). It is the expectations of INAC that once a contractor is hired for this remediation work they will update this plan in whatever way they see fit and submit it to the necessary regulatory bodies as a "Final Plan".

1. INTRODUCTION/SITE OVERVIEW

Indigenous and Northern Development Canada (INAC) has applied for, and secured, funds under the Federal Contaminated Sites Action Plan (FCSAP) for the investigation and remediation of FOX-D (Kivitoo, Nunavut) which was an Intermediate Distant Early Warning (DEW) Line Site constructed in 1957 and operated until October 1963. The site is located on the Davis Strait 50 km to the west of the nearest community, Qikiqtarjuaq, Nunavut, at approximately 67° 57' 01" N latitude and 64° 55' 04" W longitude. The site is accessible by fixed wing aircraft, helicopter, and sealift. The contaminants identified at the site for remediation include debris, PCBs, heavy metals, asbestos and hydrocarbons.

After military operations at the site ceased, the site became part of the Auyittuk National Park. FOX-D was within Auyuittuq National Park under the management of Parks Canada until 1992, when custody of the site was transferred to AANDC. Parks Canada managed a partial cleanup of the site between 1973 and 1983. The site is composed of two areas: the Upper Site and Lower Site. All structures at the site were removed to their foundations, with the exception of two vertical fuel storage tanks and a smaller transfer tank left in place at the upper site.

The Upper Site is located at 450 m above sea level and consisted of a continuous wave tower, a main building train, a warehouse, a garage, two 75,000 litre petroleum, oil, lubricant (POL) tanks, and a small building that may have been an Inuit house. Shortly before the site closed in 1963, a fire completely destroyed the main building train, charred remains are still present at the site. To the northeast of these remains, two imprints of what were believed to be temporary accommodations are visible.

The Lower Site is located on a coastal plain to the south of the upper site. It originally consisted of two POL tanks, a beach landing area, drum storage and an airstrip. A freshwater lake, borrow source areas and a construction camp area were also present at the lower site. Currently, the foundation of the two POL tanks, the remnants of the

airstrip, and one small shed are all that remain. The Upper Site to the Lower Site is connected by a 4 km access road.

The site investigation and characterization phases for this project were completed in the summer of 2014, and a Remedial Action Plan (RAP) for the proposed activities was prepared shortly after and will form the basis for this remediation. Project work is scheduled to start in the summer 2016 with the mobilization of equipment to the site via sealift/barge. Once the equipment is on-site we anticipate working at the site for about a month or two before the camp is shut-down and winterized. In the summer of 2017 and possibly 2018 if need be, project work will resume for another 2-3 months. Upon completion all the equipment will be removed from the site via sealift/barge. Throughout the construction activities personnel will be mobilized to and from site via fixed wing aircraft and/or helicopter using the on-site airstrip.

2. FUEL AND HAZARDOUS MATERIAL SPILLS - GENERAL INFORMATION

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 FOX-D (Kivitoo), 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.

This current plan follows the standard procedure adopted by PWGSC / AANDC on Crown lands to address unanticipated spills. The procedure has been customized and made specific to the FOX-D (Kivitoo) remediation project 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 Water Board (NWB) as soon as it is completed. The following information will be included in the SSHSP:

1. A description of pre-emergency planning;
2. Personnel roles, lines of authority and communication;
3. Emergency alerting and response procedures;
4. Evacuation routes and procedures, safe distances and places of refuge;

5. Emergency alerting and response procedures;
6. Directions/methods of getting to the nearest medical facility;
7. Emergency decontamination procedure;
8. Emergency medical treatment and first aid;
9. Emergency equipment and materials;
10. Emergency protective equipment;
11. Procedures for reporting incidents; and
12. 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

The types and approximate quantities of fuels that will be stored on-site are based off our experiences in the remediation of similar sites. The actual amount of fuels and their types will be verified by the hired contractor. We approximate these to be:

Gasoline: Approximately 5125 L stored in 205 L barrels;

Diesel: Approximately 45,100 L stored in 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: Eight (8) 45 kg tanks; and

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

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 31 m away from the camp and the “High Water Mark” of 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 FOX-D (Kivitoo) 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

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.

A variety of fuels (diesel, gasoline and lubricating oils) will be used during the site remediation of the FOX-D 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.

Transportation of fuels must comply with the *Transportation of Dangerous Goods Act and Regulations*.

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.

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 FOX-D 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 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 below. Report spills immediately on the 24-Hour Spill Report Line (867) 920-8130.

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.

Contractor will supply information in regards to the contents of the following:

1) Drum Spill Kits

2) Equipment Spill Kits

5. NOTIFICATION & REPORTING PROCEDURE FOR FOX-D (KIVITOO)

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.
2. A person shall immediately report the spill, where there is a spill, or where there is areas of 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*.
3. Notify appropriate government agencies using the contact list provided below.

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 spill is moving;
 - iv. name and phone number of a contact person close to the location of 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 up and dispose of spilled material;
 - x. name, address and phone number of person reporting spill; and
 - xi. name of owner or person in charge, management or control of hazardous materials at the time of the spill.

6. TRAINING

Site personnel will be trained on refueling procedures and on spill response. Spill response training will include:

- site layout and identification of storage areas
- how to initiate the spill response system
- safety concerns related to spills including fire and explosion
- personal exposure risks to potentially hazardous materials
- protocol for handling spills
- environmental risks to both ground and waterways
- approaches and options to containment and cleanup utilizing the various materials and equipment available onsite
- the use of spill kits and their contents including the use of plugs and plugging compounds
- reporting requirements

7. CONTACT NUMBERS

INAC Water Resources Inspector	867-975-4295
NWT/NU Spill Line	867-920-8130 (Fax) 867-873-6924
GN, Environmental Protection	867-975-6000 (Fax) 867-975-6099
Nunavut Water Board	867-360-6338 (Fax) 867-360-6369
INAC FOX-D Project Manager (Erika Solski)	(867) 975-4577
INAC Manager of Field Ops	867-975-4295
Qikiqtani Inuit Association	867) 975-8400
DFO	867-979-8000
Environment Canada	867-945-4644

8. NT- NU Spill Report Form



Canada

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		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER _____-_____
	OCCURRENCE DATE: MONTH – DAY – YEAR		OCCURRENCE TIME			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	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	

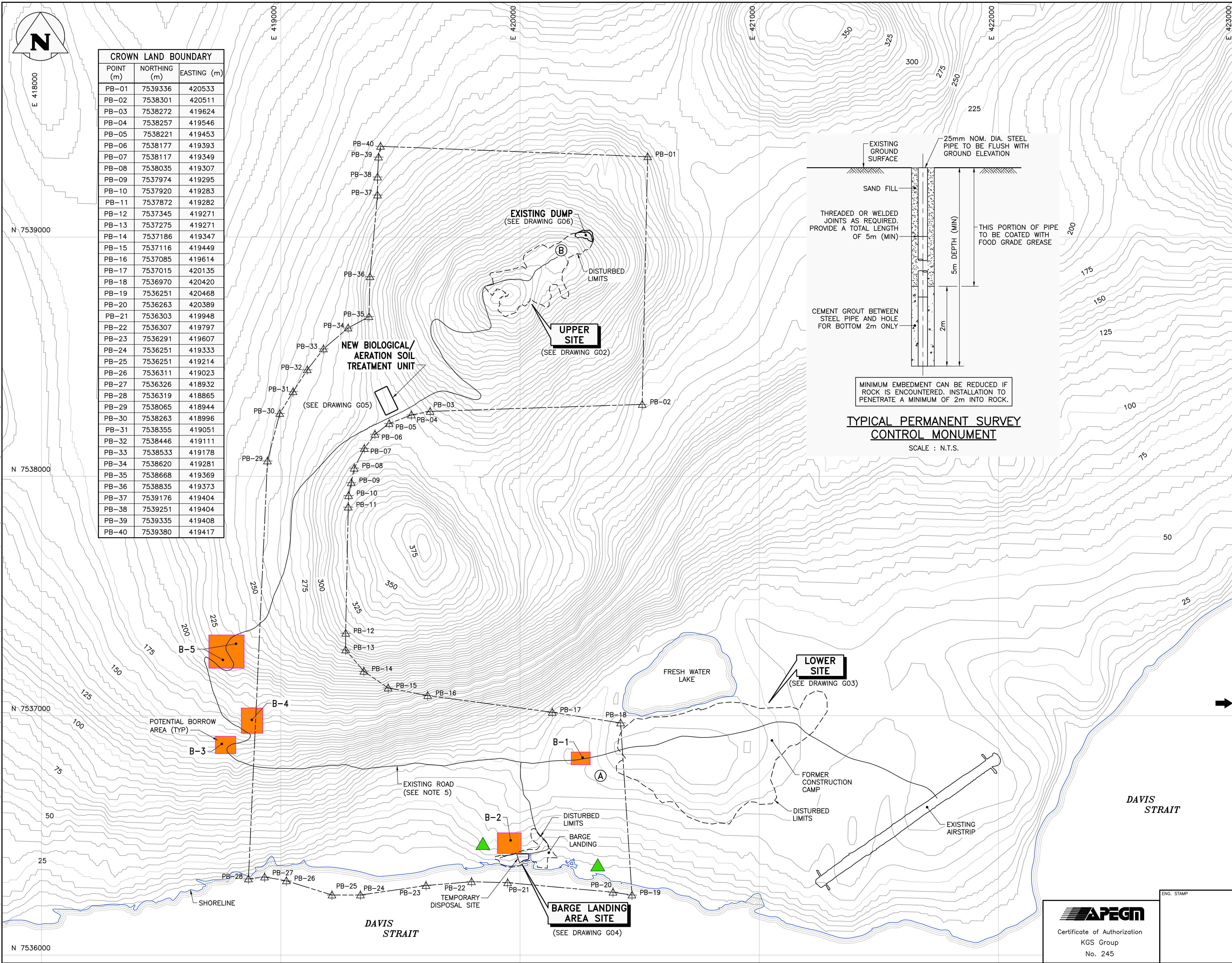
REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLED	REPORT LINE NUMBER
		STATION OPERATOR		YELLOWKNIFE, NT	(867) 920-8130
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS	
LEAD AGENCY					
FIRST SUPPORT AGENCY					
SECOND SUPPORT AGENCY					
THIRD SUPPORT AGENCY					

9. Site Location Maps

(Please Note: Information surrounding the location of spill response equipment, the location of hazardous materials, as well as any other relevant details, is not know at this point as a contractor has not been hired yet)

File Name: P:\Projects\2013\13-0163-002\Drawings\Geo\Tender Drawings\13-0163-002_G01.dwg - Tab: G01 Plotted By: enrique12/22/2014 [Mon 11:12am]

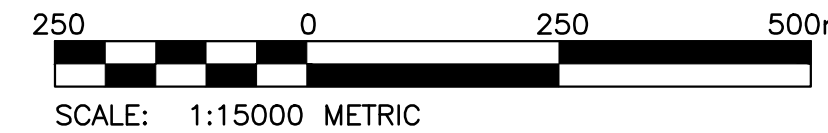


CROWN LAND BOUNDARY		
POINT (m)	NORTHING (m)	EASTING (m)
PB-01	7539336	420533
PB-02	7538301	420511
PB-03	7538272	419624
PB-04	7538257	419546
PB-05	7538221	419453
PB-06	7538177	419393
PB-07	7538117	419349
PB-08	7538035	419307
PB-09	7537974	419295
PB-10	7537920	419283
PB-11	7537872	419282
PB-12	7537345	419271
PB-13	7537275	419271
PB-14	7537186	419347
PB-15	7537116	419449
PB-16	7537085	419614
PB-17	7537015	420135
PB-18	7536970	420420
PB-19	7536251	420468
PB-20	7536263	420389
PB-21	7536303	419948
PB-22	7536307	419797
PB-23	7536291	419607
PB-24	7536251	419333
PB-25	7536251	419214
PB-26	7536311	419023
PB-27	7536326	418932
PB-28	7536319	418865
PB-29	7538065	418944
PB-30	7538263	418996
PB-31	7538355	419051
PB-32	7538446	419111
PB-33	7538533	419178
PB-34	7538620	419281
PB-35	7538668	419369
PB-36	7538835	419373
PB-37	7539176	419404
PB-38	7539251	419404
PB-39	7539335	419408
PB-40	7539380	419417

- LEGEND:**
- CROWN LAND
 - 300 GEODETIC GROUND SURFACE CONTOUR (m)
 - DISTURBED LIMITS
 - B-1 POTENTIAL BORROW AREA
 - PB1 PROPERTY BOUNDARY CONTROL POINT (± 1 METRE)
 - A DESIGNATED CAMPSITE A
 - ENVIRONMENTALLY RESTRICTED AREA

- NOTES:**
- ALL UNITS ARE METRIC AND IN METRES UNLESS OTHERWISE SPECIFIED. TRANSVERSE MERCATOR PROJECTION, NAD 1983, ZONE 20. ELEVATIONS ARE IN METRES ABOVE SEA LEVEL (MSL).
 - CONTOURS ARE SUPPLIED FROM NRCAN, DERIVED FROM 1:60,000 STEREO PAIR IMAGERY.
 - CONTRACTOR SHALL NOT TRAVEL OFF EXISTING ROADS AND MUST STAY WITHIN THE DISTURBED LIMITS.
 - ENVIRONMENTAL RESTRICTED AREAS SHALL BE AVOIDED BY THE CONTRACTOR'S SITE ACTIVITIES.
 - CONTRACTOR IS RESPONSIBLE FOR UPGRADE OF ROAD AS DEEMED ACCEPTABLE BY DEPARTMENTAL REPRESENTATIVE.
 - AREA TO BE EXCAVATED MUST BE FIELD VERIFIED BY DEPARTMENTAL REPRESENTATIVE.
 - TWO (2) PERMANENT SURVEY CONTROL MONUMENTS TO BE INSTALLED. LOCATIONS OF PERMANENT SURVEY MONUMENTS TO BE DETERMINED BY DEPARTMENTAL REPRESENTATIVE AND VERIFIED IN THE FIELD BY THE CONSULTANT.

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION



0	14/12/23	ISSUED FOR TENDER	AMH
NO.	YY/MM/DD	DESCRIPTION	BY

REVISIONS / ISSUE

CLIENT:	Public Works and Government Services Canada	Travaux publics et Services gouvernementaux Canada
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PROJECT:
FOX-D (KIVITOO) DEW LINE SITE
FOX-D SITE REMEDIATION PROGRAM

DWG. DESCRIPTION:

GENERAL SITE PLAN

KGS GROUP CONSULTING ENGINEERS DILLON CONSULTING	DESIGN BY: AMH	DATE (YY/MM/DD): 13/11/01
	DESIGN CHECK: RKe	DATE: 14/12/23
	DRAWN BY: PEC	DATE: 13/11/01
	DWG CHECK: JS	DATE: 14/12/23

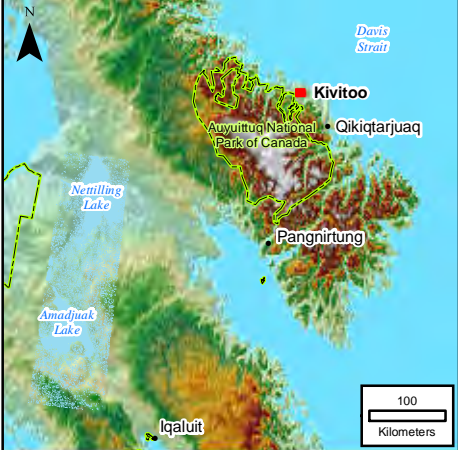
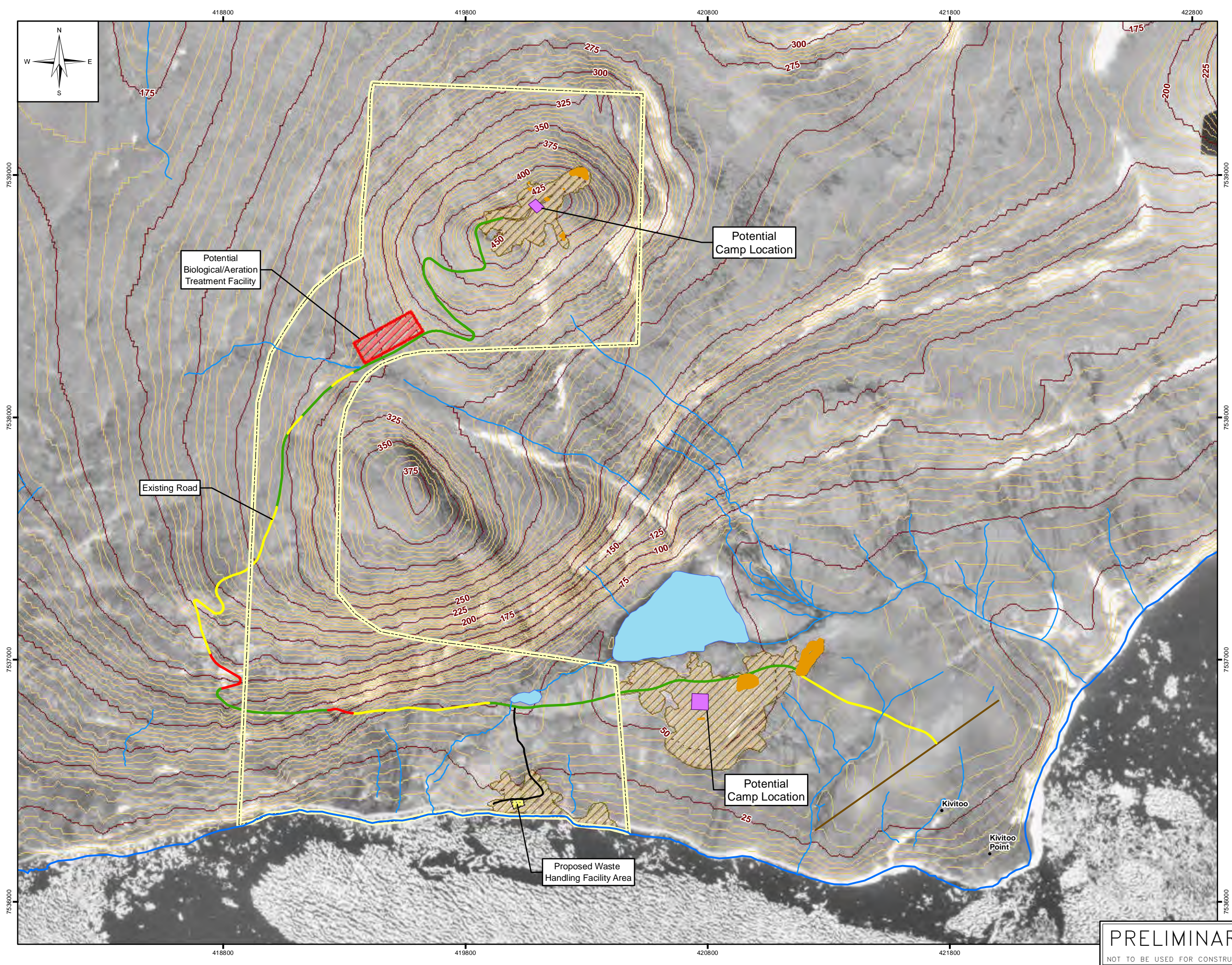
DWG. NO.	13-0163-002	G01	REV: 0
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APEGM
Certificate of Authorization
KGS Group
No. 245

ENG. STAMP

Portions of data presented are owned by the Territory of Nunavut and are produced under the licence agreement with the Territory of Nunavut's Printer.

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11"x17" PLOT SCALE 1:1



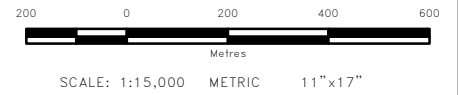
LEGEND:

- Drainage Pathway
- Shoreline
- 5 m Contour
- 25 m Index Contour
- Existing Road
- Airstrip
- Light Grading
- Medium Grading
- Heavy Grading
- Property Boundary
- Existing Landfill
- Lake
- Area of Disturbance/Worked Area
- Proposed Waste Transfer Area
- Potential Biological/Aeration Facility
- Potential Camp Location

NOTES:

1. Imagery: 1:20,000 scale imagery, 1948. National Air Photo Library (NAPL).

2. Contours are supplied from NRCAN, derived from 1:60,000 stereo pair imagery.



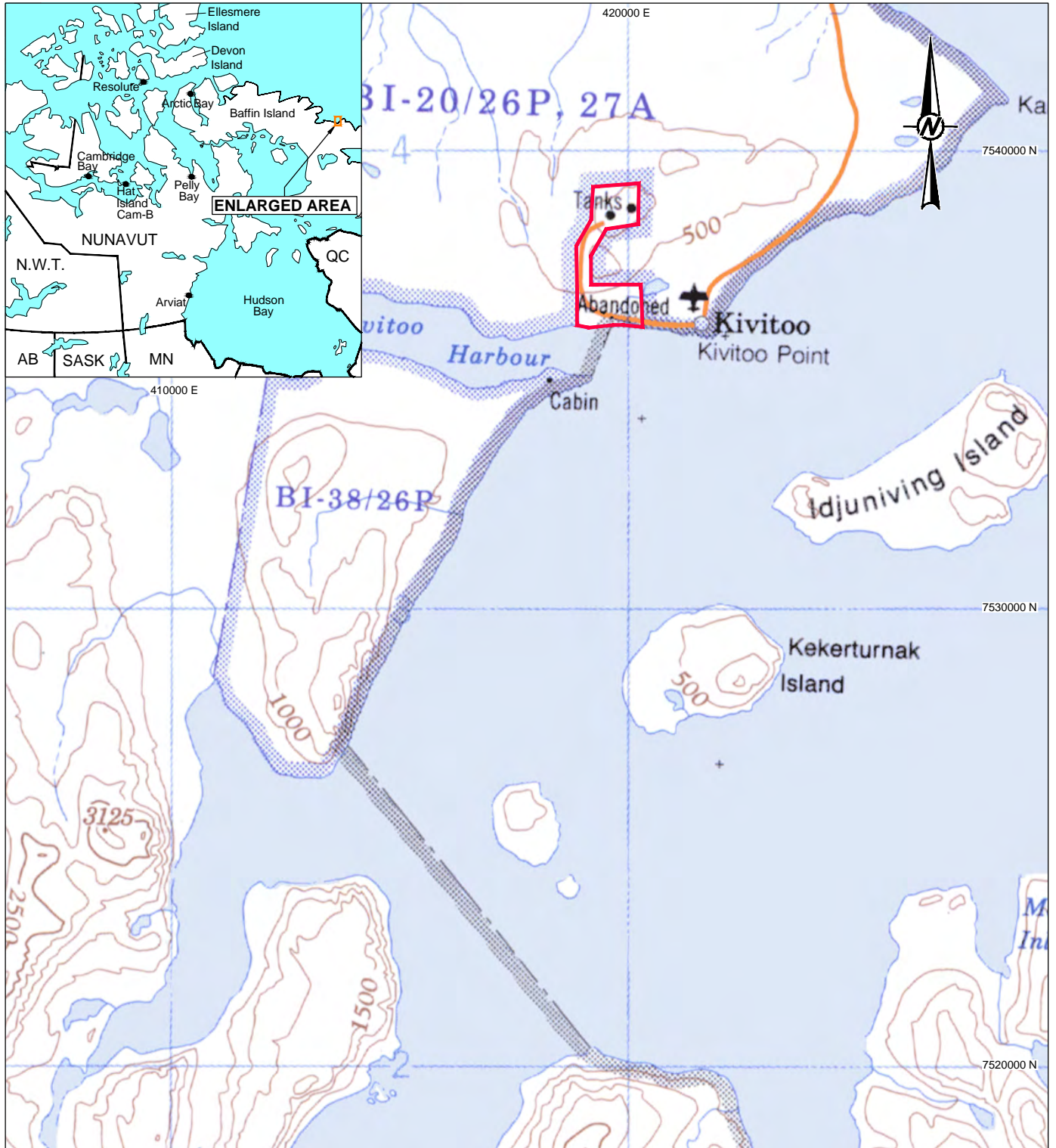
All units are metric and in metres unless otherwise specified. Transverse Mercator Projection, NAD 1983, Zone 20. Elevations are in metres above sea level (MSL).

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NO.	YY/MM/DD	DESCRIPTION	BY

REVISIONS / ISSUE

HAZARDOUS MATERIALS ASSESSMENT
SITE SURVEY & GEOTECHNICAL SERVICES
FOX D DEW LINE SITE BAFFIN ISLAND
REMEDIAL ACTION PLAN REPORT
PROPOSED WORKS

PRELIMINARY
NOT TO BE USED FOR CONSTRUCTION



LEGEND

PROJECT AREA

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REFERENCES

TOPOGRAPHIC MAP 026/P OBTAINED FROM Canmatrix 1 1986. HER MAJESTY THE QUEEN
IN RIGHT OF CANADA. DEPARTMENT OF NATURAL RESOURCES.
DATUM: NAD27 PROJECTION: UTM ZONE 20.
REPROJECTED TO DATUM: NAD83 PROJECTION: UTM ZONE 20.

PROJECT

À
FOX-D DEW LINE SITE, KIVITOO
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TITLE

FOX-D PROJECT LOCATION



PROJECT No.	13.1379.0026.1400A	FILE No.	13137900261400A001
DESIGN	BM	2013-11-25	SCALE AS SHOWN
CADD	BTM	2013-11-28	A
CHECK	BM	2014-05-28	
REVIEW	DB	2014-05-28	

FIGURE: 1