DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT
INDIAN AND NORTHERN AFFAIRS CANADA

SPILL EMERGENCY PLAN

RESOLUTION ISLAND PROJECT

BAF-5 : ABANDONED POLE VAULT MILITARY RADAR STATION

Resolution Island, Nunavut

Prepared by:

QIKIQTAALUK CORPORATION

and

SINANNI INC.

June 1998
(Revised September 2001)

EXECUTIVE SUMMARY

The clean up activities at Resolution Island shall be conducted over a period of five to six years. During the last five years, investigations performed at this abandoned military radar USAF station located in the Canadian Arctic have demonstrated the extent of environmental problems from past occupation.

This document describes requirements for fuel spill emergency planning to be implemented during the clean up work. It includes:

- Duties and Responsibilities
- Fuel and Lube Requirements and Storage Capacity
- Training and Drills
- Material and Equipment
- Emergency Procedures
- Reporting Requirements

The Resolution Island Clean Up project mainly consists in the removal, containerization and storage of CEPA soils (contaminated with > 50 ppm PCBs), as well as management of other immediate health and environmental risk problems such as contaminated soils near water bodies, asbestos and barrel contents (POL products). A remote construction camp shall be operated and managed to accommodate the working crew. Approximately 40 persons will occupy the camp over a 70-90 day period from June 15 to September 15.

This project is funded by the Department of Indian Affair and Northern Development (DIAND) Contaminated Sites Program. The project was granted to Qikiqtaaluk Corporation, a company owned by the Qikiqtani Inuit Association (QIA), the Inuit birthright organization representing the Baffin region of Nunavut.

The Resolution Island Clean Up project shall provide employment and training benefits for Inuit. It shall also attenuate local inputs from pollution to the nearby communities, thereby protecting health and future of the Inuit.

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PREAMBLE

The revision of the Spill Contingency Plan shall be effective from September 2001 until July 2003, date to which the water license expires, and applies to all operations of the Resolution Island Project licenced by the Nunavut Water Board (NWB5RES9803) in the area of Resolution Island: 61° 35' N and 60° 40' W

The following formal distribution has been made of this Plan.

Harry Flaherty, Qikiqtaaluk Corporation, Iqaluit
Scott Mitchell, INAC, Contaminated Sites Office, Yellowknife
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1-GENERAL

The spill emergency plan was developed to assist the Contractor in implementing measures to protect the environment and minimize impacts from spill events. It provides precise instructions to which all personnel shall be familiarized with during emergency situations. The Plan outlines procedures for responding to spills in a way to minimize potential health and safety hazards, environmental damage, and clean up costs.

The map presented on the following page shows the existing layout of the site. Resolution Island is situated at the south-eastern tip of Baffin Island in Nunavut. The abandoned military radar station is being remediated. Soils contaminated with PCBs exceeding 50 ppm are excavated and placed in containers for off-site shipping/disposal. Also, waste oil and remaining petroleum products are being either incinerated on site (when measured contaminant level is below pre-established criteria) or consolidated, secured and temporarily stored for off-site disposal. Apart from the hazardous waste being remediated, hazardous materials used on site include fuel, oil, lubricant and small amount of solvents for laboratory operations.

The spill emergency plan insures that the Contractor will respect all applicable laws, regulations and requirements of federal and/or territorial authorities. The Department of Indian Affairs and Northern Development (DIAND) and the Contractor have acquired all required permits, approvals and authorizations required for the project. The Contractor complies with those permits and approvals obtained on behalf of and/or by DIAND to conduct this work. The Contractor works in close collaboration with DIAND and with all regulatory authorities to ensure full compliance according to applicable federal or territorial laws, regulations and/or guidelines. The following documents shall be used as guidelines for spill containment:

1. The *Canadian Environmental Protection Act* controls hazardous substances from their production and/or import, their consumption, storage and/or disposal. Furthermore, this act also includes procedures to handle specified levels of PCB contaminated materials, and requirements for PCB storage facilities.

2. The *Fisheries Act* protects fish and their habitat from pollution, disturbance, or fish movement disturbances. Fisheries and Oceans Canada is responsible to review permit applications or restoration plans submitted by other agencies.

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

CONTAMINATED SITES OFFICE

GENERAL NOTES:

LEGEND:

No.	DATE	REVISION	REVISION	APPD.

SCALE - ECHELLE

PROJECT - PROJET

BAF-5 RESOLUTION ISLAND

TRADE - METIER	DATE
SITING	2001-10-05

SUBJECT - SUJET

GENERAL LAYOUT

PRODUCTION	CONCURRENCE - ASSENTIMENT
DESIGNED - ETUDIE	P.S.
DRAWN - DESSINE	G.J.
CHECKED - VERIFIE	K.C.
CO-ORDINATION	REVIEWED - REVU

DWG. NO. - DESSIN NO.

SP-2001-102-01

Canada

3. The *Transportation of Dangerous Goods Act* and *Regulations* describe safety measures in the transportation of dangerous goods. The act applies to all handling of dangerous goods by any means of transport whether or not the goods originate from or are destined for any place(s) in Canada.

4. The *Territorial Land Use Regulations* define regulatory measures to maintain appropriate environmental practices for any land use activities on territorial lands. These regulations require that land use permits be issued for such operations as the clean up work to be conducted at Resolution Island (use of heavy machinery, camp operation, use of explosives, construction of access roads, etc.).

5. The *Guidelines for Preparation of Hazardous Material Spill Contingency Plans* describe parameters that should be considered in the development of hazardous material spill emergency plans. It also defines the information that should be incorporated into a comprehensive contingency plan.

6. The *Code of Practice for Used Oil Management* defines appropriate environmental options for handling, storage, collection, recycling, transportation, reuse and/or disposal of used oils in Canada. It gives standard procedures to handle used oil generators. It also helps regulatory authorities to formulate provincial and/or regional strategies for used oil management.

7. The *NWT Environmental Protection Act* governs the protection of the environment from contaminants. The act defines offenses and penalties as well as the powers of environmental inspectors.

8. The *NWT Spill Contingency Planning and Reporting Regulations* describe requirements for spill reporting and emergency planning.

9. The *Field Guide for Oil Spill Response in Arctic Waters* developed by the Emergency Prevention Preparedness and Response, a program of the Arctic Council, describes response methods and strategies for operations and provides technical support documentation.

2-FUEL AND LUBE REQUIREMENTS AND STORAGE CAPACITY

A variety of fuels, oils and other hazardous materials are used during clean up activities at the Resolution Island site. The greatest volumes involved consist in Arctic diesel, Jet A1 fuel (Type F-34 #CAN/CG-SO-3.23-97). Other substances such as lubricant oils, hydraulic fluid, antifreeze, fuel additives, gasoline, solvents, engine coolants are used but their volumes are small compared with diesel fuels. All these products are to be considered as potential environmental and safety hazards.

Appendix 1 presents the liquid consumption chart for fuel, oil and lube based on the list of equipment and the time sheet estimates over a 2 year period (70-90 days per construction season). The following table summarizes the estimated quantities used per year.

Table-1: Estimated Quantities of Petroleum Products Used per Season

Liquids to be used	Estimated Volumes (Litres)
Jet-A1 diesel fuel	200,000
Gasoline	15,000
Engine oil	900
Transmission oil	1,500
Differential oil	325
Hydraulic oil	950
Coolant	310

The Jet-A1 is supplied by a tanker and the fuel is pumped from the ship directly into the fuel tanks located at the beach level near the existing North Warning System (NWS) facilities. The existing NWS pipe distribution system can be used to supply the fuel. For Jet A1, the following storage capacity are used:

- Eight (8) above ground steel self-contained fuel tanks having approximate capacity of 32,000 litres each (Standard Temperature and Pressure conditions) located at the beach level tank farm (see drawings in appendix 2).
- One (1) above ground steel fuel tank with a lined containment berm having approximate capacity of 60,000 litres located at the summit near the construction camp.

- One (1) above ground steel self-contained fuel tank having approximate capacity of 32,000 litres located near the helipad at the summit area.
- One (1) above ground steel fuel tank having approximate capacity of 7,000 litres to supply the old construction camp generator.
- Two (2) above ground steel fuel tanks having approximate capacity of 1,000 litres and one (1) above storage tank of 5,000 litres to supply the new construction camp generator.
- One (1) above ground steel fuel tank having approximate capacity of 5,000 litres for vehicle diesel supply located near the helipad.
- Nine (9) above ground steel fuel tanks having approximate capacity of 1,000 litres to supply the construction camp furnaces.
- One (1) above ground steel fuel tank having approximate capacity of 1,000 litres to supply the waste oil incinerators located near the maintenance building.

For other petroleum products, the following storage facilities are used:

- One (1) above ground steel fuel tank having approximate capacity of 5,000 litres for vehicle gasoline supply located near the helipad.
- One seacan containing drums of oil, grease and lubricants, and 4 gallon containers of oil-gasoline mix. The seacan is located next to the garage at the summit area.
- One (1) platform with berm for waste oil incineration with an above ground feeding tank of approximately 5,000 litres within a bermed area, and a wheeled tank of approximately 5,000 litres located at the maintenance building area.

A fuel truck having a tank of 11,500 litres is used to supply tanks located on the summit and daily tanks on equipment and vehicles. The fuel truck is equipped with a pump and a flow meter for transfer operations. Hand operated or mechanical pump are used for fuel transfer operations with drums of gasoline, oils and lubricants.

Other hazardous materials on site include chemicals used/stored at the mobile laboratory. Queen's University Analytical Services Unit (ASU) is responsible for the operation of the on-site laboratory. The following chemicals are used as part of the routine analysis being performed[1]: acetone, hexane, methylene chloride, chloroform, methanol, phosphoric acid, 4-aminophenazone, sodium borate, potassium ferricyanide, sodium potassium tartrate, copper sulphate, urea, compressed

[1] Small quantities of the required solvents and chemicals are stored inside the laboratory. Solvents are kept in 4-liter glass containers stored inside cabinets.

gases (helium, hydrogen, nitrogen and air), diluted standard solutions, pH buffer solutions. Appendix 3 provides the MSDS for chemicals used by the Resolution Island Project on-site laboratory.

3-DUTIES AND RESPONSIBILITIES

As part of the spill emergency response, the Contractor is responsible of implementing, through its site superintendent or its authorized representative, the following procedures:

a- To communicate immediately the spill event to the DIAND official (immediately shall mean upon discovery).

b- To authorize the use of personnel and applicable equipment to contain the spill using the most reliable method.

c- To eliminate all fire hazards and potential ignition sources near the spill area.

d- To implement all required safety and security procedures at the site of the spill.

e- To eliminate the source of the spill or reduce the rate of discharge, if such procedures can be implemented with respect to health and safety requirements.

f- To contain the spill using the most appropriate methods for the situation (dykes, ditches, sorbent materials, containment booms and other barriers).

g- To evaluate the possibilities of recovering spilled chemicals.

h- To mobilize all available personnel, equipment and tools, as required.

i- To obtain assistance from DIAND (through its official) and/or from Environment Canada, if required. To consult and, if required, request assistance from the Canadian Coast Guard and/or and Fisheries and Oceans Canada if the spill affects water.

j- To obtain additional assistance by hiring northern residents from local communities and/or specialized spill response firms, if required.

k- To comply with all applicable guidelines and regulations.

l- To assess on a preliminary basis, environmental impacts on marine, freshwater and terrestrial wildlife and on the general ecosystem and then to communicate with relevant authorities.

m- To provide documentation for all events and actions.

n- To report the event to the GNWT Spill Report Line and to prepare and submit a written spill report using the appropriate form (see below for the list of information required for such submittals).

As part of the spill emergency response, the Site Superintendent is responsible for the implementation of the following procedures:

a- To ensure that appropriate resources required to respond and clean up the spill are made available.
b- To supervize containment, clean up and restoration operations.
c- To provide documentation for all events and actions.
d- To notify relevant government authorities.

The site superintendent, acting as the incident commander, will have authority over the following department/unit, each having a specific role for the spill response operations:

Table-2: Roles of Key personnel under the site superintendent for spill response

Department/Unit	Responsibility
Fire Chief	Ensure existing conditions do not present a fire/explosion hazard
Health & Safety Officer	Ensure spill response workers are not exposed to health and safety risks
Site Engineer	Coordinate spill response methods and procedures
Medical / Rescue Unit	Provide assistance to victims (if required)
Spill Response Team Leader	Implement the containment and clean up activities
Containment Unit	Perform spill response
Clean up Unit	Conduct remediation

Once a spill event is reported, the site superintendent, fire chief, health & safety officer and site engineer shall meet to establish a specific strategy for containing and controlling the spill and to initiate the clean up activities. They shall delegate a person - the Spill Response Team Leader - to oversee the implementation of the strategy. Members of the Resolution Island Fire / Rescue Team, under the direction of the Spill Response Team Leader shall then coordinate the activities of the Containment and Clean up Units. Figure-2 illustrates a graphic representation of the emergency team and chain of command.

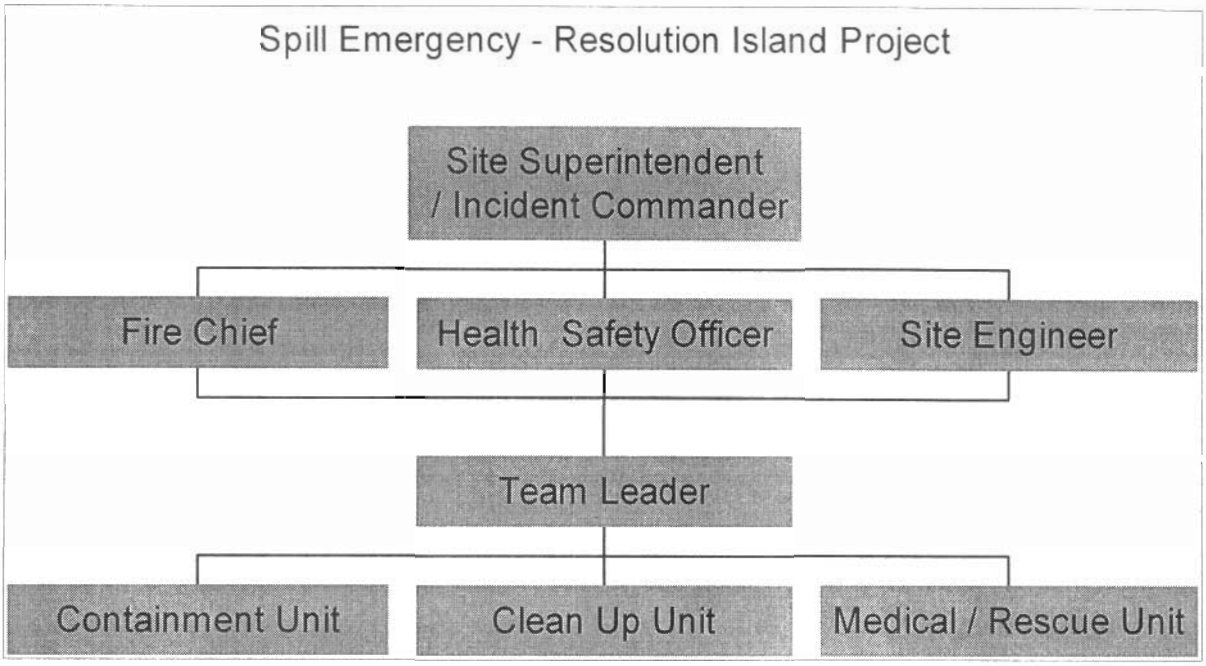


Figure-2: Emergency Response Team

Otherwise, the Contractor will ensure that any selected shipment company have prepared the contingency plans (emergency response plans {ERP}) required to face spill events, and that they can comply with all applicable regulations. The shipment company will be responsible to register their ERP, if required, with the Director General of the Transport of Dangerous Goods Directorate if materials identified for transport are exceeding volumes listed on schedule XII of the TDG regulations. The ERP shall contain information on the nature of risks from dangerous goods and contact names and numbers for emergency assistance.

If during transport, a spill of hazardous materials exceeds the volumes listed in Part 9, Table I of the TDG regulations, the shipment company authorities will have to immediately notify the relevant authorities using the contact lists defined in Table II of the same regulations. The shipment authority will also have to inform his/her employer, the owner of the transport vehicle, and the dangerous goods owner. The shipment authority's employer will then be required to submit a written report to the TDG Director General within 30 days following the spill event.

The Contractor will ensure that the selected shipment company reports the spill events, if those occur, using the appropriate spill response line. Quantities of substances which represent "a spill"

are listed in schedule B of the NWT Spill Contingency and Reporting Regulation.

If a spills occurs on water during shipment of material or fuel supply, the shipment company will be responsible to deploy containment booms and recover as much fuel as possible with required and available equipment.

4-TRAINING AND DRILLS

All personnel on site shall be informed that any spill of fuel and/or hazardous liquids or solids, whatever the extent, has to be reported immediately to the site superintendent or his authorized representative.

The site superintendent and the health and safety officer shall select a group of 4 to 6 on-site workers to be assigned to spill containment in case of emergency. These persons shall be aware of available spill containment equipment, protective clothing and containers and shall be responsible to implement procedures and coordinate other workers if required. These persons shall also be aware that defensive actions and techniques employed will depend on a variety of factors. These include, but are not limited to:

a- type of pollutant;
b- degree of loss;
c- topography of the nearby area; and
d- proximity to water.

Also, they should know that the most common pollution incident potentially occurring at the Resolution Island site will probably be caused by fuel, oil or other hazardous fluid spills onto land or water resulting from:

a- human error during transfer operations of fuel from storage tanks to day tanks;
b- rupture of lines, tanks or valves from accidental damage, deterioration or equipment failure; and
c- leaks from fittings or valves.

Finally, the spill containment team shall be aware that, if a spill occurs, the protection of human health and safety shall be a priority. Even if emergency procedures are attempted to rapidly clean, contain and dispose released contaminants to minimize further environmental impact, human exposure during spill event is to be considered as a real concern and be prevented.

The Contractor site superintendent shall organize a drill with each rotating spill containment team

near the beginning of each season. These drills shall mainly be used to determine the time required to mobilize equipment at the tank farm.

5-MATERIAL AND EQUIPMENT

In order to prevent spills and provide an appropriate response in case of spill events, the Contractor maintains on-site appropriate equipment and material required. These equipment and materials are present on site. A list of spill prevention and spill containment equipment including protective clothing is presented below. Figure-3, -4 and -5 present the locations of hazardous material and spill kits at the summit area, the incineration platform and at the beach area.

5.1 Spill Prevention

The materials and equipment used for spill prevention are essentially related to waste oil incineration, fuel tank inspection, and temporary containment basin construction:

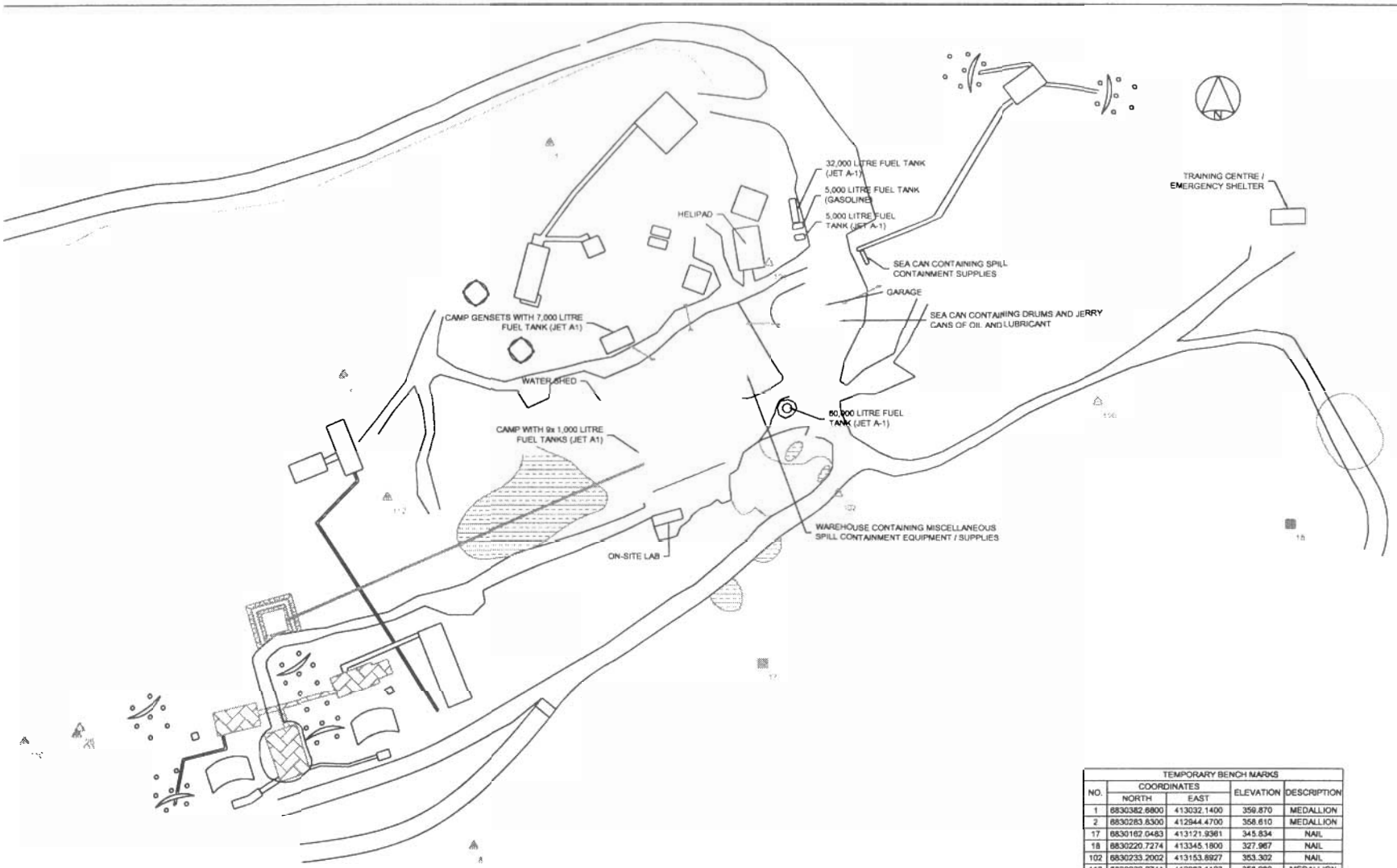
Qtt	*Description*
2	tank level measuring rods
1	roll of HDPE geomembrane
2	Westland waste oil burner

5.2 Spill Containment

The material and equipment to be used for spill containment and emergency response including protective clothing are:

Qtt	*Description*
7	Drummed spill kits
10	Rolls of sorbent sheets
28	10 feet long/8 inch diameter oil sorbent booms
20	Bales of hay
2	Devair 4.6 CFM air compressor
2	Monarch 3.5 HP centrifugal water pump
4	Burke submersible water pump
1	Hydraulic pump gold cup
5	Boxes of assorted plumbing fittings
1	Electric oil pump 220 V on stand

1	5,000 Litre fuel storage tank (tower)
1	3,500 Litre fuel storage tank (camouflage)
1	6,000 L mobile fuel tank
1	300 Gal sump tank (black)
1	350 Gal water tank (white)
2	Wilden 1 ¼" diaphragm pump
10	1 ½" x 25 ft oil hose c/w kamlock fittings
10	Emergency eye wash station c/w saline solution
25	First aid kit
7	Case of disposable coveralls (50 per case)
2	Cat bulldozers (D7 and D6)
2	Cat excavators (315L and 322BL)
3	Cat integrated tool carriers (IT24 and IT38(2)) c/w snow/gravel bucket, 4 ft forks, material handling arm
2	Cat dump trucks (D250)
1	Case 1845C skid loader
2	Bobcat and Kubota mini loader
25	Fire extinguishers
8	Fire extinguishers, class ABC, 20 lbs dry chemical
1	high pressure air compressor c/w moisture separator, low pressure regulator, adaptor to recharge fire extinguishers and Scott paks
2	5 Gallons pail fire extinguisher dry powder
6	Scott air pak (Draeger)
12	spade nose shovels
1	Electric fuel pump - stationary 115 V, approx. 15 USGAL/min , explosion proof switch, water sediment filter
200	Leather work gloves
100	Rubber gloves
5	Cartridge half mask respirator
1	Cartridge full face respirator
40	Organic vapour cartridges
120	Pre-filters and filter clips
400	Disposable dust masks
40	Rubber boots steel toe and shank
20	Safety goggles
Many	Sand and gravel stockpiles scattered all over the site



TEMPORARY BENCH MARKS

NO.	COORDINATES		ELEVATION	DESCRIPTION
	NORTH	EAST		
1	6830382.6800	413032.1400	359.870	MEDALLION
2	6830283.8300	412944.4700	358.610	MEDALLION
17	6830162.0483	413121.9361	345.834	NAIL
18	6830220.7274	413345.1800	327.967	NAIL
102	6830233.2002	413153.8927	353.302	NAIL
112	6830232.2741	412963.1123	358.080	MEDALLION
120	6830272.2392	413263.8466	346.448	NAIL
121	6830331.2287	413124.8917	356.667	NAIL

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

CONTAMINATED SITES OFFICE

General Notes:

Legend:

NO.	DATE	REVISION	REVISION	NO.

SCALE - ECHELLE 20 10 0 20 40 m

PROJECT - PROJET

BAF-5 RESOLUTION ISLAND

TRADE - METIER	DATE
SITING	2001-10-05

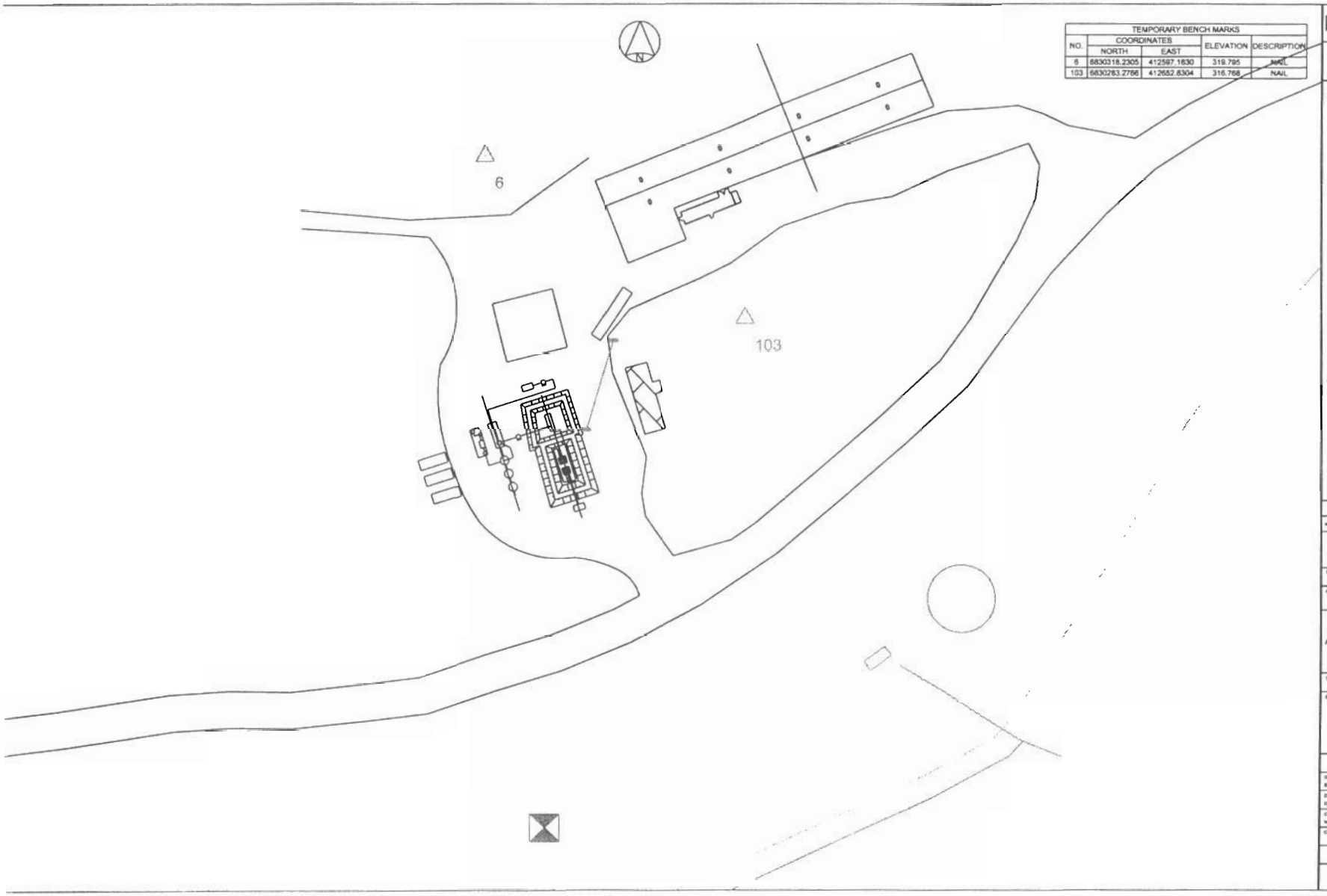
SUBJECT - SUJET

LOCATION OF HAZARDOUS MATERIAL AND SPILL KITS AT THE SUMMIT AREA

PRODUCTION	CONCURRENCE - ASSENTIMENT
DESIGNED - ETUDIE	P.S.
DRAWN - DESSINE	G.J.
CHECKED - VERIFIE	K.C.
CO-ORDINATION	REVIEWED - REVU

DWG. NO. - DESSIN NO.
SP-2001-102-02

Canada



TEMPORARY BENCH MARKS				
NO.	COORDINATES		ELEVATION	DESCRIPTION
	NORTH	EAST		
6	6830318.2305	412587.1830	319.795	NAIL
103	6830263.2766	412652.8304	316.768	NAIL

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

CONTAMINATED SITES OFFICE

General Notes:

Legend:

- TEMPORARY BENCHMARK
- MEDALLION
- TEMPORARY BENCHMARK
- BURIED ELECTRICAL LINE

No.	DATE	REVISION	REVISION

QIKIQTAALUK CORPORATION
LDS CONSULTANTS INC.

SCALE - ECHELLE

PROJECT - PROJET

BAF-5 RESOLUTION ISLAND

TRADE - METIER	DATE
SITING	2000-11-24

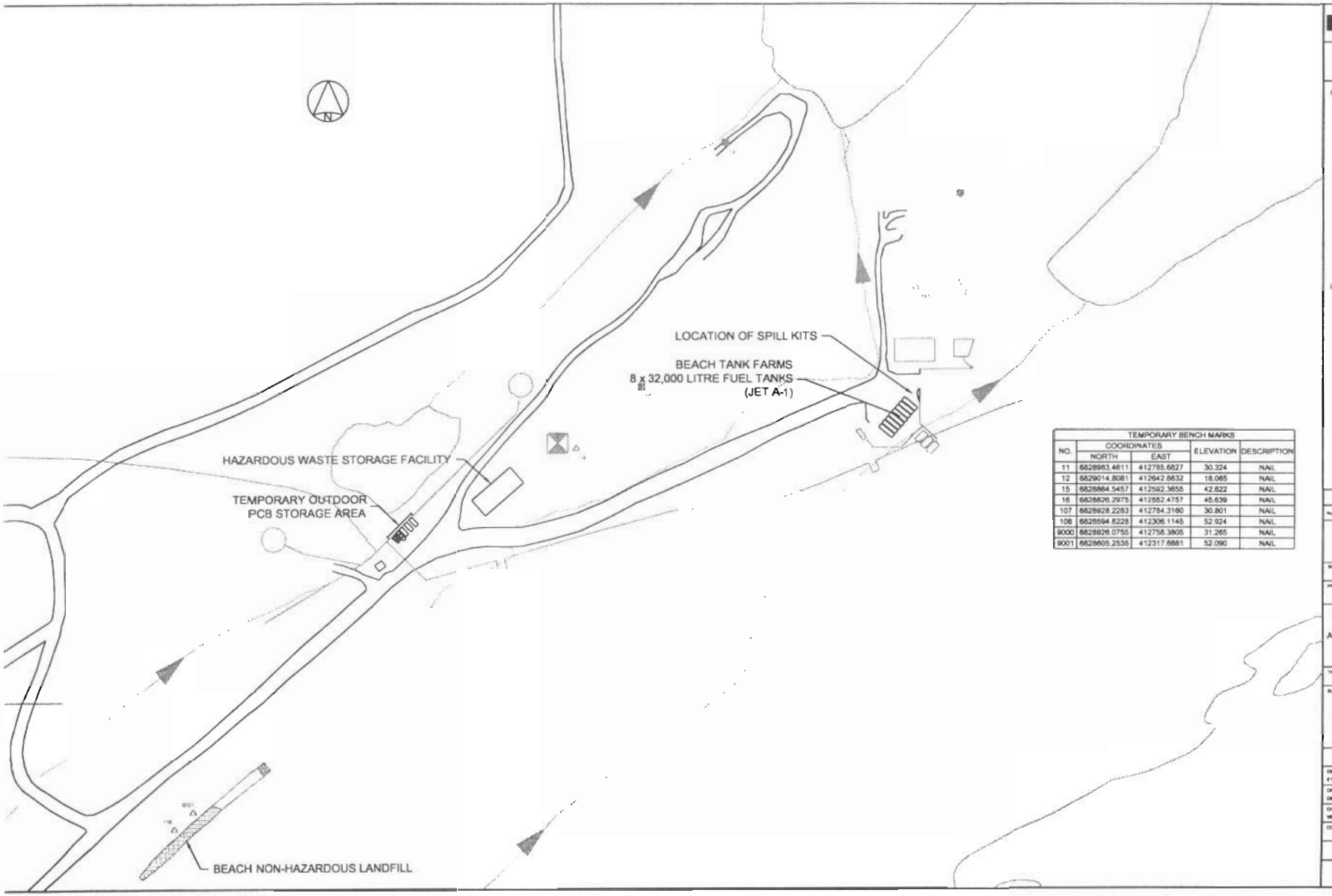
SUBJECT - SUJET

MODIFICATIONS MADE TO MAIN PCB STORAGE FACILITY AND SURROUNDING AREA DURING THE 2000 WORK SEASON

PRODUCTION	CONCURRENCE - AMENDMENT
DESIGNED ETUDIE	S.D.
DRAWN DESSINE	G.J.
CHECKED VERIFIE	P.S.
CO-ORDINATION	REVIEWED - REVU

DWG NO. - DESSIN NO.
AB-2000-102-05

Canada



TEMPORARY BENCH MARKS				
NO.	COORDINATES		ELEVATION	DESCRIPTION
	NORTH	EAST		
11	6828983.4811	412785.6827	30.324	NAIL
12	6829014.8081	412642.8832	18.065	NAIL
15	6828864.5457	412592.3655	42.822	NAIL
16	6828826.2975	412552.4757	45.639	NAIL
107	6828928.2283	412784.3160	30.801	NAIL
108	6828594.8228	412306.1145	52.924	NAIL
9000	6828926.0755	412758.3805	31.265	NAIL
9001	6828605.2535	412317.6881	52.090	NAIL

DEPARTMENT OF INDIAN AFFAIRS AND NORTHERN DEVELOPMENT

CONTAMINATED SITES OFFICE

General Notes:

Legend

No.	DATE	REVISION	REVISION	No.

SCALE / ECHELLE

PROJECT / PROJET

BAF-5 RESOLUTION ISLAND

TRADE - METIER	DATE
SITING	2001-10-05

SUBJECT - SUJET

LOCATION OF HAZARDOUS MATERIAL AND SPILL KITS AT THE BEACH AREA

PRODUCTION	CONCURRENCE - ASSENTIMENT
DESIGNED / ETUDIÉ	P.S.
DRAWN / DESSINÉ	G.J.
CHECKED / VERIFIÉ	K.C.
CO-ORDINATION	REVIEWED / REVU

DWG. NO. - DESSIN NO.

SP-2001-102-03

Canada

6-SPILL RESPONSE PROCEDURES

Following a spill event, specific procedures shall be implemented by the person who first noticed the emergency situation. These procedures are as follows:

a- Immediately warn other personnel working near the spill area.

b- Evacuate the area if health and safety are judged to be threatened.

c- If not, take appropriate measures to stop, contain and identify the nature of the spill.

d- Report to the DIAND site representative and the Contractor's site superintendent all relevant information concerning the spill event such as the type and volume of contaminant, the location and approximate size of the spill, the actions already taken to stop and contain the spill and all other observations including the presence of wildlife and meteorological conditions.

The spill clean up approaches shall be discussed with Environment Canada and the selected methods shall be based on criteria where the impacts on human health and safety, wildlife, land, water and other environmental parameters are minimized.

To manage a spill incident, some emergency clean up guidelines shall be followed by the Contractor when applicable. These incorporate some of the material previously described and include:

a- Sorbent materials will be used to contain the spill and/or to minimize its movement.

b- Appropriate protective clothing and other safety devices will be used to handle spilled materials.

c- When the spill occurs on land, dykes may be constructed to limit the spill movement providing granular material is sufficiently available. Snow dikes covered with an impermeable liner may also be used if snow still remains. Otherwise, containment booms will be installed in front of the plume and secured to make sure these sorbent barriers do not get saturated.

d- Any free product settled in ditches, trenches or any other ground cavities will be removed using equipment such as pumps, buckets or skimmers. Recovered fluids will be temporarily stored in appropriate containers.

e- Any spill areas will be cleaned up to an extent where land, water and other disturbed environmental systems are restored and the site is left as close as possible to its original state.

7-POTENTIAL SPILL ANALYSIS

As part of the analysis of potential spills, their fates and effects, three potential sources of spills have been identified on Resolution Island. The first is the fuel tank farm located at the lower site. The second are the various fuel tanks located at the upper site. The third consists in the fuel truck itself. Each of these three sources is analyzed in detail in the following pages.

7.1- Scenario #1: Lower Site Tank Farm

The tank farm consists of eight (8) self-contained fuel tanks. Each tank holds 7,200 gallons of Jet-A1 fuel. The 8 tanks are independent and separated from the main line by two valves, therefore the spillage of one tank would not affect the other tanks.

Two potential situations could occur that would cause a spill:
1) the sudden breakage of the tank outlet pipe, between the tank and the first valve;
2) the rupture of the tank and the outer containment shell, possibly from a violent impact caused by the collision of a vehicle or piece of heavy equipment.

In the first case, the spilled volume would be, at worst, 7,200 gallons, which represents the entire volume of one tank. In the other case, we can assume that the impact would occur at mid-height on the tank and, at worst, two tanks would be affected. Therefore the spilled volume would be 3,600 gallons per tank for a total volume of 7,200 gallons.

In either case the spillage flowrate would be moderate to high and we can assume that the entire volume would be spilled within 15 to 20 minutes.

The general direction of migration would be along the road down towards the beach area. The ocean high water mark is located some 75 metres down-gradient from the tank farm. It is unlikely that the spilled fuel would reach the ocean because the porous sandy soil along the way would soak up part of fuel, and also because the low slope will not allow for rapid flow of fuel, thereby providing enough time for the spill response procedures to take effect.

The spill would be communicated by the witness of the scene to the site superintendent, or in his absence, the assistant site superintendent. The latter would then go down the chain of command and advise the appropriate persons of the immediate actions to be taken. Radio communication is used at all times on the island and key team members carry a radio with them at all times.

The personnel responsibilities are outlined in previous sections of this document. The witness of the spill would be advised to try to stop the source of the spill, while waiting for backup help to arrive; his actions would be immediate. The site engineer would coordinate the spill response activities carried out by the containment unit. Members of this unit would be mobilized to the lower site. The lower site can be reached from any other area of the site within a maximum of 25 minutes.

Mobilization of containment equipment to the spill site can be carried out rapidly. A bulldozer and bucket loader are present in close proximity and can reach the site of the spill within a matter of minutes. A sand and gravel stockpile is also located in the vicinity, if required for berm construction. Spill response kits containing sorbent material are kept next to the tank farm and in the hazardous waste storage warehouse located a few hundred metres away. Containment would be carried out by the construction of soil berms and the installation of sorbent booms. After containment, clean up equipment can be mobilized to the site. A list of equipment is presented in previous sections of this document.

Safety hazards associated with the spill event includes the risk of fire. This can be minimized by preventing personnel from smoking near the spill scene. Risks to personnel (from inhalation and dermal contact) can be prevented by the proper use of personnel protective equipment.

Measures and procedures to prevent such events from occurring include regular inspection of the tanks and containment system, and safety rules concerning the use of vehicles and heavy equipment on site, especially in close proximity to the tank farm (*e.g.,* speed limits, training of heavy equipment operators, etc.).

7.2- Scenario #2: Upper Site Tanks

Four (4) tanks, containing significant volumes of fuel are located at the upper site:

- 13,500 gallon Jet-A1 fuel tank, located approximately 25 metres away from the core camp and maintenance garage, and adjacent to the household waste landfill. This tank is contained by a spill containment basin;
- 7,200 gallon self-contained Jet-A1 fuel tank, used to supply fuel to the helicopter, located adjacent to the helipad;
- 1,000 gallon Jet-A1 fuel tank, used to supply fuel to vehicles and heavy equipment, located adjacent to the helipad;
- 1,000 gallon gasoline tank, used to supply fuel to vehicles and small equipment, located

adjacent to the helipad;

Two potential situations could occur that would cause a spill:
1) the sudden breakage of tank piping or fittings;
2) the rupture of a tank and its containment basin, possibly from a violent impact caused by the collision of a vehicle or piece of heavy equipment, or even a helicopter crash.

A helicopter crash on the three tanks beside the helipad would cause, at worst, the spillage of 9,200 gallons, a large part of which would probably burn before spreading away. Any other incident causing the spillage of one or all of the tanks, would bring the fuel to flow onto the flat wide road (~ 15 m wide) in front of the tanks. Beyond this is a rocky drop of medium slope that leads to the ocean some 500 m away.

The rupture of the other (*i.e.*, largest) tank and its containment basin would cause the loss of 13,500 gallons. In this case, the spilled fluid would probably flow towards the south, beside the tank, into the natural cavity formed by the waste landfill which would serve as natural containment. Another possible migration route would be towards the east into another natural cavity known as the PCL dump. There too, natural containment would occur.

In either case, it is most unlikely that any sensitive receptor would be impacted from the spills because of the fuel infiltrating into the soil and bedrock, as well as the rapidity of response measures.

The spill would be communicated by the witness of the scene to the site superintendent, or in his absence, the assistant site superintendent. The latter would then go down the chain of command and advise the appropriate persons of the immediate actions to be taken. Radio communication is used at all times on the island and key team members carry a radio with them at all times.

The personnel responsibilities are outlined in previous sections of this document. The witness of the spill would be advised to try to stop the source of the spill, while waiting for backup help to arrive; his actions would be immediate. The site engineer would coordinate the spill response activities carried out by the containment unit. Members of this unit would be mobilized to the upper site. The upper site can be reached from any other area of the site within a maximum of 25 minutes. Response to a spill at the upper site would probably be more rapid that at the lower site because, in general, there is more personnel working near or at the upper site.

Mobilization of containment equipment to the spill site can be carried out rapidly. Bucket loaders and other heavy equipment are present in close proximity and can reach the site of the spill within a matter of minutes. Sand and gravel stockpiles are also located in the vicinity, if required for berm construction. Spill response kits, sorbent material, pumps, hose and many other equipment are located in the storage warehouse a few metres away. Containment would be carried out by the construction of soil berms and the installation of sorbent booms. After containment, clean up equipment can be mobilized to the site. A list of equipment is presented in previous sections of this document.

Safety hazards associated with the spill event includes the risk of fire. This can be minimized by preventing personnel from smoking near the spill scene. Risks to personnel (from inhalation and dermal contact) can be prevented by the proper use of personnel protective equipment.

Measures and procedures to prevent such events from occurring include regular inspection of the tanks and containment system, and safety rules concerning the use of vehicles and heavy equipment on site, especially in close proximity to the storage tanks (*e.g.*, speed limits, training of heavy equipment operators, etc.).

7.3- Scenario #3: Fuel Truck

The fuel truck used to supply fuel to heavy equipment and to carry fuel from the lower site tank farm to the upper site tanks has a carrying capacity of 2,500 gallons.

Any accident involving the fuel truck could result in the loss of its entire volume of fuel. Such an accident could occur almost anywhere on site, any place the truck has access to.

Heavy equipment works at least 30 metres away from any body of water. Therefore the fuel truck should not ever get closer than 30 metres from bodies of water. Any fuel spill at that distance would not rapidly reach the receptor.

The only area where the truck will get close to a sensitive receptor is at Freshwater Lake where the road runs along the lake, a few metres away, and then its runs over the discharge stream. An accident in that area could result in a fuel spill reaching the lake and/or stream.

The spill would be communicated by the witness of the scene to the site superintendent, or in his absence, the assistant site superintendent. The latter would then go down the chain of command

and advise the appropriate persons of the immediate actions to be taken. Radio communication is used at all times on the island and key team members carry a radio with them at all times.

The personnel responsibilities are outlined in previous sections of this document. The witness of the spill would be advised to try to stop the source of the spill, while waiting for backup help to arrive; his actions would be immediate. The site engineer would coordinate the spill response activities carried out by the containment unit. Members of this unit would be mobilized to Freshwater Lake. This area, since it is located half way between the lower and upper sites, can be reached from any other area of the site within a maximum of 15 minutes.

Mobilization of containment equipment to the spill site can be carried out rapidly. Sorbent booms may be required to contain the oil slick and prevent further spreading or migration to the discharge stream; those are present at the upper site and the lower site. If the construction of an oil-water separator in the discharge stream is necessary, the following equipment and materials would be required: heavy equipment (loader or excavator), sand and gravel, piping, and tarp/geomembrane. All these equipment and materials could be mobilized within 20 to 30 minutes. If the fuel reaches the discharge stream, spill response measures may have to be implemented further down stream (*i.e.,* below the waterfall). After containment, clean up equipment can be mobilized to the site. A list of equipment is presented in previous sections of this document.

Safety hazards associated with the spill event includes the risk of fire. This can be minimized by preventing personnel from smoking near the spill scene. Risks to personnel (from inhalation and dermal contact) can be prevented by the proper use of personnel protective equipment.

Measures and procedures to prevent such events from occurring include regular safety rules concerning the use of vehicles site, especially in close proximity to sensitive areas (*e.g.,* speed limits, training of truck drivers, etc.).

8-REPORTING REQUIREMENTS

Spills will be immediately reported using the **24 Hour Spill Report Line (867) 920-8130 (NWT)**. Immediately shall mean upon discovery. Failure to report can lead to fines. A written spill report will then be prepared by the Contractor with the assistance of the Engineer and submitted to the DIAND site representative and the Spill Report Line supervisor (Arctic Alarm and Communications) (see Appendix 3). This report will include:

a- date and time of the incident;
b- location or map coordinates and direction of spill movement if not at steady-state;
c- party responsible for the spill;
d- type and estimated quantities of spilled contaminant(s);
e- specific cause of the incident;
f- status of the spill indicating if spilled materials are still moving or now at steady-state;
g- approximate surface of contaminated area;
i- factors affecting spill or recovery such as temperature, wind, etc.;
j- status on containment actions indicating whether a) naturally, b) booms, dykes or other, c) no containment has been implemented;
k- corrective action taken or proposed to clean, contain or dispose spilled material;
l- whether assistance is required and in what form;
m- whether the spill poses a hazard to persons or property (*i.e.,* fire, drinking water);
n- comments and recommendations;
o- name, position and employer of the person reporting the spill; and
p- name, position department of the person to whom the spill is reported.

Apart from reporting requirements, the Contractor, through its site superintendent, may require special assistance. These could be implemented for the following reasons:

.1 If assistance and coordination are required for spill response, Environment Canada (Nunavut Office - François Rainville) and the Environmental Protection Service of the Government of Nunavut (Earl Battalow and/or Robert Eno) can be contacted at:

Environment Canada	**(867) 979-6808**
GN Environmental Protection Service	**(867) 975-5910 or 975-5907**

.2 If medical assistance and coordination are required when injuries occurred during spill

incident/spill response and/or critical incident stress is observed after an event, the Baffin Regional Hospital (general enquiries) shall be contacted at:

Baffin Regional Hospital **(867) 979-7300**

.3 If the emergency situation requires special assistance, the NWT 24 hour Emergency line shall be used (Mr. Rispin):

NWT 24 Emergency Line **(867) 873-7554**

.4 If a spill emergency situation occurs on locations occupied by the NWS/SSR facilities, the following contact shall be used (M. Kim Kalen)

NWS/SSR Environmental Enquiries **(613) 992-9743**

APPENDIX -1-

Fuel Consumption Chart

LIQUIDS CONSOMMATION CHART

VEHICULE NAME	ESTIMATE	MOTOR TYPE	CAPACITY	FUEL TYPE	FUEL CAP. (L)	FUEL (USGAL/ H)	FUEL (L/H)	ENGINE OIL CAP. (USGAL)	ENGINE OIL CAP. (L)	TRANS. OIL CAP. (USGAL)	TRANS. OIL CAP. (L)	DIFF. OIL CAP. (USGAL)	DIFF. OIL CAP.(L)	HYDRAULIC OIL TANK CAP. (USGAL)	HYDRAULIC OIL TANK CAP.(L)	COOLANT CAP. (USGAL)	COOLANT CAP. (L)	TIME: HRS / DAY	TIME: DAYS / YEAR	TIME: HOURS / 2 YEAR	NEEDS: JET-A FUEL (L)	NEEDS: REG. FUEL (L)	NEEDS: ENGINE OIL (L)	NEEDS: TRANS. OIL (L)	NEEDS: DIFF. OIL (L)	NEEDS: HYD. OIL (L)	NEEDS: COOL (L)
ATV1		2CYL	400CC	GAZ	15.14	1.00	3.79	0.50	1.89	0.50	1.89	0.50	1.89			0.25	0.95	4.00	90.00	648.00		2,452.68	3.79	1.89	1.89		0.00
ATV2		2CYL	400CC	GAZ	15.14	1.00	3.79	0.50	1.89	0.50	1.89	0.50	1.89			0.25	0.95	4.00	90.00	648.00		2,452.68	3.79	1.89	1.89		0.00
ATV3		2CYL	400CC	GAZ	15.14	1.00	3.79	0.50	1.89	0.50	1.89	0.50	1.89			0.25	0.95	4.00	90.00	648.00		2,452.68	3.79	1.89	1.89		0.00
ATV4		2CYL	400CC	GAZ	15.14	1.00	3.79	0.50	1.89	0.50	1.89	0.50	1.89			0.25	0.95	4.00	70.00	504.00		1,907.64	3.79	1.89	1.89		0.00
ATV5		2CYL	400CC	GAZ	15.14	1.00	3.79	0.50	1.89	0.50	1.89	0.50	1.89			0.25	0.95	4.00	70.00	504.00		1,907.64	3.79	1.89	1.89		0.00
ATV6		2CYL	400CC	GAZ	15.14	1.00	3.79	0.50	1.89	0.50	1.89	0.50	1.89			0.25	0.95	4.00	70.00	504.00		1,907.64	3.79	1.89	1.89		0.00
PICK UP1	E	8CYL	6.5L	GAZ	117.34	2.00	7.57	2.00	7.57	2.50	9.46	5.00	18.93			5.20	19.68	6.00	90.00	972.00		7,358.05	22.71	9.46	18.93		0.00
OTHER1	E	1CYL	250CC	GAZ+OIL MIX	7.57	0.50	1.89									1.00	3.79	4.00	70.00	504.00		953.82					0.00
OTHER2	E	1CYL	400CC	GAZ+OIL MIX	7.57	0.50	1.89									1.00	3.79	4.00	70.00	504.00		953.82					0.00
OTHER3	E	2CYL	500CC	GAZ+OIL MIX	15.14	1.00	3.79									1.00	3.79	4.00	70.00	504.00		1,907.64					0.00
OTHER4	E	3CYL	800CC	GAZ	18.93	1.25	4.73	1.00	3.79							1.00	3.79	4.00	70.00	504.00		2,384.55	7.57				0.00
GAZGENERATOR1 (HONDA)	E	1CYL	250CC	GAZ	7.57	0.20	0.76	0.50	1.89							1.50	5.68	6.00	70.00	756.00		572.29	5.68				0.00
GAZGENERATOR2 (HONDA)	E	1CYL	250CC	GAZ	7.57	0.20	0.76	0.50	1.89							1.50	5.68	6.00	70.00	756.00		572.29	5.68				0.00
GAZGENERATOR3 (HONDA)	E	2CYL	400CC	GAZ	15.14	0.40	1.51	0.50	1.89							3.00	11.36	6.00	70.00	756.00		1,144.59	5.68				0.00
GAZGENERATOR4 (HONDA)	E	2CYL	400CC	GAZ	15.14	0.40	1.51	0.50	1.89							3.00	11.36	6.00	70.00	756.00		1,144.59	5.68				0.00
CAT1 D6R BULDOZER		6CYL TURBO	180HP@1900RP	JET-A	397.43	6.75	25.55	7.30	27.63	41.00	155.19	3.60	13.50	20.00	76.00	19.50	73.81	6.00	70.00	756.00	19,314.87		82.89	155.19	13.50	76.00	0.00
CAT2 322EL EXCAVATOR		6CYL TURBO	153HP@1950RP	JET-A	340.65	5.00	18.93	5.70	21.57	2.60	9.84	5.00	20.00	37.00	141.00	8.30	31.42	6.00	70.00	756.00	14,307.31		64.72	9.84	20.00	141.00	0.00
CAT3 D250E DUMPTRUCK		6CYL TURBO	260HP@2200RP	JET-A	359.58	7.00	26.50	7.00	26.50	16.00	60.56	24.00	93.00	53.00	200.00	17.00	64.35	6.00	70.00	756.00	20,030.24		79.49	60.56	93.00	200.00	0.00
CAT4 IT38G TOOLCARRIER		6CYL TURBO	140HP@2200RP	JET-A	208.19	5.00	18.93	5.30	20.06	7.90	29.90	13.40	51.00	14.50	55.00	12.70	48.07	6.00	70.00	756.00	14,307.31		60.18	29.90	51.00	55.00	0.00
CATLOCAL1 D7 BULDOZER	E	6CYL TURBO	230HP@2100RP	JET-A	480.70	8.50	32.17	7.30	27.63	41.00	155.19	3.60	13.50	20.00	76.00	20.00	75.70	6.00	70.00	756.00	24,322.43		82.89	155.19	13.50	76.00	0.00
CATLOCAL2 315 EXCAVATOR	E	6CYL TURBO	99HP@2100RPM	JET-A	189.25	3.50	13.25	5.30	20.06	2.00	7.57	2.00	8.00	7.50	29.00	8.50	32.17	6.00	70.00	756.00	10,015.12		60.18	7.57	8.00	29.00	0.00
CATLOCAL3 IT24F TOOLCARRIER	E	6CYL TURBO	125HP@2200RP	JET-A	105.98	3.50	13.25	5.30	20.06	9.00	34.07	13.50	51.00	18.50	70.00	11.00	41.64	6.00	70.00	756.00	10,015.12		60.18	34.07	51.00	70.00	0.00
MOBILBUILDING1		4CYL IN LINE	3.95L (30kw) 60HP@1800RPM	JET-A	556.40	2.50	9.46	2.10	7.95							4.10	15.52	8.00	70.00	1,008.00	9,538.21		31.79				15.52
MOBILBUILDING2		4CYL IN LINE	3.95L (30kw) 60HP@1800RPM	JET-A	556.40	2.50	9.46	2.10	7.95							4.10	15.52	8.00	70.00	1,008.00	9,538.21		31.79				15.52
JET-A PICK-UP 1		V8 TURBO	195HP@3400RP	JET-A	147.62	2.50	9.46	2.60	9.84	2.00	7.57	4.00	15.00			5.20	19.68	6.00	90.00	972.00	9,197.56		29.52	7.57	15.00		0.00
JET-A PICK-UP 2		V8 TURBO	195HP@3400RP	JET-A	147.62	2.50	9.46	2.60	9.84	2.00	7.57	4.00	15.00			5.20	19.68	6.00	90.00	972.00	9,197.56		29.52	7.57	15.00		0.00
JET-A PICK UP 3 (SUBERBAN)		V8 TURBO	195HP@3400RP	JET-A	147.62	2.50	9.46	2.60	9.84	2.00	7.57	4.00	15.00			5.20	19.68	6.00	70.00	756.00	7,153.66		29.52	7.57	15.00		0.00
INTERNATIONAL WATER TRUCK		6CYL IN LINE	210HP@2300RPM	JET-A	189.25	3.00	11.36	4.00	15.14	2.70	10.22	9.25	35.00			8.00	30.28	4.00	70.00	504.00	5,722.93		30.28	10.22	35.00		0.00
GM FUEL TRUCK		6CYL IN LINE	210HP@2300RPM	JET-A	189.25	3.00	11.36	4.00	15.14	2.70	10.22	9.25	35.00			8.00	30.28	4.00	70.00	504.00	5,722.93		30.28	10.22	35.00		0.00
GM BOOM TRUCK		6CYL IN LINE	210HP@2300RPM	JET-A	189.25	3.00	11.36	4.00	15.14	2.70	10.22	9.25	35.00	13.75	55.00	8.00	30.28	6.00	70.00	756.00	8,584.39		45.42	10.22	35.00	55.00	0.00
LOCAL INTERNATIONAL1	E	6CYL IN LINE	210HP@2300RPM	JET-A	189.25	3.00	11.36	4.00	15.14	2.70	10.22	9.25	35.00	13.75	55.00	8.00	30.28	2.00	70.00	252.00	2,861.46		15.14	0.00	0.00	0.00	0.00
LOCAL INTERNATIONAL2	E	6CYL IN LINE	210HP@2300RPM	JET-A	189.25	3.00	11.36	4.00	15.14	2.70	10.22	9.25	35.00	13.75	55.00	8.00	30.28	2.00	70.00	252.00	2,861.46		15.14	0.00	0.00	0.00	0.00
SHREDDER1	@	6CYL TURBO	134HW@1900RP	JET-A	397.43	6.00	30.28	7.30	27.63	41.00	155.19	3.60	13.50	20.00	76.00	19.50	73.81	10.00	10.00	180.00	5,450.41		0.00	0.00	0.00	0.00	0.00
SHREDDER2	@	6CYL TURBO	134HW@1900RP	JET-A	397.43	6.00	30.28	7.30	27.63	41.00	155.19	3.60	13.50	20.00	76.00	19.50	73.81	10.00	10.00	180.00	5,450.41		0.00	0.00	0.00	0.00	0.00
HELICOPTER		UNKNOWN	UNKNOWN	JET-A	N/A	N/A	205.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.00	90.00	486.00	99,630.10		N/A	N/A	N/A	N/A	N/A
CAMP JET-A GENERATOR1		4CYL	CAT3304	JET-A	397.43	6.50	24.60	7.30	27.63	41.00	155.19	3.60	13.50	20.00	76.00	19.50	73.81	24.00	90.00	4,320.00	106,282.80		469.72	1,241.48	108.00	608.00	295.23
CAMP JET-A GENERATOR2		4CYL	CAT3304	JET-A	397.43	0.00	0.00	7.30	27.63	41.00	155.19	3.60	13.50	20.00	76.00	19.50	73.81	24.00	90.00	4,320.00	0.00		469.72	1,241.48	108.00	608.00	295.23
																				TOTAL							115,605.40 USGAL
																				TOTAL	399,504.49	30,072.61	1,794.09	3,009.45	646.28	1,918.00	621.50	437,566.42 LITERS
																				# DRUMS OF 42 USGAL / 55GAL / 170L		177.00	11	18	4	12	4	226 DRUMS
																				# OF PALLETS OF 4 DRUMS		45.00	3	5	1	3	1	58 PALLETS

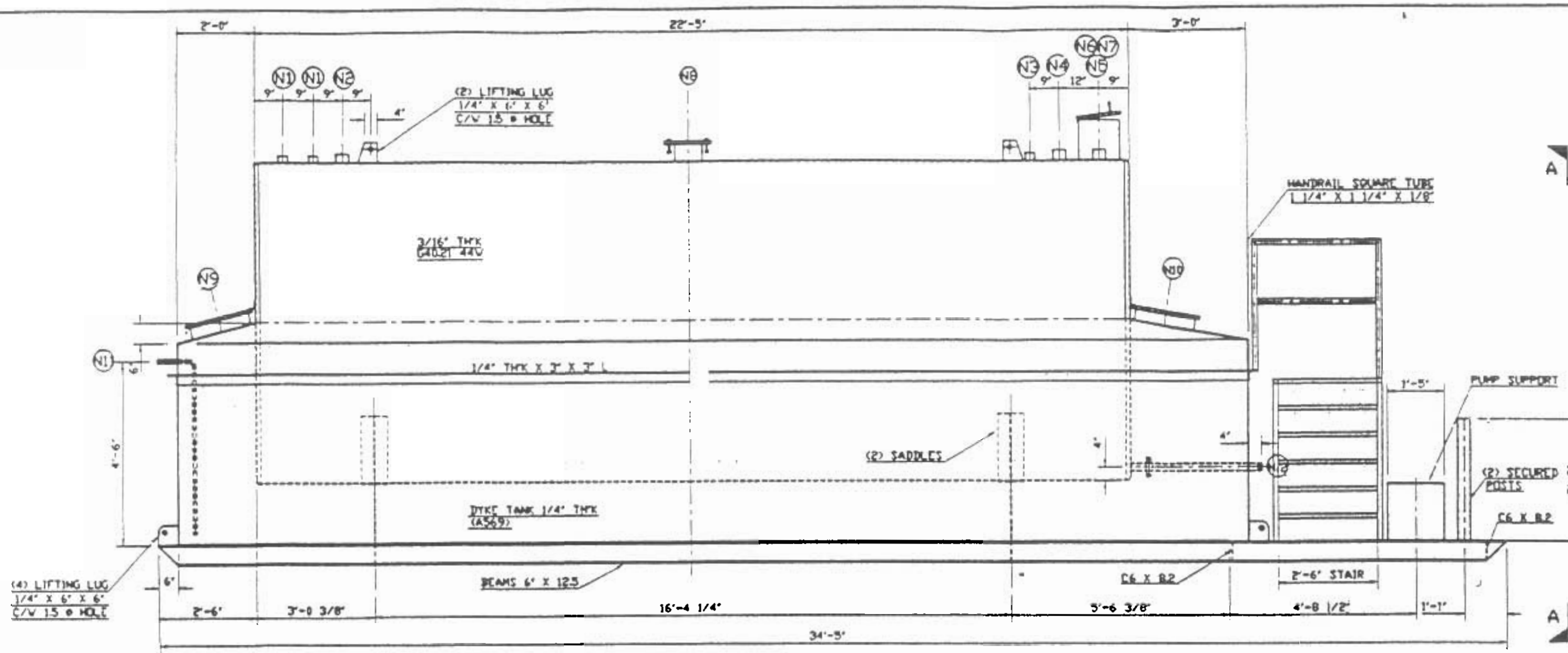
MAINTENANCE FREQUENCY (SYSTEMATIC MAINTENANCE)		
	ENGINE OIL	250h
	TRANSMISSION	500h
	HYDRAULIC OIL	500h
	COOLANT	1000h
	FUEL SYSTEM	500h
	AIR SYSTEM	1000h

@ Assume to be the same size as a D6 engine

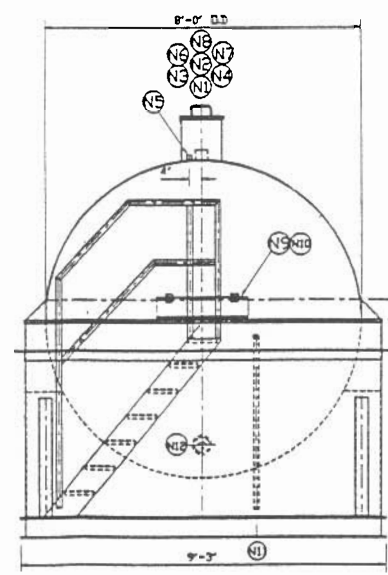
E Estimated value

APPENDIX -2-

Fuel Tank Shop Drawing



ELEVATION



SECTION "A-A"

MATERIAL SPECIFICATIONS

SHELL :	G40.21 44V	HEADS :	G40.21 44V
SUPPORTS :	DYKE A569		
REINF. PAD :	A569		
PIPE :	A53-B	INT. PIPE :	—
FLANGES :	SA 105	INT. FLANGES :	—
COUPLINGS :	SA 105	FITTINGS :	—
STUDS :	307	NUTS :	307
INT. STUDS/BOLTS :	—	INT. NUTS :	—
GASKETS :	RED RUBBER		

DESIGN DATA

DESIGN PRESS :	—	OPERATING PRESS. :	—
DESIGN TEMP. :	—	OPERATING TEMP. :	—
HYDROSTATIC TEST PRESS. :	5 PSI AIR		
SPECIFIC GRAVITY :	—		
CORROSION ALLOWANCE :	—		
THICKNESS OF BASE PLATE :	—		
THICKNESS OF ROOF :	—		
THICKNESS OF SHELL :	3/16"		
RADIOGRAPHY :	—		
IMPACT TEST :	—		
WEIGHT EMPTY :	APP. 18000 LBS FULL OF WATER		
FAB. AND DESIGN CODE :	ULC-CAN 4-S601-93		
INSPECTION BY :	ULC		
WELDING PROCEDURE NO :	—		

TABLE OF CONNECTIONS

PROJ.	QTY	ITEM	SIZE	SCH.	DESCRIPTION	TYPE OF FLG.	TYPE
—	2	N1	2"	—	SCREWED WELDING FLG	150	
—	1	N2	3"	—	SCREWED WELDING FLG NORMAL VENT	150	
—	1	N3	2"	—	SCREWED WELDING FLG	150	
—	1	N4	4"	—	SCREWED WELDING FLG	150	
—	1	N5	1"	—	SCREWED WELDING FLG DRAIN OF FILL	150	
—	1	N6	4"	—	SCREWED WELDING FLG FOR FILL	150	
—	1	N7	[illegible] 3/16		FILL BOX	FAB	
—	1	N8	8"	40	EMERGENCY VENT	FAB	
—	1	N9	18X28	3/16	INSPECTION DOOR C/V HINGE	FAB	
—	1	N10	18X28	3/16	INSPECTION DOOR C/V HINGE	FAB	
—	1	N11	1"	40	DRAIN PIPE FOR DYKE	—	
—	1	N12	2"	40	—	1500 SCRF	

NO.	DATE	REVISION

ACIER st~michel inc

8630, 9 ieme AVENUE
MONTREAL, QUEBEC
H1Z 2Z8
TEL: (514) 374-4970
FAX: (514) 374-8630

TITLE: SELF DYKINK TANK

FOR: QIKIQTAALUK CORPORATION

REFERENCE DRAWING	SCALE : NONE	P.O NO. : [illegible]
	DATE : [illegible]	SHT. : 1 OF 1
	DR. BY : EJ	DRAWING NO
	CHKD BY :	98-980
	APP. BY :	

GENERAL NOTES

VESSEL TO BE [illegible]
[illegible]
FLANGE BOLT HOLES TO STRADDLE VESSEL MAIN CENTERLINE AND
[illegible]
ALL EXTERIOR SURFACES OF THE TANK TO BE SANDBLASTED THEN TO RECEIVE
ONE COAT OF PRIMER AND ONE [illegible]
INSIDE FINISH OF THE DYKE TO BE SANDBLASTED THEN TO RECEIVE
ONE COAT OF PRIMER

GENERAL NOTES

INGÉNIEUR · ENGINEER
JAMES J. GRIBBON
18384
QUÉBEC

APPENDIX -3-

MSDS of chemicals used
at
Resolution Island Project
on-site laboratory

MSDS of chemicals used
at
Resolution Island Project by the
on-site laboratory

(To be provided upon request)

APPENDIX -4-

Spill Contingency report

Spill Contingency Report

Information of Incident
Section A

Date of Incident _____ Time _____

Location _____

Coordinates: ☐° ☐' ☐" W
☐° ☐' ☐" N

Check the Direction of Spill Movement: N☐ NW☐ W☐ SW☐ S☐ SE☐ E☐ NE☐
(State the bearing if possible)

Bearing: _____ Rate of Movement: _____

Party Responsible for Spill _____

Type of Substance that Spilled _____

Estimated Quantity of Substance _____

Specific Cause of Incident
Section B

Please state the causes of the incident above in the following space provided

Status of Incident
Section C

Approximate surface area of contamination _____

Containment Actions Taken:

- ☐ Occurred Naturally
- ☐ Booms used
- ☐ Dyke used
- ☐ No containment implemented
- ☐ Other (specify)

_____

_____

List any factors affecting the spill such as: wind, temperature, etc.

Spills should be immediately reported using the 24 Hour Spill Report Line: (867) 920-8130 (NWT)

Action Proposed to Clean, Contain or Dispose of Spilled Substance
Section D

Hazards of Spill
Section E

- ☐ Flammable
- ☐ Combustible
- ☐ Health hazard (specify)

_____

_____

- ☐ Corrosive
- ☐ Explosive
- ☐ Radioactive
- ☐ Other (specify)

_____

_____

Information if Assistance is Required
Section F

Organization

Contact Person

Contact Number Alternate Number

Hours of Operation:

Comments and Recommendations
Section G

Information on Person Making Report
Section H

( ) -

Full Name *Contact Number* *Position & Department*

Employer

Submitted to

Reporter's Signature Date

Spills should be immediately reported using the 24 Hour Spill Report Line: (867) 920-8130 (NWT)