Spill Contingency Plan

Fort Eureka, Nunavut

Version 1.0

Created November 2009

Effective till December 2014

Prepared by:

1 Canadian Air Division
A4 CE Env and HazMat
Winnipeg, MB
R3T 3Y5

09, November, 2009

Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
P.O. Box 119
Gjoa Haven, NU X0B 1J0

Attn: Phyllis Beaulieu

Re: Spill Contingency Plan for Fort Eureka, Nunavut

Dear Phyllis,

Please find enclosed the Spill Contingency Plan for Fort Eureka, NU. This spill Contingency Plan is intended to be a stand alone document and meets all requirements for a Spill Contingency plan as set out in the Government of Nunavut, *Consolidation of Spill contingency Planning and Reporting Regulations R-068-93.*

If you have any questions regarding this plan please don't hesitate to contact us

Sincerely,

R.C. Baker

Colonel

Director Construction Engineering

1 Canadian Air Division

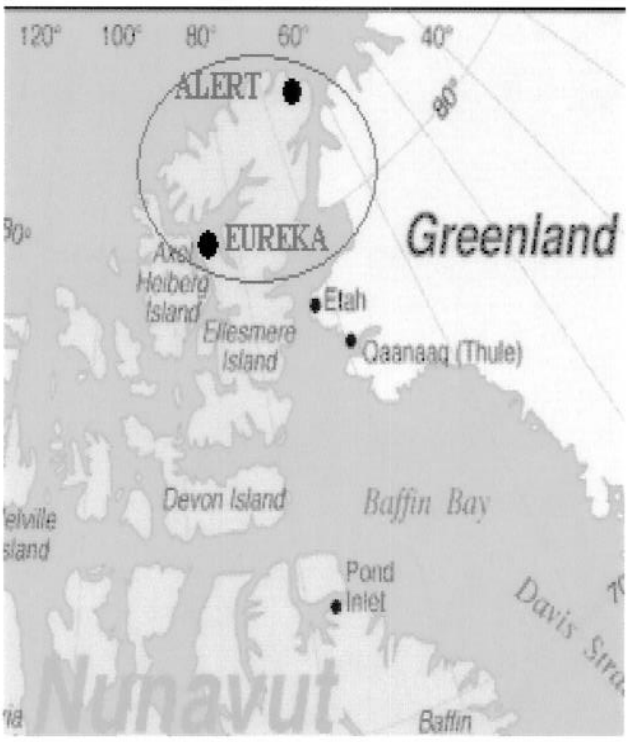
Table of Contents

1 Introduction

Fort Eureka is located in the Northern Baffin Region, Nunavut (Lat/Long) 80°00' N, 85°56' W. The adjacent drawing indicates the location of Fort Eureka in relation to CFS-Alert.

Fort Eureka was first established on Ellesmere Island in 1947 as the High Arctic Weather Station (HAWS) for the Atmospheric Environment Service (AES) of Environment Canada. In 1982, the Department of National Defense (DND) installed as series of relay towers between Fort Eureka and CFS-Alert to improve the communications for CFS-Alert.

Fort Eureka was established as the military quarters for personnel maintaining the communications equipment supporting CFS Alert and is the military quarters for training missions to the North.



Location Drawing

1.1 INFORMATION OF THE LICENSEE

Col R.C. Baker
A4 Construction Engineering
1 Canadian Air Division Headquarters
National Defence
PO Box 17000 Stn Forces
Winnipeg Manitoba R3J 3Y5

1.2 INFORMATION OF 24 HOUR CONTACT

Alert Commanding Officer or Wing Commander 8 Wing

1.3 GENERAL DESCRIPTION OF PROPERTY

The primary facilities at Fort Eureka are located at the Main Camp, located approximately 2 km from HAWS, and adjacent to the airstrip. DND infrastructure includes the Accommodations Building, a vehicle maintenance garage, aircraft refueling apron, fuel storage tanks and bladders, the sewage lagoon, and two landfills.

Potable water for the station is obtained from Environment Canada's water system, which acquires its water from Station Creek. The water collected for the Environment Canada site is pumped from Station Creek over a period of approximately one month during the Spring melt, allowing continuous flow of water

within the creek. The water is collected within a reservoir where it is retained for use the remainder of the year. Water for use at Fort Eureka is withdrawn from the reservoir and trucked to a cistern located at the military quarters building. The water is then passed through a reverse osmosis filtration system and is chlorinated prior to use for drinking or food preparation.

Fort Eureka, Nunavut

Table 1.1 – CFS Eureka Buildings with Sewer system

Building	Water	Bleeder	Sewer	Status
Fort Eureka	Cistern	No	Yes	Operational

2 Project Facility Description

2.1 DOMESTIC GREYWATER SEWAGE

The New Grey Water Outfall pipe extends approximately 75 m south, starting from the new accommodations building where it is connected to the bioreactor, and discharging into an unlined lagoon that collects the grey water. The land in the area of the accommodations building is flat. The local topography shows a moderate slope proximate to the lagoon, then a light slope, toward the fjord, located approximately 0.5 to 1 km south.

2.2 SOLID WASTE

All combustible garbage is incinerated before disposal. The ash and remaining non-combustible refuse is transported to the East Airstrip Landfill for disposal. The landfill currently in use was partly remediated in 1995, when a granular/soil mixture was placed over portions of the landfill area. Further assessments of the landfill area were conducted in 1998, 1999, and 2006 indicating that little migration of any metals or hydrocarbons from the landfill area has occurred. The landfill area was completely covered in 2008 to deter foraging of any non-combustible garbage.

2.3 FUEL STORAGE

CFS Eureka has four 30,000L JP8 tanks located at the North Side POL, across the airfield from the accommodation building. The four aboveground storage tanks are horizontal in configuration and are double-walled. Fuel is brought in to Eureka by a CC130 Hercules aircraft, and then transferred to the bulk fuel station.

2.4 CHEMICALS AND HOUSEHOLD DETERGENTS

Wastewater from CFS Alert is typically domestic in nature. Household cleaners and detergents are used for sanitation.

2.5 MATERIAL SAFETY DATA SHEETS (MSDS)

MSDS for all hazardous materials are maintained at the hazmat lockers. As required, the MSDS are available for consultation and are reviewed on an annual basis to ensure that they are updated prior to their three year expiration date. A copy of the MSDS for JP8 Fuel is included in Appendix D.

3 Type and Amount of Contaminants Stored at Site

3.1 DOMESTIC SEWAGE

Domestic sewage is not stored on site rather it flows by gravity to the discharge point. There are no lift stations where sewage may accumulate. The only sewage generated at Eureka by DND is from the accommodation building (The Fort) during the "summer" months. The domestic sewage is retained in a recently modified two cell retention pond.

3.2 SOLID WASTE

All combustible garbage is incinerated before disposal at the landfill.

3.3 FUEL

CFS Eureka has four 30,000L storage tanks containing JP8 fuel located in the North Side POL.

3.4 CHEMICALS AND HOUSEHOLD DETERGENTS

All products are purchased in Canada and, where required, registered in accordance with the applicable legislation.

3.5 RADIOACTIVE SOURCES

No known radiation sources are on site, unless as part of telecommunications systems. Any radiation sources removed to the support base for disposal if / when required.

4 Spill Prevention Measures

4.1 DOMESTIC SEWAGE

Domestic sewer lines at the Fort are only used in the summer season, and the system is checked on initial start-up each year to ensure that no leaks are present.

4.2 SOLID WASTE

All combustible garbage is incinerated in proper facilities to ensure safe disposal.

4.3 FUEL STORAGE

The four 30,000L JP8 tanks are double walled tanks to ensure that no leaking occurs from the tanks. The tanks are inspected regularly when in use to ensure that any couplings are tight and there are no leaks. When transferring fuels only trained personnel operate and supervise the transferring process.

4.4 CHEMICALS AND HOUSEHOLD DETERGENTS

Are stored within proper fireproof and spill proof storage units. Care is taken when using or transferring materials. Only containers that are in good condition and free of defects shall be used.

5 Spills

5.1 IN THE CASE OF A SPILL

The initial Response and containment of a spill is the responsibility of the unit/persons experiencing the incident. The Senior Officer at Fort Eureka, at the time of the incident, is the proper authority for ensuring that the clean-up and handling of any hazardous materials is carried out in a safe and responsible manner. The Senior Officer will assign one of his personnel to oversee the handling of the incident and its associated clean up. In addition, units are to appoint a Spill Response Coordinator whose role will be to:

1. Direct the containment of the spill;
2. Immediately contact the Senior Officer;
3. Secure area until the Senior Officer or his representative arrives;
4. Assist in containing and cleaning-up of the spilled materials;
5. Insure that the Senior Officer's representative has all of the information required to complete a Hazardous Material Incident Report Form upon resolution of the incident.

5.1.1 Initial Response and Containment

As indicated above, the Initial Emergency Response in Eureka is the responsibility of the Senior Officer or his representative, who will direct the containment and clean-up of the spill.

All spills of hazardous materials, regardless of size and including deliberate discharges (such as releases of fuel from aircraft in emergency or operational situations) must be reported. The Hazardous Materials Incident Report must be completed and submitted, within two working days, to the 8 Wing Hazmat Coordinator who will forward to WEnvO and WLogO.

The main objective of containment shall be to limit the area affected by the spill and to prevent its spread to adjoining waterways or surface drainage systems.

1. Containment dikes or berms, constructed of impermeable or absorbing materials, will be the main method of containing spills on land.
2. Trenches or storage pits will be used for temporary storage of spilled liquids and as intercepting channels for large spills. This can be used when the spill zone has a significant slope.
3. Small spills will be cleaned with absorbent material in granular or blanket form to immobilize and absorb the spilled fluid.
4. Spills in winter will be contained when possible with berms of snow. When the entire spill is absorbed with snow the snow will be deposited within a containment area.
5. Spills on water will be contained with a containment boom if the spilled material float.

5.1.2 Initial Incident Reporting

In the event of a hazardous Material spill or incident, the following are to be advised

Senior Officer at Eureka

Senior Officer at Alert

8 Wing Hazmat Coordinator CSN 827-7235

8 Wing Environmental Officer CSN 827-3930

See Hazardous Materials Incident Report Form (Appendix B)

Major fuel spills are to be reported by message using a Significant Incident Report. All hazmat spills that require a Significant Incident Report shall have an Air Command Hazardous Material Incident Report completed and forwarded to Command within 14 days. (refer to http://admfincs.mil.ca/admfincs/subjects/daod/2008/3_e.asp for more information on SIRs)

The Wing Hazmat Coordinator will report all spills of hazardous wastes or other contaminants to the GNWT/GN Spill Line which exceed the following guidelines:

Classification	Hazard	Reportable quantity
1	Explosives	All
2.1	Compressed Gas (flammable)	100 L
2.2	Compressed Gas	100 L
2.3	Compressed Gas (toxic)	All
2.4	Compressed Gas (corrosive)	All
3	Flammable Liquids	50 L
4	Flammable Solids	1 kg
5.1 PG I & II	Oxidizer	1 kg or 1 L
PG III	Oxidizer	50 kg or 50 L
5.2	Organic Peroxide	1 kg or 1 L
6.1 PG I	Acute Toxic	1 kg or 1 L
PG II & III	Acute Toxic	5 kg or 5 L
6.2	Infectious	All
7	Radioactive	Any discharge or radiation level exceeding 10 mSv/h at the package surface and 200 uSv/h at 1 m from the package surface
8	Corrosive	5 kg or 5 L
9.1	Miscellaneous (except PCB	50 kg
9.1	PCB Mixtures	500 g
9.2	Aquatic Toxic	1 kg or 1 L
9.3	Wastes (chronic toxic)	5 kg or 5 L

5.1.3 Decontamination Action

1. Ensure the spill has been stopped and contained
2. Remove all contaminates to designated area
3. If the spill happens in the winter, mark the extent of the contamination to provide a guide for the inspector in the summer months
4. During break up season a site inspector will take soil samples and submit for appropriate analysis, to determine course of remediation action, if any.

5.1.4 Site Inspection

A site inspection by qualified site inspector will be completed during the summer months following a spill. The inspector will take soil samples and submit them for appropriate analysis where necessary. The site inspector, in conjunction with the WEnvO, will come up with a remediation plan on how to best remediate any contamination.

5.1.5 Reporting Action

Reporting of a spill requires the following forms to be filled out:

Hazardous Materials Incident Report Form (Appendix B)

Should remediation of the spill site be required, the person in charge of the remediation project will be responsible for completing a daily progress report.

5.2 ANNUAL SPILL RESPONSE TRAINING

Due to the remote location, designated employees deployed to Eureka will be trained in the following in order to be able to contain and assist in the clean-up of a spill:

1. Spill awareness & prevention
2. Methods of detection
3. Types of spills & seasonal conditions
4. Report procedures & Initial responses
5. Spill response kit
6. Clean-up & site remediation
7. Occupational health & safety, protective equipment & selection
8. Safe operation of Machinery & tools
9. Construction of a containment berm using soil or snow & plastic liner

5.3 SPILL KITS

There are three spill kits located at Eureka for use in case of a spill. The Spill kits are located in the following locations:

- the POL shed by the runway
- the mechanical room of the main building
- the EME garage

Spill kits are to be kept and maintained at the specified locations at all times.

Kit should contain at a minimum;

360 litre polyethylene over pack drum
Oil sorbent booms
Oil sorbent sheets
Drain cover
Caution tape
Plugging compound
Nitril gloves
Safety goggles
Tyvek coveralls
Instruction Booklet
Disposal Bags
Shovels
Report Forms

Additional supplies for the Spill Kits are located in the warehouse.

5.4 HAZARDOUS MATERIALS INCIDENT REPORT FORM

See Appendix B

5.5 EMERGENCY CONTACTS

INAC - Water Resources Division (867) 669-2654

Government Nunavut Department of Environment (867) 975-7735

Environment Canada (780) 951-8600

Kitikmeot Inuit Association (KIA) (867) 983-2458

8 Wing Hazmat Coordinator CSN 827-7235

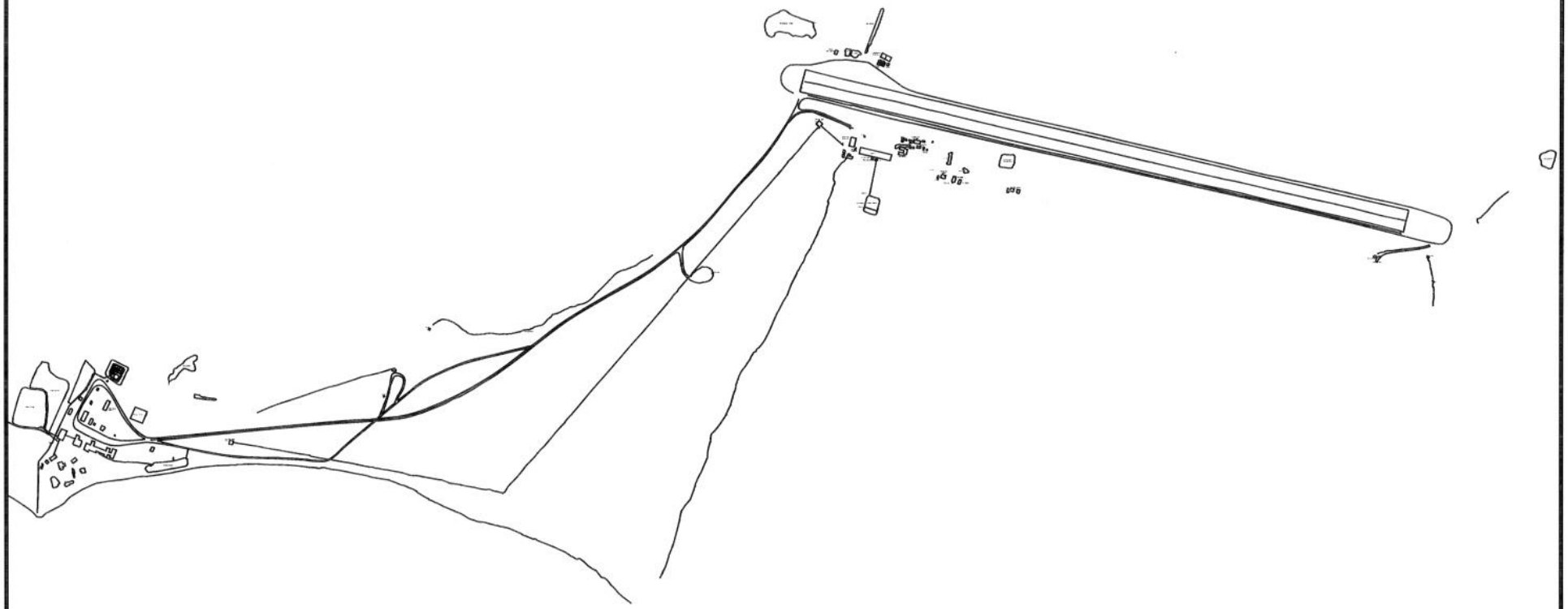
8 Wing Environmental Officer CSN 827-3930

For more information see the 1 Cdn Air Div Uniform Spill Protocol @ http://winnipeg.mil.ca/a4env/subjects/spills/Uniform%20Spill%20Reporting%20Protocol_Revised_Jan_07.pdf

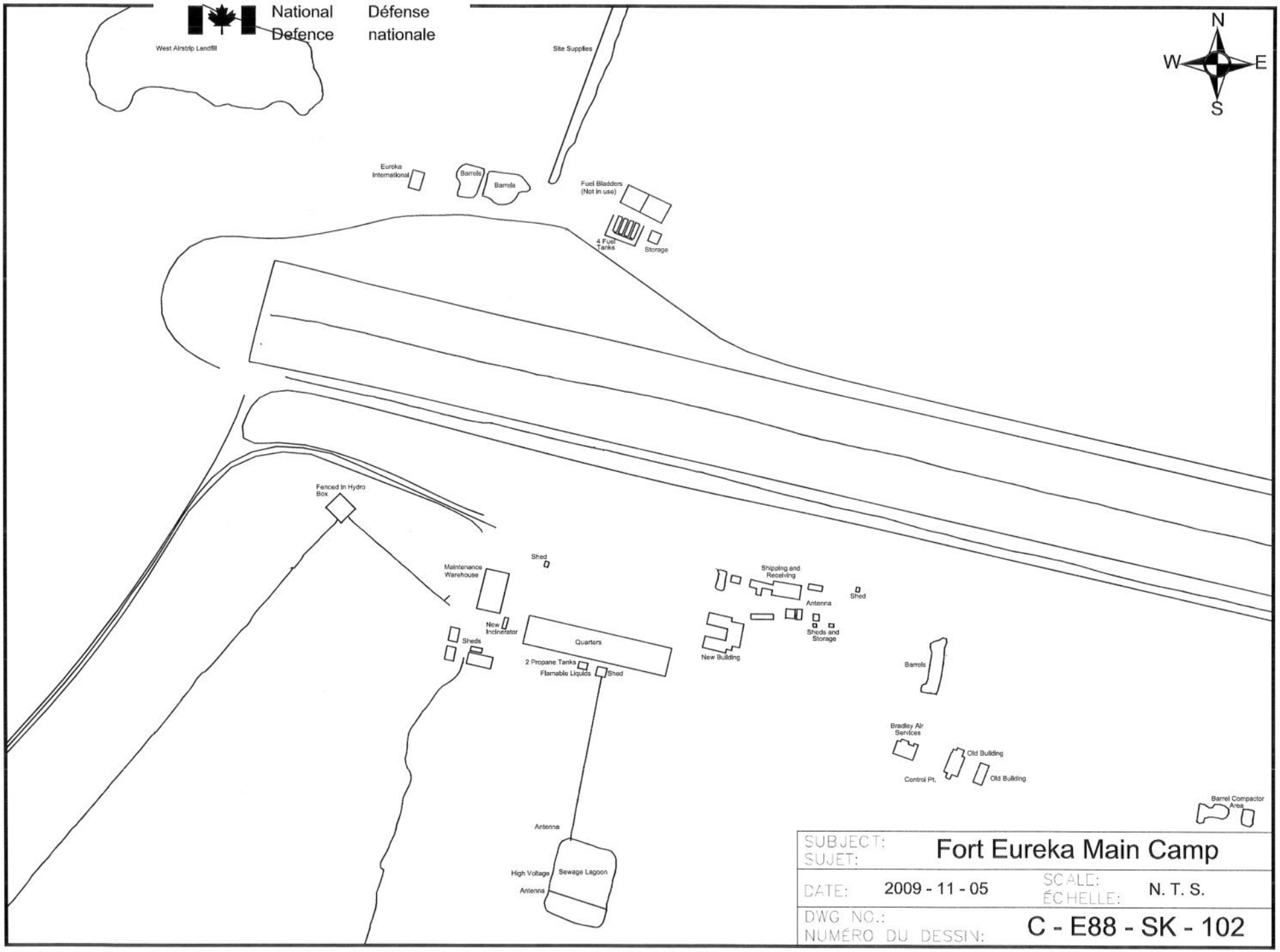
Appendix A: Site Drawings

National Défense
Defence nationale

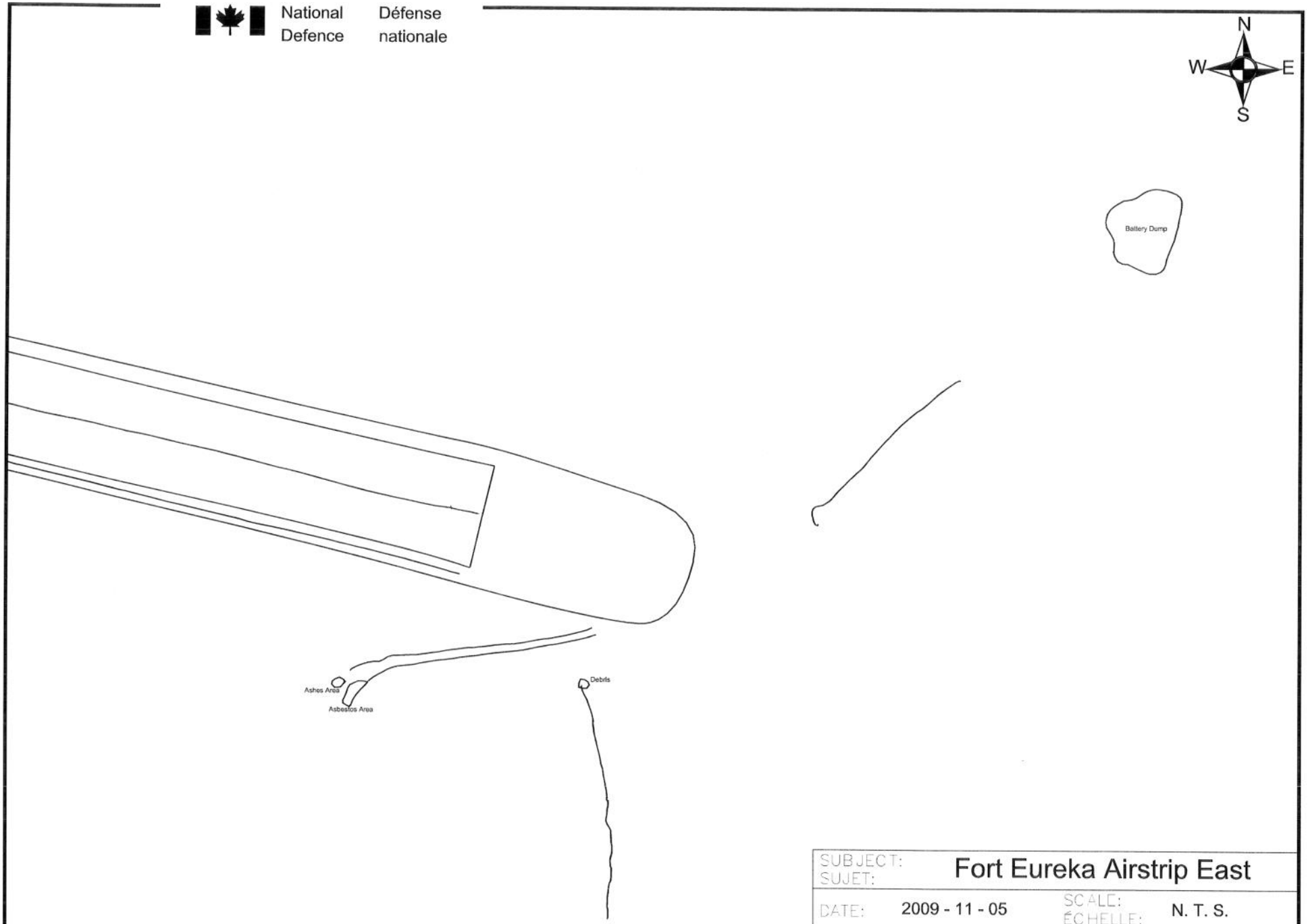
N
W E
S



SUBJECT: SUJET:	SITE PLAN
DATE: 2009 - 11 - 05	SCALE: ÉCHELLE: N. T. S.
DWG NO.: NUMÉRO DU DESSIN:	C - E88 - SK - 101


National Defence
Défense nationale
West Airstrip Landfill
Site Supplies
N
W
E
S
Eureka International
Barrels
Barrels
Fuel Bladders (Not in use)
4 Fuel Tanks
Storage
Fenced In Hydro Box
Shed
Maintenance Warehouse
New Incinerator
Sheds
Quarters
2 Propane Tanks
Flamable Liquids
Shed
Shipping and Receiving
Antenna
Shed
Sheds and Storage
New Building
Barrels
Bradley Air Services
Old Building
Control Pt.
Old Building
Barrel Compactor Area
Antenna
High Voltage Antenna
Sewage Lagoon
SUBJECT: SUJET: Fort Eureka Main Camp
DATE: 2009 - 11 - 05
SCALE: ÉCHELLE: N. T. S.
DWG NO.: NUMÉRO DU DESSIN: C - E88 - SK - 102

National Defence / Défense nationale



SUBJECT: SUJET:	Fort Eureka Airstrip East
DATE: 2009 - 11 - 05	SCALE: ÉCHELLE: N. T. S.
DWG NO.: NUMÉRO DU DESSIN:	C - E88 - SK - 103

Appendix B: Hazardous Materials Incident Report Form

Ref: 1 CAD HQ Uniform Spill Reporting Protocol 1262-1 (A4 Env 3) 6 July 98

1. Spill reported by:	**Name & Initials:**	**Phone #:**	**Unit:**
2. Spill Occurrence - Date:		**Time:**	
3. Source of Spill:		**Location of Spill -**	
4. a. Hazardous Material Spilled:		**b. Quantity Spilled (Litres):**	
c. Quantity Recovered (Litres):			
5. **Aircraft Fuel Jettisons** **a. Tail # and Call Sign:**			
b. Type of fuel		c. Quantity jettisoned (lbs):	
d. Altitude of jettisoning (m):		e. Ground temperature during jettisoning (^{o}C):	
f. Duration of fuel jettison (min):		g. Aircraft velocity during jettisoning (Kt/hr):	
h. average wind speed between ground level and jettisoning altitude (kt/hr):		i. Wind orientation (relative to aircraft) during jettisoning (parallel/not parallel):	
6. Cause of Spill (be brief):			
7. Effect(s) of Spill (be brief):			
8. Distance (in metres) from point of release to nearest:			
a. Water Well:		**c. Catch Basin or Drain:**	
b. Property Boundary:		**d. Surface water course (ie creek, Bay, etc):**	
9. Details of action, taken or proposed, to mitigate effects of spill:			
10. Off -Base agencies that responded to spill:			

NOTE: FORWARD THIS REPORT TO WENVO (FAX 3368) WITHIN 24 HOURS OF SPILL

For use by W Env Staff Only

11. Off-Base agencies informed of spill - Env Can/MOEE (time/date):
MOE: 1 (800) 268-6060 When required: Env Can N.W.T. Phone: (867) 920-8130 Fax: (867) 873-6924
Env Can Ont: (416) 518-3221 Env Can Qc Phone: (514) 283-2333

12. **ACTION**	**FAX**	**HALOCARBON**	**POL/OTHER**
NDHQ/CFFM	182-846-1753	X	
NDHQ/DGAEPM	182-840-5236	X	
1 CAD HQ/AOC	182-257-2576	X	X
1 CAD HQ//A4 AE//A4 Env//	182-257-2566	X	X
INFO			
NDHQ//DGE//	182-842-9422	X	X
WCOMD	3944	X	X
W LOG O	3448	X	X
WCEO	2788	X	X
UNIT/SQN CO		X	X

FROM: 8 Wg Env Office Phone (613) 965-3930
FAX (613) 965-3368

Sent by: (Name)
(Time/Date)

Appendix C: Methods of Spill Containment

Methods of Spill Containment

The main objective of containment is to limit the area affected by the spill and to prevent its spread to adjoining waterways or surface drainage systems.

1. **Containment dikes or berms** - constructed of impermeable or absorbing materials, are the main method of containing spills on land.
2. **Trenches and storage pits** - used for temporary storage of spilled liquids and as intercepting channels for large spills. Can be used when the spill zone has a significant slope.
3. **Spills on pavement** - tend to spread very quickly and flow towards drainage systems. In most cases, it is important to prevent this from happening, or at least minimizing the amount of the spill that enters surface drains and catch-basins.
4. **Small spills** - sorbent material in granular or blanket form can be used to immobilize the spilled fluid. Sorbent pillow, or "socks", can be used to seal manholes.
5. **Spills in winter** - frozen ground is much less permeable to fluids, so spills will flow differently in winter than in summer
    - snow will tend to absorb most liquids
    - the flow of most liquids will be inhibited by cold temperatures, but de-icing fluids and most jet fuels will resist freezing
    - spills on or in ice-covered streams and ponds require special techniques depending on whether the spilled material sinks, floats or dissolves
6. **Spills on water** - spills that reach watercourses will spread very quickly, so speed of action is essential for containment. Only floating substances are amendable to containment, those that sink or dissolve are not likely to be controlled once they reach a water course.
7. **Containment booms** - a barrier to contain or deflect the spill, and floatation or support to maintain the position in the water. To keep the boom effective with a current, position the boom in a diversionary manner deflecting the spill to a recovery location. For fast-moving streams, the boom must be angled quite sharply to prevent losses under the boom.
8. **Dams** - a system that is useful for small streams is to dam the stream with earth.

Appendix D: MSDS

Material Safety Data Sheet

SECTION 1 PRODUCT IDENTIFICATION

JP-8

Product Use: Fuel
Product Number(s): CPS243791
Synonyms: AVTUR

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Kerosene	8008-20-6	> 99 %weight
Diethylene glycol monomethyl ether	111-77-3	< 1 %weight

SECTION 3 HAZARDS IDENTIFICATION

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EMERGENCY OVERVIEW

Clear to light yellow liquid with petroleum odor.

- COMBUSTIBLE LIQUID AND VAPOR
- HARMFUL OR FATAL IF SWALLOWED - CAN ENTER LUNGS AND CAUSE DAMAGE
- MAY CAUSE RESPIRATORY TRACT IRRITATION IF INHALED
- CAUSES SKIN IRRITATION
- TOXIC TO AQUATIC ORGANISMS

****

IMMEDIATE HEALTH EFFECTS

Eye: Not expected to cause prolonged or significant eye irritation.

Skin: Contact with the skin causes irritation. Symptoms may include pain, itching, discoloration, swelling, and blistering. Contact with the skin is not expected to cause an allergic skin response. Not expected to be harmful to internal organs if absorbed through the skin.

Ingestion: Because of its low viscosity, this material can directly enter the lungs, if swallowed, or if subsequently vomited. Once in the lungs it is very difficult to remove and can cause severe injury or death. May be irritating to mouth, throat, and stomach. Symptoms may include nausea, vomiting, and diarrhea.

Inhalation: Breathing this material at concentrations above the recommended exposure limits may cause central nervous system effects. Central nervous system effects may include headache, dizziness, nausea, vomiting, weakness, loss of coordination, blurred vision, drowsiness, confusion, or disorientation. At extreme exposures, central nervous system effects may include respiratory depression, tremors or convulsions, loss of consciousness, coma or death. Mists of this material may cause respiratory irritation. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required because this material is not expected to cause eye irritation. As a precaution, remove contact lenses, if worn, and flush eyes with water.
Skin: Wash skin with water immediately and remove contaminated clothing and shoes. Get medical attention if any symptoms develop. To remove the material from skin, use soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.
Ingestion: If swallowed, do not induce vomiting. Give the person a glass of water or milk to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.
Inhalation: Move the exposed person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if breathing difficulties continue.
Note to Physicians: Ingestion of this product or subsequent vomiting may result in aspiration of light hydrocarbon liquid, which may cause pneumonitis.

SECTION 5 FIRE FIGHTING MEASURES

See Section 7 for proper handling and storage.

FIRE CLASSIFICATION:
OSHA Classification (29 CFR 1910.1200): Combustible liquid.

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

FLAMMABLE PROPERTIES:
Flashpoint: (Tagliabue Closed Cup) 100 ºF (38 C) (Min)
Auto ignition: 410ºF (210ºC)
Flammability (Explosive) Limits (% by volume in air): Lower: 0.7 Upper: 5

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:
Fire Fighting Instructions: For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.
Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in the vicinity of the spill or released vapor. If this material is released into the work area, evacuate the area immediately. Monitor area with combustible gas indicator.
Spill Management: Stop the source of the release if you can do it without risk. Contain release to prevent further contamination of soil, surface water or groundwater. Clean up spill as soon as possible, observing precautions in Exposure Controls/Personal Protection. Use appropriate techniques such as applying non-combustible absorbent materials or pumping. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil. Place contaminated materials in disposable containers and dispose of in a manner consistent with applicable regulations.
Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Liquid evaporates and forms vapor (fumes) which can catch fire and burn with

explosive force. Invisible vapor spreads easily and can be set on fire by many sources such as pilot lights, welding equipment, and electrical motors and switches. Fire hazard is greater as liquid temperature rises above 85F. Do not get in eyes, on skin, or on clothing. Do not breathe vapor or fumes. Do not breathe mist. Do not taste or swallow. Wash thoroughly after handling.

Do not use as a portable heater or appliance fuel. Toxic fumes may accumulate and cause death.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.
Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating an accumulation of electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.
General Storage Information: DO NOT USE OR STORE near heat, sparks or open flames. USE AND STORE ONLY IN WELL VENTILATED AREA. Keep container closed when not in use.
Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

GENERAL CONSIDERATIONS:
Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:
Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below the recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT
Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.
Skin Protection: Wear protective clothing to prevent skin contact. Selection of protective clothing may include gloves, apron, boots, and complete facial protection depending on operations conducted. Suggested materials for protective gloves include: 4H (PE/EVAL), Nitrile Rubber, Polyvinyl Alcohol (PVA) (Note: Avoid contact with water. PVA deteriorates in water.), Viton
Respiratory Protection: Determine if airborne concentrations are below the recommended exposure limits. If not, wear a NIOSH approved respirator that provides adequate protection from measured concentrations of this material, such as: Air-Purifying Respirator for Organic Vapors
Use a positive pressure, air-supplying respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Limit	TWA	STEL	Ceiling	Notation
Kerosene	CHEVRON	350 mg/m3	1000 mg/m3		

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor: Clear to light yellow liquid with petroleum odor.
pH: NA
Vapor Pressure: 1 kPa (0.14 psi) @ 100 ºF
Vapor Density (Air = 1): 5.7
Boiling Point: 160 - 300 ºC (320 - 572 F)
Solubility: Low PPM range in water.
Freezing Point: -47 ºC (-53 F) (Max)
Density: 0.755 - 0.84 g/ml @ 15 ºC
Viscosity: 8 cSt @ -20 ºC (Max)

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.
Incompatibility With Other Materials: May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.
Hazardous Decomposition Products: None known (None expected)
Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

IMMEDIATE HEALTH EFFECTS
Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.
Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.
Skin Sensitization: The skin sensitization hazard is based on evaluation of data for similar materials or product components.
Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.
Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY
This material is expected to be toxic to aquatic organisms.

ENVIRONMENTAL FATE
Ready Biodegradability:

This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. This material, if it must be discarded, may meet the criteria of a hazardous waste as defined by US EPA under RCRA (40 CFR 261) or other State and local regulations. Measurement of certain physical properties and analysis for regulated components may be necessary to make a correct determination. If this material is classified as a hazardous waste, federal law requires disposal at a licensed hazardous waste disposal facility.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Name: FUEL, AVIATION, TURBINE ENGINE
DOT Hazard Class: 3 (Flammable Liquid)
DOT Identification Number: UN1863
DOT Packing Group: III

SECTION 15 REGULATORY INFORMATION

SARA 311/312 CATEGORIES:

1.	Immediate (Acute) Health Effects:	YES
2.	Delayed (Chronic) Health Effects:	NO
3.	Fire Hazard:	YES
4.	Sudden Release of Pressure Hazard:	NO
5.	Reactivity Hazard:	NO

REGULATORY LISTS SEARCHED:

4A=IARC Group 1	12=TSCA Section 8(a) PAIR	21=TSCA Section 5(a)
4B=IARC Group 2A	13=TSCA Section 8(d)	25=CAA Section 112 HAPs
4C=IARC Group 2B	15=SARA Section 313	26=CWA Section 311
05=NTP Carcinogen	16=CA Proposition 65	28=CWA Section 307
06=OSHA Carcinogen	17=MA RTK	30=RCRA Waste P-List
09=TSCA 12(b)	18=NJ RTK	31=RCRA Waste U-List
10=TSCA Section 4	19=DOT Marine Pollutant	32=RCRA Appendix VIII
11=TSCA Section 8(a) CAIR	20=PA RTK	

The following components of this material are found on the regulatory lists indicated.

Kerosene	17, 18, 20
Diethylene glycol monomethyl ether	17, 20, 25

CHEMICAL INVENTORIES:
UNITED STATES: All of the components of this material are on the Toxic Substances Control Act (TSCA) Chemical Inventory.
CANADA: All the components of this material are on the Canadian Domestic Substances List (DSL).
WHMIS CLASSIFICATION:
Class B, Division 3: Combustible Liquids
Class D, Division 2, Subdivision B: Toxic Material -
Skin or Eye Irritation

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 2 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

REVISION STATEMENT: REVISION STATEMENT: This document has been prepared using a new MSDS format and all 16 sections have been revised. Please read the entire document.

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV	-	Threshold Limit Value	TWA	-	Time Weighted Average
STEL	-	Short-term Exposure Limit	PEL	-	Permissible Exposure Limit
			CAS	-	Chemical Abstract Service Number
NDA	-	No Data Available	NA	-	Not Applicable
<=	-	Less Than or Equal To	>=	-	Greater Than or Equal To

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI MSDS Standard (Z400.1).

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.