



# FUEL MANAGEMENT PLAN

## ANGILAK PROPERTY

### KIVALLIQ ENERGY CORPORATION

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Effective Date: March 1, 2018

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## 1. Introduction

This Fuel Management Plan (FMP) shall be in effect from March 1, 2018 and has been specifically prepared for the Angilak Property. The Angilak Property is located 225 kilometres south-southwest of Baker Lake and 350 kilometres west of Rankin Inlet in the Kivalliq Region of Nunavut.

The purpose of this Fuel Management Plan is to ensure that the storage, transportation and handling of fuel and chemical materials is done in a manner that is environmentally sound and safe to personnel and contractors. A copy of this plan will be kept in the office at site and at the head office in Vancouver. Copies of this plan may be obtained from Kivalliq Energy Corporation.

This Fuel Management Plan should be used in conjunction with other property plans and best management practices. Other plans at the Angilak Property include:

- Abandonment and Restoration Plan
- Emergency Response Plan
- Environmental and Wildlife Management Plan
- Field Safety Manual
- Spill Contingency Plan
- Waste Management Plan
- Radiation Hazard Control Plan

### 1.1. Corporate Details

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### 1.2. Project Description

The Angilak Property consists of 91 active mineral claims and Inuit Owned Land Parcel RI-30 (IOL), comprising a total area of 89,852 hectares in the Kivalliq region of southern Nunavut Territory. The Property is located 350 kilometres west of Rankin Inlet and 225 kilometres southwest of Baker Lake. The property dimensions measure 55 kilometres east-west by 35 kilometres north-south.

All mineral claims and the IOL are contiguous and extend north, south, east and west between 6925000m N and 6965000m N and 479300m E to 533000m E, NAD83, Zone 14, NTS Map sheets 65 J/06, 65 J/07, 65 J/09, 65 J/10, 65 J/11 and 65 J/15 (latitudes 62° 27' North and 62°48' North and longitudes 98° 21' West and 99°24' West).

The work proposed for the 2018 exploration program consists of low-impact activities including: prospecting, geological mapping, rock and soil/till sampling.

## 1.1 Applicable Legislation and Guidelines

Acts, Regulations, and Legislation that applies to the storage, handling and transport of fuel include but are not limited to:

### 1.1.1 Federal

- National Fire Code of Canada (Federal)
- Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations
- Federal Aboveground Storage Tank Technical Guidelines
- CCME Environmental Codes of Practice for Underground and Aboveground Storage Tank Systems
- Transport of Dangerous Goods Act
- The Workplace Hazardous Materials Information System (WHMIS)
- Workers' compensation Board
- Canadian Environmental Protection Act
- Fisheries Act
- Environmental Protection Act
- Guidelines for Spill Contingency Planning, INAC
- Draft Fuel Storage and Handling Guidelines, April 2009, Indian and Northern Affairs Canada - Nunavut

### 1.1.2 Territorial

- Fire Prevention Act
- Nunavut Waters Act
- Nunavut Surface Rights Tribunal Act
- Draft Recommended Best Practices for the Storage and Handling of Petroleum and Allied Petroleum Products on Federal Crown Lands in Nunavut
- Nunavut "Guideline for the General Management of Hazardous Waste"
- The Mine, Health and Safety Act and Regulations (Nunavut)
- The NWT and Nunavut Safety Act, the Occupational Health and Safety Regulations

## 2. Training

Proper use and monitoring is paramount to safe fuel storage and handling. Personnel that will be tasked with handling and inspecting will be required to receive proper and adequate training. This training will include, but not be limited to the following areas:

Operations/Maintenance

Spill Response

WHMIS

### 3. Fuel Inventory

Diesel, aviation fuel, propane and gasoline are stored at the Angilak Property. These fuels must be stored in a manner that minimizes risks to the environment, personnel/contractors and camp, while minimizing and preventing the potential impact of infrastructure developments. Fuel will be transported by air and stored on site in drums.

Kivalliq Energy is permitted to store up to 3000 drums of fuel at the Nutaaq Camp fuel cache. The main cache site is located approximately 200 metres northwest of the Nutaaq Camp on Crown Lands at 527800mE 6938100mN NAD 83 Z14 (62° 34' 22" N Lat. And 98° 27' 32" W Long.). The site offers an ideal smooth, sand covered, flat surface with no hazardous rocks or vegetation to perforate the berm membrane. All fuel is stored in secondary containment berms equipped with Spilfyter RailMat 3 ply hydrocarbon absorbent fabric and Rain Drain hydrocarbon filters for water drainage. All drums, secondary containment berms and fuel caches are located a minimum 31 meters from any water body and will be inspected regularly. All storage, fueling and staging areas have easily visible and readily available spill kits. Spill trays are located under all the fuel drums behind the tents and at drill sites.

### 4. Storage and Secondary Containment

To support operations at Kivalliq's Nutaaq Camp, fuel caches are required. These fuel caches will be established and operated in accordance with this Fuel Management Plan and Kivalliq Energy's Spill Contingency Plan.

- All fuel drums will be stored in secondary containment berms.
- All secondary containment berms will be capable of holding 110 percent of the volume of the largest fuel reservoir that is housed within the secondary containment.
- All secondary containment will be of sufficient height and depth to hold any potential spill or failure.
- Secondary containment berms will be made of material (Arctic Grade) that is sufficiently durable to withstand Nunavut's climate and the natural terrain.
- Secondary containment berms will be equipped with hydrocarbon filtration systems (rain drains) to safely remove water that is collected inside the berms.
- Secondary containment berms will be inspected daily during operations.
- Within the secondary containment berms fuel drums will be stored in rows on their sides with bungs facing at the 3:00 and 9:00 position.
- Propane cylinders will be stored standing up and away from any potential sources of ignition.

- All drums, tanks, valves, regulators and hoses will be regularly inspected for cracks or leaks.
- Secondary containment structures will be cleared of snow and/or water on a regular basis.
- Should any accumulated melt or storm water become contaminated, it will be contained, tested and if needed, be treated prior to requesting approval to discharge/release.
- Drummed fuel used for heating tents will be placed in secondary containment.
- All fuel storage sites will be located a **minimum** of 31 metres from the normal high-water mark of any water body and will be inspected regularly.
- Spill Kits will be placed and will be easily identifiable with clear signage at each fuel storage site.
- “NO SMOKING” signs will be erected at each fuel storage area.
- Smoking, open flame and any potential sources of ignition are prohibited within 31 metres of any fuel storage site.
- Empty fuel drums will be removed from site regularly.

Chemicals materials that may be located on the Angilak Property include small amounts of hydrochloric acid, cleaners, batteries, electronics, fluorescent light bulbs/tubes, motor oil and hydraulic oil. Materials will be stored in their original containers.

A small supply of motor oil and hydraulic oil will be located in the utility tent at the Nutaaq Camp. They will be kept in a drip tray with a spill kit nearby. Hydrochloric acid is used for core logging in very small amounts (<0.5 litre) and will be kept in a sealed container in the core shack. Cleaners (solvents) will be kept in a designated area on drip trays and in their original containers. Cleaners, batteries and fluorescent light bulbs/tubes will be kept in their original containers.

Please refer to the “Spill Contingency Plan” for MSDS sheets that accompany these materials and the “Waste Management Plan” for additional information.

## 5. Handling, Transfer and Transportation

Fuel will be transported to the property via fixed-wing aircraft in accordance with the regulations outlined in the Transportation of Dangerous Goods Act and Transport Canada Aviation legislation. Empty drums will be removed from the property regularly and shipped to an authorized facility for recycling or disposal.

Manual and electric pumps will be used for the transfer of petroleum products. Smoking, sparks, or open flames are **prohibited** in fuel storage and re-fueling areas at all times. A spill kit will be placed with clear signage in all areas of fuel storage and re-fueling. When re-fueling from drums

those drums will be placed upon platforms underlain by a secondary containment.

Preventative mitigation measures include:

### **Handling and Transfer**

- Fuel transfer hoses with cam lock mechanisms to prevent leakage are used.
- Fuel absorbent pads are placed appropriately to protect from drips and spills.
- Personnel will carefully monitor fuel content in the receiving vessel during transfer and always have absorbent pads available while transferring fuel.
- Any drips or leakages are cleaned immediately.
- All operating personnel will be trained in proper fuel handling and spill response procedures.
- Smoking, open flame and any potential sources of ignition are prohibited within 31 metres of any fuel storage site and fuel transfer locations.
- “NO SMOKING” signs will be erected at each fuel transfer area.
- Equipment maintenance and servicing will be conducted in designated areas. Equipment will be underlain by absorbent pads and spill trays for lubricant changes.
- Funnels will be used to reduce the potential for spillage.
- Waste oils and fluids will be collected in sealed 20 litre pails and will be labelled appropriately and stored in secondary containment berms.
- Empty fuel drums will be removed from site regularly.

Please refer to Kivalliq Energy’s Angilak Property “Spill Contingency Plan” in the event of a spill.

## **6. Signs and Labels**

All drummed fuel will be clearly labeled in accordance with the Workplace Hazardous Materials Information System (WHMIS) which includes the name of the company and the type of fuel contained within. Signs will be erected at each fuel cache with the same information. “NO SMOKING” signs will be erected at each fuel cache and fuel storage area.

## 7. Inspections

The Camp Manager will be responsible for daily inspections of the fuel berms and the monitoring, tracking and recording of fuel inventories while operations are active. Secondary containment berms will be inspected for signs of punctures, failures, leaks, etc. Drums will be inspected for proper storage, leaking bungs, cracks and punctures. Any issues noted will be remediated immediately.

## 8. Spill Kits

A spill kit capable of addressing potential spills (based on type, location and volume of fuel cache) shall be located at each fuel cache, storage area and re-fueling station. Refer to the “Spill Contingency Plan” for more information.