SPILL PREVENTION AND RESPONSE PLAN

FOR THE ASTON BAY PROPERTY
(Formerly the Storm Property)
NUNAVUT, CANADA

Prepared By:

Effective June, 2015

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1. Introduction

This Spill Prevention and Response Plan (SPRP) applies to mineral exploration activities conducted by, or on behalf of, Commander Resources Ltd. ("Commander"), Aston Bay Holdings Ltd. ("Aston Bay") or APEX Geoscience Ltd. ("APEX") at the Aston Bay Property (the "Property," formerly the Storm Property), Somerset Island, Nunavut.

The Aston Bay Property is a joint venture between Commander and Aston Bay, where Commander is the primary tenure holder and Aston Bay is the operator. APEX has been retained by Aston Bay and Commander as a consultant and is authorized to act on behalf of Aston Bay and Commander with regard to the Aston Bay Property. This SPRP will come into effect June 2015, pending approval. Copies and updates to this plan may be obtained via APEX, Commander, or Aston Bay.

1.1 Contact Details

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Vancouver, BC V6E 3V6
Tel: (604) 685-5254
Fax: (604) 685-2814
www.commanderresources.com

Aston Bay Holdings Ltd.
222 – 400 E. Evergreen Blvd.
Vancouver, WA 98660
Tel: (360) 262-6969
www.astonbayholdings.com

APEX Geoscience Ltd.
200 – 9797 45th Ave.
Edmonton, AB T6E 5V8
Tel: (780) 439-5380
Fax: (780) 433-1336
www.apexgeoscience.com

1.2 Purpose and Scope

The SPRP provides straightforward procedures for the storage and handling of fuels and other hazardous materials for the purpose of reducing the risk of environmental contamination and to ensure the health and safety of all personnel from the accidental release of deleterious materials. If an accidental release should occur, the SPRP provides clear response procedures. The goals of the Spill Prevention and Response Plan are to:

- Promote safe handling and use of potentially hazardous materials;
- Promote effective and safe recovery of spilled, potentially hazardous materials;
- Reduce environmental impacts of spills to water and land;
- Identify responsibilities and reporting procedures for spill events;
- Provide site specific information about the facilities and contingencies in place;
- Provide readily accessible emergency information to clean-up crews, management, and government agencies;

- Comply with federal and territorial government regulations and guidelines pertaining to the preparation of a Spill Prevention and Response Plan and notification requirements in the event of a spill.

1.3 Environmental Policy

Commander, Aston Bay and APEX are firmly committed to the protection and conservation of the natural environment, and to ensuring the health and safety of all employees, contractors, and people in surrounding communities. The environmental policy for the Aston Bay Property is to:

- Develop the project in a socially and environmentally responsible manner;
- Fully comply with all applicable environmental legislation and regulations;
- Work in cooperation with federal, territorial, and local governments, as well as other relevant regulatory bodies, and the general public, on all aspects of environmental protection and policy;
- Assess and mitigate any potential environmental impacts and minimize risks to the health and safety of all employees, contractors, and the general public;
- Ensure contractors operate according to the Aston Bay Property environmental policies and procedures;
- Employ an emergency response plan to reduce impacts of unforeseen events;
- Provide ongoing instruction on Aston Bay Property environmental policies and spill prevention and response plans for all employees and contractors;
- Keep employees, contractors, inspectors, government, and regulatory bodies informed of any changes at the site or with project activities.

For further detail regarding environmental policy, please refer to the Aston Bay Property "Environmental Management Plan".

1.4 Other Plans

The SPRP should be considered as a part of the Property wide management system. Other management plans in place at the Aston Bay Property include:

- Abandonment and Restoration Plan (ARP)
- Emergency Response Plan (ERP)
- Environmental Management Plan (EMP)
- Fuel Management Plan (FMP)
- Waste Management Plan (WMP)

1.5 Project and Camp Description

The Aston Bay Property is located east of Aston Bay on Somerset Island, Nunavut, covering an area roughly 63 kilometres (km) long by 42 km wide (Figure 1 in Appendix A). It is approximately 112 km south of the community of Resolute Bay and about 1,500 km northwest of Iqaluit within the 1:250,000 scale NTS map sheet 058C. The Property includes the zinc-silver Seal Prospect and multiple copper showings, collectively known as the Storm Prospect.

Access to the Property is typically restricted to privately chartered helicopter or fixed wing aircraft from Resolute Bay, or the Arctic Watch Lodge, a wilderness adventure resort, located approximately 50 km north of the Property, on Cunningham Inlet. Due to the remoteness of the Property location, the only people, who would be immediately affected by a potential spill, are employees and contractors.

Activities at the Aston Bay Property are anticipated to include regional soil and rock sampling, geological mapping, and ground geophysical surveys as well as diamond drilling at the Storm and Seal Prospects (Figure 1 in Appendix A). Typically, mineral exploration work in the region is seasonal, and can start as early as June and continue until as late as September. All exploration activities at the Aston Bay Property will be helicopter supported.

Commander is currently permitted, licensed and authorized to establish a small camp and conduct the diamond drilling at the Aston Bay Property (formerly Storm Property) in accordance with the Aboriginal Affairs and Northern Development Canada (AANDC) Land Use Permit N2010C0003, Nunavut Water Board (NWB) License 2BE-STO1015 and Nunavut Impact Review Board (NIRB) file number 10EN013. The AANDC permit is set to expire May 16, 2015. A new land use application is currently being applied for in Aston Bay's name, as they are the operator of the project. A water licence amendment and renewal is currently under application in the name of Commander. The water licence amendment will include a relocation of the camp and an increase to the quantity of water. The water licence will ultimately be converted into Aston Bay's name.

A 10 to 12 person seasonal tent camp is proposed to support exploration activities at the Aston Bay Property. A small temporary camp was constructed in the summer of 2014, at the site of an abandoned Cominco Ltd. ("Cominco") exploration camp, located at approximately 73°42'30" N latitude and 94°43'15" W longitude (Figures 1 and 2 in Appendix A). The abandoned camp site included a small air strip and is the storage site for the historic Cominco drill core. It is adjacent to a river, from which camp water was drawn. Upon completion of the 2014 program, the camp was removed, with the exception of the Cominco drill core, 10 drums of aviation fuel, 17 drums

of diesel fuel, 2 propane tanks, one wooden emergency structure and an outhouse, all of which are intended to be used in future programs. In addition, 90 empty drums are stored at the camp site and a fuel cache near Aston Bay. The empty drums will be removed during the 2015 field program. All wastes were separated into combustible, recyclable or hazardous (petroleum products, batteries, etc.) and subsequently removed from site to be properly disposed in an authorized facility in Resolute Bay.

During the 2014 program, a new camp location was scouted due to the limitations of the airstrip located at the current camp. A suitable new camp location was located at approximately 73°39'20" N latitude and 94°27'34" W longitude (Figure 2 in Appendix A). While the new camp is being constructed, the old camp will be used as an emergency backup and then subsequently removed and the site remediated. The proposed camp location is along the Aston River, from which camp water can be drawn (Figure 2 in Appendix A). Structures for the proposed camp may include 6 sleeper tents, medical tent, kitchen, dry, office, shop, core shack, generator housing, incinerator, and 2 outhouses. The majority of the structures will be insulated Weatherhaven tents, or similar, with plywood floors. Figure 3 in Appendix A shows a possible layout for the proposed camp.

A drill program of 5,000 to 10,000 m is proposed for the 2015 season, utilizing one to two diamond drills. The average hole depth is expected to be approximately 200 m, up to a maximum proposed depth of 700 m. Similar programs are anticipated for 3 to 4 subsequent years. The areas for the proposed diamond drilling at the Storm and Seal Prospects are defined in figures 1 and 2 in Appendix A.

1.6 Hazardous Materials On-Site

A main fuel cache will be established proximal to the proposed camp, primarily to store diesel and jet fuel, with smaller quantities of gasoline and propane. Small fuel caches will also be established at drill sites while drilling is in progress. These temporary caches will store small amounts of diesel and propane, as needed for drilling. Other hazardous materials found on site may include small quantities of various lubricants/oil/grease for drilling and maintenance of motorized equipment, cleaning products, and waste oil.

Diesel, jet fuel, and gasoline will be stored in 205 litre (L) steel drums. Propane will be stored in 100 pound (lb) cylinders equipped with pressure relief valves. Waste oil will be sealed in 205 L steel drums and removed from camp for proper disposal.

Table 1.1: Inventory of Hazardous Materials to be Stored on Site

Material	Container	Maximum On Site*
Diesel	205 L Drum	500 Drums
Jet Fuel (Jet A or Jet B)	205 L Drum	500 Drums
Gasoline	205 L Drum	25 Drums
Propane	100 lb Cylinder	50 Cylinders

* Pending approval from AANDC, NWB and NIRB.

Further details on fuel storage and monitoring can be found in the Aston Bay Property "Fuel Management Plan". Material Safety Data Sheets (MSDS) for each of the hazardous materials listed in Table 1 are included in Appendix B.

1.7 Preventative Measures

All fuels and other hazardous materials will be stored within "Arctic Insta-Berms", or similar products, for secondary containment. These types of berms utilize chemical and fire resistant fabric (generally polyurethane coated nylon or vinyl coated polyester material) designed for extreme arctic temperatures and puncture resistance. "RainDrain" or similar hydrocarbon filtration systems will be used to safely remove any water collected inside the berms, and as a safeguard against any potential overflows of contaminated water.

Fuel drums will be stored on their sides in organized rows with the bungs in the three o'clock and nine o'clock positions. Drums will be stood upright 1 to 2 days prior to use in order to allow any contaminants to settle. Daily inspections will be conducted to identify any damaged or leaking containers, and the findings reported in the "Daily Fuel Inspection Record" (Appendix C). In the event that a leak is discovered, the substance will either be used immediately or transferred to an undamaged container. Regular inspections and maintenance of motorized equipment will also be performed to avoid any fluid leaks onto the land. When possible, motorized equipment will be stored within berms.

Propane cylinders will be equipped with a pressure release valve that opens and closes to prevent a buildup of excessive internal pressure. Labels, showing data such as date of manufacture and re-testing dates, will be applied to the collar of the cylinders. Propane is non-toxic and will not contaminate soil, however secondary containment berms will be used for storage as a precaution. All propane cylinders will be secured for safety and stored away from any sources of ignition.

Electric or hand wobble pumps equipped with filtration devices will be used for the transfer of diesel, jet fuel, and gasoline from their storage containers directly to their end-use fuel tanks. Portable drip trays or mini-berms will be used to mitigate the risk of any spillage. Proper grounding procedures will always be used during fuel transfer while using an electric pump. Cigarette smoking, sparks, open flames, and any potential ignition sources are prohibited within 100 m of any fuel storage site and at all times during fuel transfer.

All chemical and fuel storage and fuel transfer areas will be located a minimum distance of 31 m from the normal high water mark of any water body. Spill kits and firefighting equipment will be strategically located near where any hazardous materials are stored or transferred, at all drill sites, in the helicopter(s), and at other locations throughout the camp. Section 4.1 provides details on spill kit contents.

Camp grey water will be piped to a sump at least 31 m from the kitchen, office, and sleeping quarters and a minimum of 31 m from the normal high water mark of any water body. The sump must maintain a minimum 1 metre (m) freeboard at all times. The sump and pipe will be inspected at regular intervals for leaks or overflow.

2. Response Organization

In the case of a spill or environmental emergency, an immediate, safe, and environmentally responsible reaction is required. All spills at the Storm Property will be reported.

2.1 Basic Steps

The basic steps of the response plan are as follows:

1. *Ensure* the safety of all persons at all times.
2. *Identify* and find the spilled substance and its source, and if possible, stop the process or shut off the source.
3. *Inform* the on-site coordinator or his/her designate at once, so that immediate actions may be taken including notification of the 24 Hour Spill Report Line and an AANDC Water Resources Officer.
4. *Contain* the spill or environmental hazard.
5. *Implement* any necessary cleanup/remedial action.

2.2 Chain of Command

1. *Immediately* notify the 24 Hour Spill Report Line at 867-920-8130 (Fax: 867-873-6924), the AANDC in Nunavut at 1-800-567-9604, and Environment Canada at 867-975-4644.
2. Before or after contacting the 24 Hour Spill Report Line, a Spill Report Form (Appendix D) is to be filled out.
3. Notify project supervisors Rob L'Heureux (APEX) at 780-439-5380 or 780-916-5482, Bruce Counts (Aston Bay) at 360-262-6969 and Eric Norton (Commander) at 604-484-4077.

Table 2.1: Spill Reporting and Response Contact List

Contact	Telephone Number
24 Hour Spill Report Line	867-920-8130
Rob L'Heureux, Project Supervisor (APEX Geoscience Ltd.)	780-439-5380 (office) 780-916-5482 (mobile)
Bruce Counts, Project Supervisor (Aston Bay Holdings Ltd.)	360-262-6969
Eric Norton Project Supervisor (Commander Resources Ltd.)	604-484-4077
AANDC (Nunavut)	1-800-567-9604
Environment Canada	867-975-4644 24-hr page: 867-766-3737
Government of Nunavut Department of Environment	867-975-7700 (Iqaluit) 867-252-3879 (Resolute)
DFO (Central and Arctic Branch)	519-383-1813
Nunavut Water Board	867-360-6338
RCMP (Resolute)	867-252-0123
Resolute Bay Health Centre	867-252-3844
Medevac (Yellowknife)	867-669-4115
Aston Bay Satellite Phone	TBA
Helicopter Satellite Phone	TBA

* The Phone numbers for the satellite phone system used in camp and for the helicopter change annually. Once the numbers have been assigned, the SPRP will be updated.

3. Action Plan

3.1 Potential Spill Hazards

Even with appropriate precautions, the potential for spills remains when dealing with fuel and other hazardous materials. The following is a list of potential spill hazards:

- 205 L drums holding diesel, jet fuel, gasoline, waste fuels, and waste oils have the potential to leak or rupture due to mishandling. Older or refilled drums are more prone to leaking around the bungs if the seals are not properly maintained.
- Propane cylinders may leak from the valves or rupture as a result of mishandling.
- Vehicles and other motorized equipment may experience fuel or oil leaks as a result of malfunctions, impacts, lack of maintenance, improper storage, or faulty operation.
- Leaks or spills may occur during fuel transfer due to over-fueling, improper fueling procedure, or faulty equipment.
- The risk of rupturing a fuel container increases during transport due to the increased amount of handling involved.

Regular inspection and maintenance of fuel caches, motorized equipment, and fuel transfer equipment will help to mitigate the risks outlined above. Training for proper maintenance of motorized equipment, fuel transfer and handling procedures, and spill response training will be provided to applicable personnel.

3.2 Potential Environmental Impacts

All hazardous materials pose a threat to the environment if spilled. Overall, spills in the winter are usually lower impact as snow is a natural sorbent and ice forms a barrier against soil or water contamination. The following list outlines potential environmental impacts of hazardous materials stored on site:

- Gasoline may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Gasoline volatizes quickly.
- Diesel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Diesel burns slowly and thus the risk to the environment is reduced during recovery as it can be more readily contained compared to more volatile fuels.
- Jet fuel may be harmful to wildlife and aquatic life. It is not readily biodegradable and has the potential for bioaccumulation in the environment. Jet fuel volatizes relatively quickly.
- Propane may be harmful to wildlife and the surrounding environment, and it has the potential to accumulate in the environment. Propane is extremely volatile and is the most flammable material stored on site. Impacts to the immediate surrounding environment are of greatest concern.
- Oils and greases may be harmful to wildlife and aquatic life. They are not readily biodegradable and have the potential for bioaccumulation in the environment.

Take action only if safety permits!

NEVER SMOKE when dealing with spills!

3.3 Initial Actions

- Ensure safety of all personnel.
- Assess spill hazards and risks.
- Remove all sources of ignition.
- Stop the spill if it is possible to do so safely.
- Notify the supervisor and request assistance if needed.
- Contain the spill.

3.4 Secondary Actions

- Determine the status of the spill event.
- If necessary, pump fuel from a damaged or leaking tank or drum into a refuge container.
- Notify the 24 Hour Spill Report Line.
- Complete and fax a copy of the Spill Report Form (Appendix D).
- Notify permitting authorities.
- If possible, resume cleanup and containment.

3.5 Containment Procedures

- Ensure it is safe to initiate containment procedures.
- Always use applicable safety equipment (gloves, goggles/safety glasses, masks/respirators, etc.) before attempting to contain a spill.
- Initiate spill containment by first determining what will be affected by the spill.
- Assess speed and direction of the spill and the cause of movement (water, wind, slope).
- Determine the best location for containing the spill, avoiding water bodies.
- Have a contingency plan ready in case spill worsens beyond control or if other factors impede containment efforts.

3.5.1 Diesel, Jet Fuel, Gasoline, Hydraulic Oil and Lubricating Oil

3.5.1.1 Containment of Spills on Land

Spills on land include spills on rock, gravel, soil and/or vegetation. It is important to note that soil is a natural sorbent, thus spills on soil are generally less serious than spills on water as contaminated soil can be more easily recovered. Generally spills on land occur during the late spring, summer or fall when snow cover is at a minimum. It is important that all measures be undertaken to avoid spills reaching open water bodies.

Dykes

Dykes can be created using soil surrounding a spill on land. These dykes are constructed around the perimeter or down slope of the spilled fuel. A dyke needs to be built up to a size that will ensure containment of the maximum quantity of fuel that may reach it. A plastic tarp can be placed on and at the base of the dyke such that fuel can pool up and subsequently be removed with sorbent materials or by pump into barrels or bags. If the spill is migrating very slowly a dyke may not be necessary and sorbents can be used to soak up fuels before they migrate away from the source of the spill.

Trenches

Trenches can be dug out to contain spills as long as the top layer of soil is thawed. Shovels pick axes or a loader can be used depending on the size of trench required. It is recommended that the trench be dug to the bedrock or permafrost, which will then provide containment layer for the spilled fuel. Fuel can then be recovered using a pump or sorbent materials.

3.5.1.2 Containment of Spills on Water

Spills on water such as rivers, streams or lakes are the most serious types of spills as they can negatively impact water quality and aquatic life. All measures need to be undertaken to contain spills on open water.

Booms

Booms are commonly used to recover fuel floating on the surface of lakes or slow moving streams. They are released from the shore of a water body to create a circle around the spill. If the spill is away from the shoreline a boat will need to be used to reach the spill, then the boom can be set out. More than one boom may be used at once. Booms may also be used in streams

and should be set out at an angle to the current. Booms are designed to float and have sorbent materials built into them to absorb fuels at the edge of the boom. Fuel contained within the circle of the boom will need to be recovered using sorbent materials or pumps and placed into barrels or bags for disposal.

Weirs

Weirs can be used to contain spills in streams and to prevent further migration downstream. Plywood or other materials found on site can be placed into and across the width of the stream, such that water may still flow under the weir. Spilled fuel will float on the water surface and be contained at the foot of the weir. It can then be removed using sorbents, booms or pumps and placed into barrels or plastic bags.

Barriers

In some situations barriers made of netting or fence material can be installed across a stream, and sorbent materials placed at the base to absorb spilled fuel. Sorbents will need to be replaced as soon as they are saturated. Water will be allowed to flow through. This is very similar to the weir option discussed above.

Note that in some cases, it may be appropriate to burn fuel or to let volatile fuels such as gasoline evaporate after containment on the water surface. This should only be undertaken in consultation with, and after approval from the AANDC or lead agency Inspector.

3.5.1.3 Containment of Spills on Ice

Spills on ice are generally the easiest spills to contain due to the predominantly impermeable nature of the ice. For small spills, sorbent materials are used to soak up spilled fuel. Remaining contaminated ice/ slush can be scraped and shoveled into a plastic bag or barrel. However, all possible attempts should be made to prevent spills from entering ice covered waters as no easy method exists for containment and recovery of spills if they seep under ice.

Dykes

Dykes can be used to contain fuel spills on ice. By collecting surrounding snow, compacting it and mounding it to form a dyke down slope of the spill, a barrier is created thus helping to contain the spill. If the quantity of spill is fairly large, a plastic tarp can be placed over the dyke

such that the spill pools at the base of the dyke. The collected fuel can then be pumped into barrels or collected with sorbent materials.

Trenches

For significant spills on ice, trenches can be cut into the ice surrounding and/or down slope of the spill such that fuel is allowed to pool in the trench. It can then be removed via pump into barrels, collected with sorbent materials, or mixed with snow and shoveled into barrels or bags.

Burning

Burning should only be considered if other approaches are not feasible, and is only to be undertaken with the permission of the AANDC or lead agency Inspector.

3.5.1.4 Containment of Spills on Snow

Snow is a natural sorbent, thus as with spills on soil, spilled fuel can be more easily recovered. Generally, small spills on snow can be easily cleaned up by raking and shoveling the contaminated snow into plastic bags or empty barrels, and storing these at an approved location.

Dykes

Dykes can be used to contain fuel spills on snow. By compacting snow down slope from the spill, and mounding it to form a dyke, a barrier or berm is created thus helping to contain the spill. If the quantity of spill is fairly large, a plastic tarp can be placed over the dyke such that the spill pools at the base of the dyke. The collected fuel/snow mixture can then be shoveled into barrels or bags, or collected with sorbent materials.

3.5.1.5 Storage, Transfer and Disposal

In most cases, spill cleanups are initiated at the far end of the spill and contained moving toward the centre of the spill. Sorbent socks and pads are generally used for small spill clean-up. A pump with attached fuel transfer hose can suction spills from leaking containers or large accumulations on land or ice, and direct these larger quantities into empty drums. Hand tools such as cans, shovels, and rakes are also very effective for small spills or hard to reach areas. Heavy equipment can be used if deemed necessary, and given space and time constraints.

Used sorbent materials are to be immediately placed in plastic bags, and later in sealed containers for future disposal. All materials mentioned in this section are available in the spill kits located at camp, drill sites and fuel caches. Following clean up, any tools or equipment used will be properly washed and decontaminated, or replaced if this is not possible.

All contaminated soil, water, ice, snow, and supplies used for clean-up will be stored in sealed, labeled containers and removed from site for proper disposal at an approved facility. The movement of hazardous wastes will be monitored by the Nunavut Department of Environment and tracked with a Waste Manifest during all movements and transfers.

3.5.2 Propane

It is not possible to contain vapors when released. Water spray can be used to knock down vapors if no chance of ignition exists. Personnel should leave the area immediately unless a small leak is stopped immediately following detection. Personnel should avoid touching release points on damaged containers as frost may form rapidly. If tanks are damaged, do not attempt a recovery – allow gas to disperse. Keep clear of tank ends. Small fires can be extinguished with a dry chemical CO_2 fire extinguisher.

3.5.2.1 Containment of Spills on Land

Do not attempt to contain propane release.

3.5.2.2 Containment of Spills on Water

Do not attempt to contain propane release.

3.5.2.3 Containment of Spills on Ice

Do not attempt to contain propane release.

3.5.2.4 Containment of Spills on Snow

Do not attempt to contain propane release.

3.5.2.5 Storage, Transfer and Disposal

It is not possible to contain released vapors. Contaminated materials and damaged containers will be sent to an approved facility for disposal. The movement of hazardous wastes will be

monitored by the Nunavut Department of Environment and tracked with a Waste Manifest during all movements and transfers.

3.5.3 Chemical Spills

- Assess hazard of spilled material; **REFER TO MSDS**. Members of the emergency response team who are vulnerable to certain contaminants should be replaced with alternatives (e.g. Asthmatics where fumes or airborne particles are evident).
- Assemble applicable safety equipment (gloves, goggles/safety glasses, masks/respirators, etc.) before responding to a spill.
- Apply absorbents to soak up liquids.
- Solid chemicals such as dusts or powders should be covered with plastic sheeting to prevent disbursement by wind or animal.
- Neutralize acids or caustics. Place spilled material and contaminated clean-up supplies in empty refuge drums and seal for disposal.
- Contact the 24 Hour Spill Report Line.
- Proceed with clean-up in correspondence with the MSDS and steps in section 3.

4. Resource Inventory

Spill kits and firefighting equipment will be strategically located near where any hazardous materials are stored or transferred, at all fuel caches, drill sites, in the helicopter(s), and at numerous locations throughout the camp.

4.1 On-site Resources

Spill kits will be in bright yellow 231 L rigid plastic containers and will contain:

100	oil sorbent pads
6	small pillows
2	large pillows
2	3”x4’ socks
5	3”x8’ socks
2	4’ socks
1	25 lb bag granular
2	pair splash goggles
2	poly coated Tyvek suits
2	disposable respirators
10	large bags with ties for temporary use

2 large tarps
1 collapsible shovel
1 roll duct tape
1 utility knife
2 spill kit labels
1 laminated copy of the Aston Bay Property Spill Prevention and Response Plan
1 231 L overpack drum
1 checklist of required items

Other equipment on site:

2 38”x144’ rolls absorbent matting
200 16”x20” enviro matting
10 booms
5 large tarps
5 shovels (minimum)
3 pick axes (minimum)
3 rakes (minimum)
10 empty 205 L drums (minimum)

Spill kits will be located:

- Main fuel cache
- Helicopter pad / air strip
- Drill fuel caches
- Generator shack
- Incinerator
- Additional spill kits around camp

5. Training Program

5.1 On-site Personnel

All on-site personnel will undergo an orientation and training program on initial spill response procedures and be familiar with spill reporting requirements. Fuel handling personnel will receive additional training in safe operation of fuel transfer equipment, spill prevention techniques and spill response. The on-site project supervisor will keep detailed training records.

A designated Emergency Response Team (ERT) made up of on-site personnel will be established. Members of the ERT will receive comprehensive and ongoing training in emergency spill response. ERT members will be on-site at all times and will be made aware of the available resources and locations of spill kits.

Training will include, but not be limited, to the following:

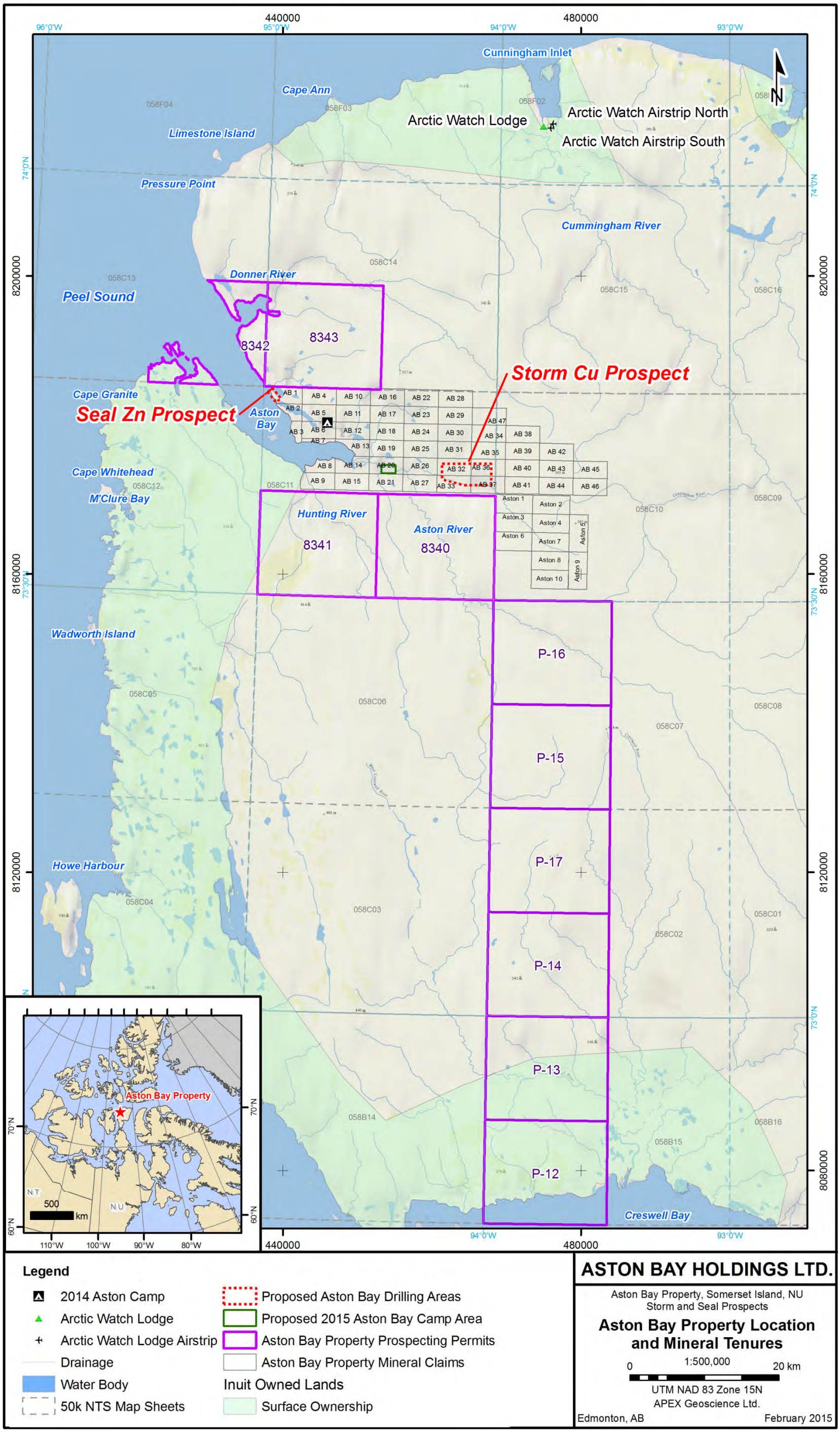
- Review of the SPRP and ERT member responsibilities.
- Location of fuel and chemical storage sites.
- Causes and possible effects of spills.
- Use of on and off-site spill response resources.
- Exercises in spill response and spill kit use.
- Distribution of up-to-date copies of the SPRP and emergency contact lists.

All on-site personnel are required to have basic training in first aid, WHMIS, and Transportation of Dangerous Goods (TDG). Supervisors are required to have advanced first aid training, as well as a valid Occupational Health and Safety (OHS) Supervisor's Certificate.

5.2 Contractors

All contractors will complete site-specific health and safety training including, but not limited to: WHMIS, TDG, and OSH training.

Appendix A: Figures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Cummingham River
Donner River
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8343
Storm Cu Prospect
Seal Zn Prospect
Cape Granite
Aston Bay
Cape Whitehead
M'Clure Bay
Hunting River
Aston River
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8340
Wadworth Island
Howe Harbour
P-16
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P-12
Creswell Bay
Aston Bay Property
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NU
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Legend
2014 Aston Camp
Arctic Watch Lodge
Arctic Watch Lodge Airstrip
Drainage
Water Body
50k NTS Map Sheets
Proposed Aston Bay Drilling Areas
Proposed 2015 Aston Bay Camp Area
Aston Bay Property Prospecting Permits
Aston Bay Property Mineral Claims
Inuit Owned Lands
Surface Ownership
ASTON BAY HOLDINGS LTD.
Aston Bay Property, Somerset Island, NU
Storm and Seal Prospects
Aston Bay Property Location and Mineral Tenures
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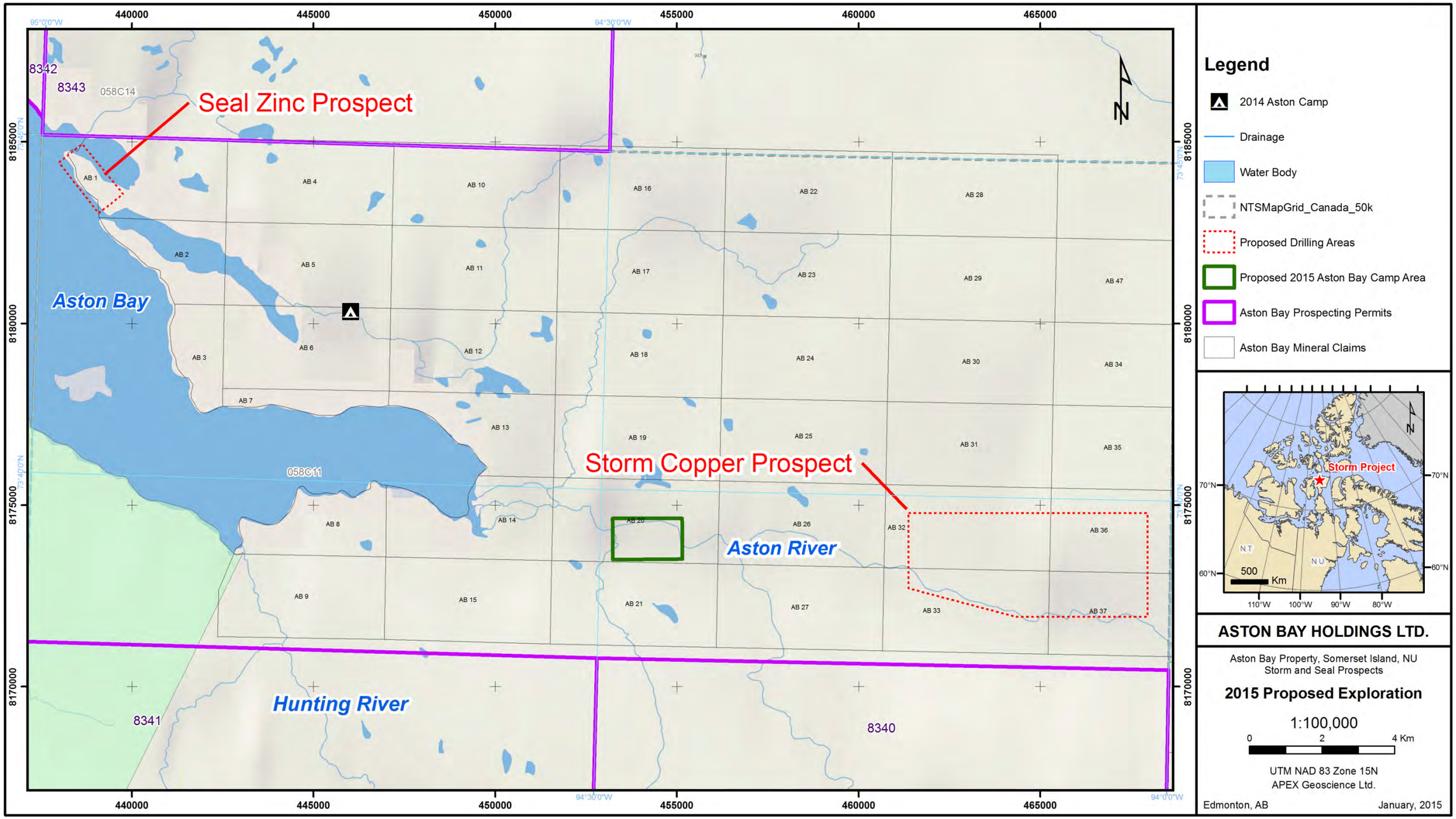
UTM NAD 83 Zone 15N
APEX Geoscience Ltd.
Edmonton, AB
February 2015

Figure 1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AB 20
AB 21
AB 22
AB 23
AB 24
AB 25
AB 26
AB 27
AB 28
AB 29
AB 30
AB 31
AB 32
AB 33
AB 34
AB 35
AB 36
AB 37
AB 47
Aston Bay
058C11
Storm Copper Prospect
Aston River
Hunting River
8341
8340
N
Legend
2014 Aston Camp
Drainage
Water Body
NTSMapGrid_Canada_50k
Proposed Drilling Areas
Proposed 2015 Aston Bay Camp Area
Aston Bay Prospecting Permits
Aston Bay Mineral Claims
Storm Project
70°N
60°N
N.T.
N.U.
500
Km
110°W
100°W
90°W
80°W
ASTON BAY HOLDINGS LTD.
Aston Bay Property, Somerset Island, NU
Storm and Seal Prospects
2015 Proposed Exploration
1:100,000
0
2
4 Km
UTM NAD 83 Zone 15N
APEX Geoscience Ltd.
Edmonton, AB
January, 2015

Figure 2


Inset Map
Outhouses
Core Shack
Shop
Sump
Sump
Water Line
Dry
Kitchen
Office
Medical Tent
Sleepers
Generator
Incinerator
0
10
20 m
Airstrip
H
Water Line
See Inset Map for Details
Legend
Spill Kit
Proposed Water Line
Outhouse
Kitchen
Medical Tent
Generator
Proposed Buildings
Proposed Heli Pad
Proposed Airstrip
Proposed Fuel Cache
Arctic Watch Lodge
Aston Bay
2014 Aston Camp
Proposed New Camp
ASTON BAY HOLDINGS LTD.
Aston Bay Project, Somerset Island, NU
Storm and Seal Prospects
Proposed New Camp
Location and Layout
0 15 30 m
1:1,500
UTM NAD 83 Zone 15N
APEX Geoscience Ltd.
Edmonton, AB
January 2015
453900
454000
454100
454200
454300
8174300
8174200
8174100

Figure 3

Appendix B: MSDS

Material Safety Data Sheet

TWO CYCLE MOTOR OIL

PETRO-CANADA

1 . Product and company identification

Product name	:	TWO CYCLE MOTOR OIL
Code	:	TWOCYC
Material uses	:	A low ash 2-cycle engine oil designed to lubricate conventional pre-mixed fuel/oil as well as oil injection lubricated engines powering air-cooled two-stroke cycle engines.
Manufacturer	:	Petro-Canada Lubricants Inc. 2310 Lakeshore Road West Mississauga, Ontario Canada L5J 1K2
In case of emergency	:	Suncor Energy: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state	:	Viscous liquid.
Odour	:	Mild petroleum oil like.
WHMIS (Canada)	:	Not controlled under WHMIS (Canada).
OSHA/HCS status	:	While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this MSDS contains valuable information critical to the safe handling and proper use of the product. This MSDS should be retained and available for employees and other users of this product.
Emergency overview	:	No specific hazard.
Routes of entry	:	Dermal contact. Eye contact. Inhalation. Ingestion.
Potential acute health effects		
Inhalation	:	No known significant effects or critical hazards.
Ingestion	:	No known significant effects or critical hazards.
Skin	:	Slightly irritating to the skin.
Eyes	:	Slightly irritating to the eyes.
Potential chronic health effects		
Chronic effects	:	No known significant effects or critical hazards.
Carcinogenicity	:	Not listed as carcinogenic by OSHA, NTP or IARC.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.
Developmental effects	:	No known significant effects or critical hazards.
Fertility effects	:	No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	:	Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum).	Mixture	-

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

3 . Composition/information on ingredients

The base oil may be a mixture of the following CAS#s: 8042-47-5, 64741-95-3, 64742-01-4, 64742-46-7, 64742-47-8, 64742-53-6, 64742-54-7, 64742-55-8, 64742-62-7, 72623-83-7, 72623-84-8, 72623-85-9, 72623-86-0, 72623-87-1, 178603-64-0, 178603-65-1, 178603-66-2, 445411-73-4

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : May be combustible at high temperature.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), asphyxiants, smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Low fire hazard. This material must be heated before ignition will occur.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

6 . Accidental release measures

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum)	**ACGIH TLV (United States). Notes: (Mineral oil)** TWA: 5 mg/m³, (Inhalable fraction) 8 hour(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour filter

8 . Exposure controls/personal protection

Hands	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: neoprene, nitrile, polyvinyl alcohol (PVA), Viton®.
Eyes	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	:	Viscous liquid.
Flash point	:	Open cup: 152°C (305.6°F) [Cleveland.]
Auto-ignition temperature	:	Not available.
Flammable limits	:	Not available.
Colour	:	Blue-green.
Odour	:	Mild petroleum oil like.
Odour threshold	:	Not available.
pH	:	Not available.
Boiling/condensation point	:	Not available.
Melting/freezing point	:	Not available.
Relative density	:	0.88 kg/L @ 15°C (59°F)
Vapour pressure	:	Not available.
Vapour density	:	Not available.
Volatility	:	Not available.
Evaporation rate	:	Not available.
Viscosity	:	20.9 cSt @ 40°C (104°F), 4.5 cSt @ 100°C (212°F), VI=132
Pour point	:	-57°C (-71°F)
Solubility	:	Insoluble in water.

10 . Stability and reactivity

Chemical stability	:	The product is stable.
Hazardous polymerisation	:	Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	:	Reactive with oxidising agents, reducing agents, alkalis and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, aldehydes, methacrylate monomers, asphyxiants, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure

11 . Toxicological information

Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum).	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	>5.2 mg/l	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Mixture of severely hydrotreated and hydrocracked and/or solvent-refined base oil (petroleum).	A4	-	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

Other adverse effects : No known significant effects or critical hazards.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	Not regulated.	-	-	-		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Not regulated.

Canada

WHMIS (Canada) : Not controlled under WHMIS (Canada).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

International lists : **Australia inventory (AICS)**: All components are listed or exempted.
China inventory (IECSC): All components are listed or exempted.
Korea inventory: All components are listed or exempted.
Philippines inventory (PICCS): All components are listed or exempted.

16 . Other information

Hazardous Material Information System (U.S.A.) :

Health	1
Flammability	1
Physical hazards	0
Personal protection	B

National Fire Protection Association (U.S.A.) :

References : Available upon request.
™ Trademark of Suncor Energy Inc. Used under licence.

Date of printing : **2/2/2014.**

Date of issue : 19 January 2012

Date of previous issue : 10/6/2010.

Responsible name : **Product Safety - RS**

Indicates information that has changed from previously issued version.

16 . Other information

For Copy of (M)SDS : The Canadian Controlled Products Regulations (CPR) (Under the Hazardous Products Act, part of the WHMIS legislation) only apply to WHMIS Controlled (i.e., hazardous) products. Therefore, the CPR and the 3-year update rule specified therein do not apply to WHMIS Non-Controlled products. Although this is true, customarily Petro-Canada reviews and updates Non-Controlled product MSDS if a customer requests such an update. These Non-Controlled product updates are given a lower priority than Controlled products but are handled as soon as practicable. If you would like to verify if the MSDS you have is the most current, or you require any further information, please contact:

Internet: lubricants.petro-canada.ca/msds

Lubricants:
Western Canada, telephone: 1-800-661-1199; fax: 1-800-378-4518
Ontario & Central Canada, telephone: 1-800-268-5850; fax: 1-800-201-6285
Quebec & Eastern Canada, telephone: 1-800-576-1686; fax: 1-800-201-6285

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

DI-CORP MINERAL EXPLORATION

+ PRODUCT DATA SHEET +

550RD 550X POLYMER

550RD 550X POLYMER

DESCRIPTION

550RD/550X is a highly dispersible, slightly anionic, dry synthetic polymer that minimizes fisheyes when mixing allowing for more consistent yields and less waste in minimal shear environments. Requires minimal shearing to yield very consistently and quickly compared to semi synthetic or natural polymers.

PRIMARY FUNCTIONS

- High viscosity for cuttings transport with minimal product usage
- Nontoxic for use in environmentally sensitive applications

SECONDARY FUNCTIONS

These functions serve as supplemental benefits of this products use when mixed accordingly.

- Reduced torque and tubular wear compared to straight water applications
- Increased rate of penetration in directional and horizontal wells
- Reduction in storage on site, volume of supplies and transport costs over liquid product
- Shale and clay encapsulation that reduces swelling and increases well bore stability

MIXING

550RD 550X can be mixed readily in fresh water. Sprinkle slowly onto agitated, turbulent water. Hydration is almost immediate. 1-1.5 kg/m^3 is generally sufficient for normal vertical drilling applications. In unconsolidated or broken formations that are prone to sloughing or in water reactive clay or shale the concentration should be increased to 1.5-2.5kg/m^3. This product is sensitive to high salinity, if mixing in salt water contact Di-Corp rep for specialized instruction.

ENVIRONMENT

Dangerous components: None
Potentially dangerous impurities: None
Physical properties: White solid at 20 Degrees C
Measures to be taken after leakage or accidental spilling: Wash abundantly with water and bleach
Inflammability or danger of explosion: None
Poisonous properties: Non-toxic, slightly basic
First Aid measures: Wash with water

PACKAGING

20 kg. High impact plastic pail with handle.

Surrey • Saskatoon • North Bay • Whitehorse • Smithers
Tel: 1.800.665.6645 Web: www.di-corp.com

DI-CORP DOWN TO EARTH BUSINESS

GDT
GENERAL DRILLING
TOOL & SUPPLY Ltd.
(403)735-6165 CALGARY, ALBERTA

WESTWAY FEED PRODUCTS, INC.
3315 2nd AVE. N
LETHBRIDGE, AB
(800)563-6371

MATERIAL SAFETY DATA SHEET

REVISED JUNE 28, 2007

SECTION I: PRODUCT IDENTIFICATION

DESCRIPTION:	CSB (CONCENTRATED SEPAROTOR BY-PRODUCT)
USE:	ANIMAL FEED
MANUFACTURER:	WESTWAY FEED PRODUCTS, INC. 3315 2nd AVE. N. LETHBRIDGE, AB, CANADA T1H 0C7
EMERGENCY CONTACT:	WESTWAY FEED PRODUCTS, INC. TECHNICAL SERVICES DON MANN (403)660-4416

SECTION II: HAZARDOUS MATERIAL IDENTIFICATION

HAZARD DESCRIPTION:
1. STICKY SYRUP
2. CAN REACT EXOTHERMALLY IF STORED AT HIGH TEMPERATURES.

	COMPONENT 1	COMPONENT 2	COMPONENT 3
CHEMICAL NAME:	SUCROSE	PLANT NON-SUCROSES	WATER
CHEMICAL FORMULA:	C H O	N.A.	H O
PERCENT OF PRODUCT:	12%	68%	20%

SECTION III: PHYSICAL AND CHEMICAL DATA

DESCRIPTION:	DARK BROWN SYRUP
DECOMPOSITION:	SLOW DECOMPOSITION ABOVE 186 C
VOLATILITY:	NIL
SPECIFIC GRAVITY:	1.41
SOLUBILITY:	SOLUBLE IN WARM WATER IN ALL PROPORTIONS
pH:	8-9 IN WATER SOLUTION
REACTIVITY:	NIL AT NORMAL TEMPERATURE AND USE. CAN REACT EXOTHERMALLY UNDER PROPER CONDITIONS OF INVERT, AMINO ACIDS, AND TEMPERATURES.

PAGE 1 OF 2

SPECIAL PROTECTION INFORMATION:

PROTECTIVE GLOVES:	N/A
EYE PROTECTION:	N/A
RESPIRATORY PROTECTION:	BREATHING APPARATUS MUST BE USED WHEN ENTERING STORAGE TANKS UNLESS THOROUGHLY VENTILLATED.
LOCAL EXHAUST:	STORAGE TANKS SHOULD BE VENTILATED BEFORE ENTRY.
OTHER EQUIPMENT:	LIFE LINE SHOULD BE WORN WHEN ENTERING TANKS.

REACTIVITY DATA:

INCOMPATIBLE MATERIALS:	N/A
STABILITY:	STABLE WHEN STORED AT LESS THAN 140 F
HAZARDOUS POLYMERIZATION:	N/A
HAZARDOUS DECOMPOSTION:	N/A

SPILL OR LEAK PROCEDURES:

WASH WITH WATER OR PICK UP WITH ABSORBENT MATERIALS. PREVENT ENTRY TO WATER WAYS WHERE BOD IS A CONCERN.

SPECIAL INFORMATION: NONE

THE INFORMATION AND RECOMMENDATIONS CONTAINED HEREIN ARE BASED ON DATA BELIEVED TO BE CORRECT. NO WARRANTY IS EXPRESSED OR IMPLIED.

DICORP
DOWN TO EARTH BUSINESS

MATERIAL SAFETY DATA SHEET

BIG BEAR ROD GREASE

SECTION I: IDENTIFICATION OF PRODUCT

COMPANY:	**Diversity Technologies Corp.** **8750 – 53rd Ave.** **Edmonton, AB T6E 5G2**	DATE: PHONE: FAX:	**Nov. 22, 2011** **780-440-4923** **780-469-1899**

PRODUCT NAME: **BIG BEAR ROD GREASE**

PRODUCT USE: Anti-seize compound
CHEMICAL FAMILY: Mixture CAS #: Mixture

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: Not WHMIS regulated.
WORKPLACE HAZARD: Not hazardous under normal conditions of use.

TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME: Not TDG regulated.
TDG CLASSIFICATION: Not applicable.
UN NUMBER (PIN): Not applicable.
PACKING GROUP: Not applicable.

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	% (w/w)	CAS NUMBER	LD_{50} Oral-Rat	LC_{50} Inhal-Rat	ACGIH-TLV
Mineral oil	70-80	64742-52-5	Not available	Not available	Not available
Barium soap	20-30	68201-19-4	Not available	Not available	Not available

SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY:	[XX] EYE CONTACT [XX] SKIN [ ] INHALATION [XX] INGESTION
EYE CONTACT:	May cause slight transient irritation.
SKIN CONTACT:	May cause slight transient irritation.
INGESTION:	No effects known.
INHALATION:	Not a likely source of contact during normal use.
CARCINOGENICTY:	None of the ingredients in the compound are listed by NTP, IARC or OSHA as being carcinogenic.
TERATOGENICITY:	No information available.
REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICTY:	No ingredients listed as mutagenic.
SYNERGISTIC PRODUCTS:	No information available.

DICORP
DOWN TO EARTH BUSINESS

MATERIAL SAFETY DATA SHEET

BIG BEAR ROD GREASE

SECTION IV: FIRST AID MEASURES

SKIN CONTACT:	Remove by wiping, or with a waterless hand cleaner. Wash with soap and water. Remove and launder contaminated clothing before re-use.
EYE CONTACT:	Immediately flush with gently flowing warm water until all residual material is removed. Remove contact lenses if present. Hold eyelids open to ensure thorough flushing. If irritation persists, obtain medical attention.
INGESTION:	Do not induce vomiting. Rinse mouth. Obtain immediate medical attention. Never give anything by mouth to an unconscious or convulsing victim.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration as required. If breathing difficulties or distress continues, obtain medical attention.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOUR:	Brown paste; bland odour	
SPECIFIC GRAVITY:	0.90 @ 16°C	
BOILING POINT (°C):	371	
MELTING POINT (°C):	204	
SOLUBILITY IN WATER:	Insoluble	pH: Not available
PERCENT VOLATILE BY VOLUME:	Not available	
EVAPORATION RATE:	Not available	
VAPOUR PRESSURE :	Not available	
VAPOUR DENSITY (air = 1):	Not available	
BULK DENSITY:	Not applicable	

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	188°C (D-92)
FLAMMABLE LIMITS:	Not available
EXTINGUISHING MEDIA:	Dry chemical, CO_2, foam or water spray.
SPECIAL FIRE FIGHTING PRODCEDURES:	Self-contained breathing apparatus required for fire-fighting personnel. Remove containers from fire area, or cool with water spray, if possible.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	This product may burn under fire conditions.

SECTION VII: REACTIVITY DATA

STABILITY:	STABLE [XX] UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	Strong oxidizers. Avoid heat, sparks and open flames.
CONDITIONS OF REACTIVITY:	Contact with incompatibles or ignition sources.

HAZARDOUS DECOMPOSITION PRODUCTS:	May release CO_x, smoke and irritating vapours when heated to decomposition.
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX] MAY OCCUR [ ]

SECTION VIII: PREVENTATIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Not required under normal conditions of use.
VENTILATION:	Not required under normal conditions of use.
PROTECTIVE GLOVES:	Suggest neoprene or viton.
EYE PROTECTION:	Safety glasses with side-shields if required.
OTHER PROTECTIVE EQUIPMENT (Specify):	Protective clothing as required to prevent contact. Ensure eyewash station and emergency shower are available.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid contact with skin and eyes. Avoid ingestion. Wash thoroughly before eating, drinking or smoking. Store in cool, dry area away from incompatibles and sources of ignition. Use caution when opening unvented containers. Use in well-ventilated area. Store unused material in original container.

STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED

Use appropriate safety equipment. Eliminate ignition sources. Scoop up excess, then wipe down the affected area and pick up residual with diatomateous earth to prevent slipping hazard. Place contaminated material and clean up materials in approved containers for disposal.

WASTE DISPOSAL METHOD

Dispose/incinerate in accordance with federal, provincial and local regulations. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. Dispose of, or recycle, empty containers in accordance with local regulations.

SECTION IX: PREPARATION

The information contains herein is given in good faith, but no warranty, expressed or implied, is made.

DATE ISSUED:	Nov. 22, 2011
SUPERSEDES:	Dec. 9, 2008
BY:	Regulatory Affairs
PHONE:	780-440-4923

Material Safety Data Sheet

DIESEL FUEL

PETRO-CANADA

1 . Product and company identification

Product name : DIESEL FUEL

Synonym : Seasonal Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, D50, D60, P40, P50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend, B1, B2, B5, Diesel Low Cloud (LC), Marine Gas Oil.

Code : W104, W293

Material uses : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type. Mining diesels, marine diesels, MDO and naval distillates may have a higher flash point requirement.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state : Bright oily liquid.

Odour : Mild petroleum oil like.

WHMIS (Canada) :

Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!

COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION.

Combustible liquid. Severely irritating to the skin. Irritating to eyes. Keep away from heat, sparks and flame. Do not get in eyes. Avoid breathing vapour or mist. Avoid contact with skin and clothing. Use only with adequate ventilation. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.

Skin : Severely irritating to the skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : No known significant effects or critical hazards.

Carcinogenicity : Diesel engine exhaust particulate is probably carcinogenic to humans (IARC Group 2A).

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

2 . Hazards identification

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Avoid prolonged or repeated skin contact to diesel fuels which can lead to dermal irritation and may be associated with an increased risk of skin cancer.

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Hydrotreated Renewable Diesel/ Fuels, diesel/ Fuel Oil No. 1/ Fuel Oil No. 2	64742-81-0/ 68334-30-5/ 8008-20-6/ 68476-30-2	95 - 100
Alkanes, C10 – 20 Branched and Linear (R100)	928771-01-1	10 - 20
Fatty acids methyl esters	61788-61-2 / 67784-80-9 / 73891-99-3	0 - 5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Combustible liquid

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), sulphur compounds (H2S), smoke and irritating vapours as products of incomplete combustion

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

5 . Fire-fighting measures

Special remarks on fire hazards : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Runoff to sewer may create fire or explosion hazard.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Fuels, diesel	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (Inhalable fraction and vapour) 8 hour(s).
Fuel oil No. 2	**ACGIH TLV (United States). Absorbed through skin.** TWA: 100 mg/m³, (Inhalable fraction and vapour) 8 hour(s).
Hydrotreated Renewable Diesel	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s).
Fuel oil No. 1	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: nitrile, neoprene, polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	: Bright oily liquid.
Flash point	: Diesel fuel and other distillate fuels: Closed cup: ≥40°C (≥104°F) Marine Diesel/MDO/Naval Distillate: Closed Cup: ≥60°C (≥140°F) Mining Diesel: Closed Cup: ≥52°C (≥126°F)
Auto-ignition temperature	: 225°C (437°F)
Flammable limits	: Lower: 0.7% Upper: 6%
Colour	: Clear to yellow (This product may be dyed red for taxation purposes).
Odour	: Mild petroleum oil like.
Odour threshold	: Not available.
pH	: Not available.
Boiling/condensation point	: 150 to 371°C (302 to 699.8°F)
Melting/freezing point	: Not available.
Relative density	: 0.80 to 0.88 kg/L @ 15°C (59°F)
Vapour pressure	: 1 kPa (7.5 mm Hg) @ 20°C (68°F).
Vapour density	: 4.5 [Air = 1]
Volatility	: Not available.
Evaporation rate	: Not available.
Viscosity	: Diesel fuel: 1.3 - 4.1 cSt @ 40°C (104°F) Marine Diesel Fuel: 1.3 - 4.4 cSt @ 40°C (104°F)
Pour point	: Not available.
Solubility	: Insoluble in cold water, soluble in non-polar hydrocarbon solvents.

10 . Stability and reactivity

Chemical stability	: The product is stable.
Hazardous polymerisation	: Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	: Reactive with oxidising agents and acids.
Hazardous decomposition products	: May release COx, NOx, SOx, H_2S, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Fuels, diesel	LD50 Dermal	Mouse	24500 mg/kg	-
	LD50 Oral	Rat	7500 mg/kg	-
Fuel oil No. 2	LD50 Oral	Rat	12000 mg/kg	-
Fuel oil No. 1	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5000 mg/m³	4 hours
Hydrotreated Renewable Diesel	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5200 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

11 . Toxicological information

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Diesel engine exhaust particulate is probably carcinogenic to humans (IARC Group 2A).

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Fuels, diesel	A3	3	-	-	-	-
Fuel oil No. 1	A3	3	-	-	-	-
Fuel oil No. 2	A3	3	-	-	-	-
Hydrotreated Renewable Diesel	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1202	DIESEL FUEL	3	III		-
DOT Classification	Not available.	Not available.	Not available.	-		-

14 . Transport information

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Combustible liquid
Irritating material

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOUR. CAUSES EYE AND SKIN IRRITATION.

Hazardous Material Information System (U.S.A.) :

National Fire Protection Association (U.S.A.) :

References : Available upon request.
™ Trademark of Suncor Energy Inc. Used under licence.

Date of printing : **4/14/2014.**

Date of issue : 28 June 2013

Date of previous issue : No previous validation.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Imperial Oil

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: MOBILUX EP 2
Product Description: Base Oil and Additives
MSDS Number: 6482
Product Code: 2015A0208050
Intended Use: Grease

COMPANY IDENTIFICATION

Supplier: **Imperial Oil Downstream**
240 4th Avenue
Calgary, ALBERTA. T2P 3M9 Canada

24 Hour Environmental / Health Emergency Telephone	1-866-232-9563
Transportation Emergency Phone Number	1-866-232-9563
Product Technical Information	1-800-268-3183
Supplier General Contact	1-800-567-3776

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

HEALTH EFFECTS

Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0
HMIS Hazard ID:	Health:	0	Flammability:	1	Reactivity:	0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Aldehydes, Oxides of carbon, Smoke, Fume, Sulphur oxides, Incomplete combustion products

FLAMMABILITY PROPERTIES

Flash Point [Method]: >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]
Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

For emergency responders: Respiratory protection: respiratory protection will be necessary only in special cases, e.g., formation of mists. Half-face or full-face respirator with filter(s) for dust/organic vapor or Self Contained Breathing Apparatus (SCBA) can be used depending on the size of spill and potential level of exposure. If the exposure cannot be completely characterized or an oxygen deficient atmosphere is possible or anticipated, SCBA is recommended. Work gloves that are resistant to hydrocarbons are recommended. Gloves made of polyvinyl acetate (PVA) are not water-resistant and are not suitable for emergency use. Chemical goggles are recommended if splashes or contact with eyes is possible. Small spills: normal antistatic work clothes are usually adequate. Large spills: full body suit of chemical resistant, antistatic material is recommended.

SPILL MANAGEMENT

Land Spill: Allow spilled material to solidify and shovel it up into a suitable container for recycle or disposal. Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do so without risk. Confine the spill immediately with booms. Warn other shipping. Skim from surface

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications,

handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Semi-fluid
Colour: Brown
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 0.92
Flash Point [Method]: >204°C (400°F) [EST. FOR OIL, ASTM D-92 (COC)]

Flammable Limits (Approximate volume % in air): LEL: N/D UEL: N/D
Autoignition Temperature: N/D
Boiling Point / Range: > 316°C (600°F)
Vapour Density (Air = 1): N/D
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20°C
Evaporation Rate (n-butyl acetate = 1): N/D
pH: N/A
Log Pow (n-Octanol/Water Partition Coefficient): >3.5
Solubility in Water: Negligible
Viscosity: 150 cSt (150 mm2/sec) at 40°C
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: N/D
DMSO Extract (mineral oil only), IP-346: < 3 %wt
Decomposition Temperature: N/D

NOTE: Most physical properties above are for the oil component in the material.

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures.
Ingestion	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Skin	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation: No end point data for material.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

CHRONIC/OTHER EFFECTS

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test animals.

CMR Status:

Chemical Name	CAS Number	List Citations
SOLVENT DEWAXED RESIDUAL OIL (PETROLEUM)	64742-62-7	1,6

--REGULATORY LISTS SEARCHED--

1 = IARC 1
2 = IARC 2A
3 = IARC 2B
4 = ACGIH ALL
5 = ACGIH A1
6 = ACGIH A2

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, 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.

SECTION 14 TRANSPORT INFORMATION

LAND (TDG): Not Regulated for Land Transport

LAND (DOT): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

WHMIS Classification: Not controlled

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations.

CEPA: All components of this material are either on the Canadian Domestic Substances List (DSL), exempt, or have been notified under CEPA.

Listed or exempt from listing/notification on the following chemical inventories: DSL, IECSC, KECI, PICCS, TSCA

Special Cases:

Inventory	Status
AICS	Restrictions Apply

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
ZINC DITHIOPHOSPHATE	68649-42-3	6

--REGULATORY LISTS SEARCHED--

1 = TSCA 4	3 = TSCA 5e	5 = TSCA 12b
2 = TSCA 5a2	4 = TSCA 6	6 = NPRI

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 06: Protective Measures information was modified.
Section 11: Tox Table - Header information was modified.
Section 06: Accidental Release - Protective Measures - Header information was added.
Section 11: Chemical Name - Header information was added.
Section 11: CAS Number - Header information was added.
Section 11: List Citation - Header information was added.
Section 11: Tox List Cited Table information was added.

WHMIS Classification: Not controlled

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DGN: 5006468 (1012446)

Prepared by: Imperial Oil Limited, IH and Product Safety

Material Safety Data Sheet

GASOLINE, UNLEADED

PETRO-CANADA

1 . Product and company identification

Product name : GASOLINE, UNLEADED

Synonym : Regular, Unleaded Gasoline (US Grade), Mid-Grade, Plus, Super, WinterGas, SummerGas, Supreme, SuperClean WinterGas, RegularClean, PlusClean, Premium, marked or dyed gasoline, TQRUL, transitional quality regular unleaded, BOB, Blendstock for Oxygenate Blending, Conventional Gasoline.

Code : W102E, SAP: 102 to 117

Material uses : Unleaded gasoline is used in spark ignition engines including motor vehicles, inboard and outboard boat engines, small engines such as chain saws and lawn mowers, and recreational vehicles.

Manufacturer : PETRO-CANADA
P.O. Box 2844
150 – 6th Avenue South-West
Calgary, Alberta
T2P 3E3

In case of emergency : Petro-Canada: 403-296-3000
Canutec Transportation: 613-996-6666
Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state : Clear liquid.

Odour : Gasoline

WHMIS (Canada) :

Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Emergency overview : WARNING!

FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.

Flammable liquid. Irritating to eyes, respiratory system and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure. Contains material which may cause heritable genetic effects. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation : Inhalation of this product may cause respiratory tract irritation. Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

Ingestion : Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract. Ingestion of this product may cause Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.

2. Hazards identification

Skin : Irritating to skin.

Eyes : Irritating to eyes.

Potential chronic health effects

Chronic effects : This product contains an ingredient or ingredients, which have been shown to cause chronic toxic effects. Repeated or prolonged exposure to the substance can produce blood disorders.

Carcinogenicity : Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : Contains material which may cause heritable genetic effects.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Gasoline	86290-81-5	85-100
Toluene	108-88-3	15-40*
Benzene	71-43-2	0.5-1.5
Ethanol	64-17-5	0.1-0.3

**Montreal: may vary from 3-40%*
**Edmonton: may vary from 1-5%*

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Flammable liquid (NFPA).

Extinguishing media

Suitable : Use dry chemical, CO_2, water spray (fog) or foam.

Not suitable : Do not use water jet.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), polynuclear aromatic hydrocarbons, phenols, aldehydes, ketones, smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Extremely flammable in presence of open flames, sparks, shocks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Vapours may form explosive mixtures with air.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure - obtain special instructions before use. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly

7 . Handling and storage

closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Gasoline	**ACGIH TLV (United States).** TWA: 300 ppm 8 hour(s). STEL: 500 ppm 15 minute(s).
Toluene	**ACGIH TLV (United States).** TWA: 20 ppm 8 hour(s).
Benzene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 0.5 ppm 8 hour(s). STEL: 2.5 ppm 15 minute(s).
Ethanol	**ACGIH TLV (United States).** STEL: 1000 ppm 15 minute(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

8 . Exposure controls/personal protection

Hands	:	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Recommended: polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.
Eyes	:	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Skin	:	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Environmental exposure controls	:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	:	Clear liquid.
Flash point	:	Closed cup: -50 to -38°C (-58 to -36.4°F) [Tagliabue.]
Auto-ignition temperature	:	257°C (494.6°F) (NFPA)
Flammable limits	:	Lower: 1.3% (NFPA) Upper: 7.6% (NFPA)
Colour	:	Clear to slightly yellow or green, undyed liquid. May be dyed red for taxation purposes.
Odour	:	Gasoline
Odour threshold	:	Not available.
pH	:	Not available.
Boiling/condensation point	:	25 to 220°C (77 to 428°F) (ASTM D86)
Melting/freezing point	:	Not available.
Relative density	:	0.685 to 0.8 kg/L @ 15°C (59°F)
Vapour pressure	:	<107 kPa (<802.5 mm Hg) @ 37.8°C (100°F)
Vapour density	:	3 to 4 [Air = 1] (NFPA)
Volatility	:	Not available.
Evaporation rate	:	Not available.
Viscosity	:	Not available.
Pour point	:	Not available.
Solubility	:	Hydrocarbon components virtually insoluble in water. Soluble in alcohol, ether, chloroform and benzene. Dissolves fats, oils and natural resins.

10 . Stability and reactivity

Chemical stability	:	The product is stable.
Hazardous polymerisation	:	Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	:	Reactive with oxidising agents, acids and interhalogens.
Hazardous decomposition products	:	May release COx, NOx, phenols, polycyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Gasoline	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	13600 mg/kg	-
Toluene	LD50 Dermal	Rabbit	12125 mg/kg	-
	LD50 Oral	Rat	636 mg/kg	-
	LC50 Inhalation Vapour	Rat	7585 ppm	4 hours
Benzene	LD50 Dermal	Rabbit	>8240 mg/kg	-
	LD50 Oral	Rat	930 mg/kg	-
	LC50 Inhalation Vapour	Rat	13700 ppm	4 hours
Ethanol	LD50 Oral	Rat	7060 mg/kg	-
	LC50 Inhalation Vapour	Rat	>32380 ppm	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Gasoline	A3	2B	-	-	-	-
Toluene	A4	3	D	-	-	-
Benzene	A1	1	A	+	Proven	+
Ethanol	A3	-	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : There is a wealth of information about the teratogenic hazards of Toluene in the literature; however, based upon professional judgement regarding the body of evidence, WHMIS classification as a teratogen is not warranted.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1203	GASOLINE	3	II		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Flammable liquid
Irritating material
Carcinogen

Canada

WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : FLAMMABLE LIQUID AND VAPOUR. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CANCER HAZARD - CONTAINS MATERIAL WHICH CAN CAUSE CANCER. CONTAINS MATERIAL WHICH MAY CAUSE HERITABLE GENETIC EFFECTS.

Hazardous Material Information System (U.S.A.) :

Health	*	2
Flammability		3
Physical hazards		0
Personal protection		H

National Fire Protection Association (U.S.A.) :

References : Available upon request.
™ Trademark of Suncor Energy Inc. Used under licence.

Date of printing : **10/10/2012.**

Date of issue : 10 October 2012

Date of previous issue : 4/9/2010.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

MATERIAL SAFETY DATA SHEET

SECTION I: IDENTIFICATION OF PRODUCT

COMPANY:	**Diversity Technologies Corp.** **8750 – 53rd Ave.** **Edmonton, AB T6E 5G2**	DATE: PHONE: FAX:	Jan. 3, 2006 604-940-6050 604-940-6080
PRODUCT NAME:	**G-STOP**		
PRODUCT USE:	Drilling mud additive.		
CHEMICAL FAMILY:	Polyacrylamide	CAS#:	Not available

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION:	Not a controlled product under WHMIS
WORKPLACE HAZARD:	Treat as a nuisance dust.

TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME:	Not regulated under TDG
TDG CLASSIFICATION:	Not applicable
UN NUMBER (PIN):	Not applicable
PACKING GROUP:	Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	CAS NUMBER	LD_{50} Oral-Rat	LC_{50} Inhal-Rat	ACGIH-TLV
Contains no WHMIS controlled ingredients.					

SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY:	[ ]EYE CONTACT [ ]SKIN [ ]INHALATION [ ]INGESTION
EYE CONTACT:	May cause slight irritation and/or redness.
SKIN CONTACT:	May cause slight irritation some cases.
INGESTION:	Low acute oral toxicity. May cause nausea and vomiting.
INHALATION:	May cause irritation of the respiratory tract, including sneezing and coughing.
CARCINOGENICITY:	No information available.
TERATOGENICITY:	No information available.
REPRODUCTIVE TOXICITY:	No information available.

Diversity Technologies Corp. is the parent company of
Canamara-United Supply, Hollimex Products, The Drilling Depot and
Westcoast Drilling Supplies

MUTAGENICITY:	No information available.
SYNERGISTIC PRODUCTS:	No information available.

SECTION IV: FIRST AID MEASURES

SKIN CONTACT:	Wash thoroughly with soap and water. If irritation develops or persists, obtain medical attention. Wash contaminated clothing prior to re-use.
EYE CONTACT:	Flush with gently flowing warm water until irritation subsides. If irritation persists, obtain medical attention.
INGESTION:	Do not induce vomiting. Give 2-3 glasses of water. If symptoms occur, obtain medical attention. Never give anything by mouth if patient is unconscious, rapidly losing consciousness or convulsing.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration as required. If breathing difficulties or distress continues obtain medical attention.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOUR:	White granular powder; no odour	
SPECIFIC GRAVITY:	0.8	
BOILING POINT (°C):	Not available	
MELTING POINT (°C):	Not available	
SOLUBILITY IN WATER:	Insoluble	pH: Not applicable
PERCENT VOLATILE BY VOLUME:	Not available	
EVAPORATION RATE:	Not available	
VAPOUR PRESSURE (mmHg):	Not available	
VAPOUR DENSITY (air = 1):	Not available	
BULK DENSITY:	Not available	

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not applicable
FLAMMABLE LIMITS:	Not applicable
EXTINGUISHING MEDIA:	Carbon dioxide, dry chemical, foam, in preference to a water spray.
SPECIAL FIRE FIGHTING PROCEDURES:	Self contained breathing apparatus required for fire fighting personnel. Move containers from fire area if possible.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	As with most organic powders, flammable dust clouds may be formed in air. Avoid creating dust. Avoid sources of ignition.

Diversity Technologies Corp. is the parent company of
Canamara-United Supply, Hollimex Products, The Drilling Depot and
Westcoast Drilling Supplies

SECTION VII: REACTIVITY DATA

STABILITY:	STABLE [XX] UNSTABLE [ ]
INCOMPATIBILITY (CONDITIONS TO AVOID):	Avoid contact with strong oxidizers. Avoid wet, damp or humid conditions, extremes of temperature, and ignition sources.
HAZARDOUS DECOMPOSITION PRODUCTS:	Oxides of carbon and nitrogen, various hydrocarbons, and/or hydrogen cyanide upon combustion
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX] MAY OCCUR [ ]

SECTION VIII: PREVENTATIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Use approved dust mask in absence of adequate ventilation. Use approved respirators with dust cartridges if TLV is exceeded.
VENTILATION:	Use in well-ventilated area, or use local exhaust ventilation, process enclosure or other engineering controls to maintain dust level below TLV.
PROTECTIVE GLOVES:	Use gloves, if needed, to avoid prolonged or repeated skin contact.
EYE PROTECTION:	Use safety glasses or goggles.
OTHER PROTECTIVE EQUIPMENT (Specify):	As necessary to prevent contact. Ensure eyewash station and emergency shower are available.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Avoid prolonged or repeated breathing of dust and contact with skin. Remove contaminated clothing; launder or dry-clean before reuse. Cleanse skin thoroughly after contact, before breaks and meals and at end of work period. Product is readily removed from skin by washing thoroughly with soap and water. Store in a cool, dry location away from incompatibles. Store in original container.

STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED

Use appropriate safety equipment. Avoid creating dust clouds. Remove ignition sources. Sweep up or vacuum dry material and flush spill area with water. Collect uncontaminated material for repackaging. Collect contaminated material in approved containers for disposal. This product or its solutions should not be allowed to enter waterways without treatment.

WASTE DISPOSAL METHOD

Dispose in accordance with federal, provincial and local regulations. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal. It may be possible to dispose of spills of non-hazardous materials in a landfill; check with local operator.

SECTION IX: PREPARATION

THE INFORMATION CONTAINED HEREIN IS GIVEN IN GOOD FAITH, BUT NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE.

DATE ISSUED:	January 3, 2006	BY:	Product safety committee
SUPERSEDES:	March 31, 2003	PHONE:	780-440-4923

Diversity Technologies Corp. is the parent company of Canamara-United Supply, Hollimex Products, The Drilling Depot and Westcoast Drilling Supplies

Gulf Harmony AW Hydraulic 22

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name:	Gulf Harmony AW Hydraulic 22
Product Number:	334225
Synonyms:	Antiwear Hydraulic Fluid, Petroleum Based Lubricant
Chemical Name:	Hydrotreated heavy paraffinic distillate
Chemical Family:	Petroleum Distillate
CAS Number:	Blend

Company Identification

Gulf Oil LP/Nu-Tier Brands, Inc.
Tulsa, OK
TECHNICAL CONTACT NUMBER: 918-550-8026, Ext. 507
CHEMTREC: EMERGENCY CONTACT 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

Chemical Name	Amount	CAS Number
HYDROTREATED PARAFFINIC DISTILLATE, DEWAXED	> 98.0 %	64742-65-0
ADDITIVES	< 2.0 %	Blend

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

HAZARDS DISCLOSURE

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains no known hazardous materials.

3. HAZARDS IDENTIFICATION

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**********   EMERGENCY OVERVIEW   **********
*                                           *
*  Not expected to cause a severe emergency hazard.  *
*                                           *
*********************************************
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Gulf Harmony AW Hydraulic 22

Material Safety Data Sheet

HMIS Rating - Health: 1
Flammability: 1
Reactivity: 0

NFPA Rating - Health: 1
Flammability: 1
Reactivity: 0
Special Hazard: N/A

POTENTIAL HEALTH EFFECTS

EYE:
Contact may cause eye irritation and redness.

SKIN:
Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION:
Inhalation of vapors or mist may be mildly irritating to the nose, throat, and respiratory tract.

INGESTION:
Small amounts swallowed during normal handling operations are not likely to cause injury.

CHRONIC EFFECTS:
No adverse effects have been documented in humans as a result of chronic exposure.

CARCINOGENICITY INFORMATION:
Based on OSHA 1910.1200 and IARC study requirements, this product does not require labeling.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:
Flush eye with water for 15 minutes.

Get medical attention if irritation develops or persists.

SKIN CONTACT FIRST AID:
Wash skin with soap and water.

Thoroughly wash (or discard) clothing and shoes before reuse.

Gulf Harmony AW Hydraulic 22

Material Safety Data Sheet

INHALATION FIRST AID:
Remove to fresh air.

If not breathing, give artificial respiration.

INGESTION FIRST AID:
If vomiting should occur spontaneously, keep airway clear.

NOTES TO PHYSICIAN:
Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
COC Flash Point: 210° C (410.0° F)
Autoignition Temperature: > 315.6° C (> 600.1° F)

FLAMMABLE LIMITS IN AIR
LEL: N/A
UEL: N/A

EXTINGUISHING MEDIA:
Carbon dioxide, foam, or dry powder. Water may be used to cool below flash point.

FIRE FIGHTING INSTRUCTIONS:
As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

COMBUSTION PRODUCTS:
Fumes, smoke and carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):
Wear appropriate personal protective equipment.

INITIAL CONTAINMENT:
Absorb spills with inert material.

LARGE SPILLS PROCEDURE:
Contain spilled material.

Large spillage should be dammed-off and pumped into containers.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Gulf Harmony AW Hydraulic 22

Material Safety Data Sheet

SMALL SPILLS PROCEDURE:
Clean up area by absorbent material.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):
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.

Wash hands thoroughly after handling.

HANDLING (PHYSICAL ASPECTS):
Store in a cool dry area.

Keep container closed to avoid contamination.

STORAGE PRECAUTIONS:
Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical ventilation to maintain exposure below PEL/TLV (s).

EYE / FACE PROTECTION REQUIREMENTS:
Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:
When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

RESPIRATORY PROTECTION REQUIREMENTS:
When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EXPOSURE GUIDELINES:
No Information Available.

Gulf Harmony AW Hydraulic 22

Material Safety Data Sheet

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM	Liquid
COLOR	Amber
ODOR	Characteristic
BOILING POINT	>425° F
VAPOR PRESSURE	Nil mm Hg
VAPOR DENSITY	>1 (Air = 1)
SOLUBILITY IN WATER	Nil
SPECIFIC GRAVITY	Not Determined (Water = 1)
MELTING/FREEZING POINT	N/A °F
% VOLATILES	Nil %
VISCOSITY	22 cSt at 40 Deg C

10. STABILITY AND REACTIVITY

STABILITY:
Stable.

POLYMERIZATION:
Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS:
Avoid contact with strong oxidizing agents.

DECOMPOSITION:
In the case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
Minimal irritation on contact.

SKIN EFFECTS:
Practically non-toxic if absorbed. May cause mild irritation with prolonged and repeated exposure.

ACUTE ORAL EFFECTS:
Tests on similar materials indicate low order of acute oral toxicity.

ACUTE INHALATION EFFECTS:
Low acute toxicity expected on inhalation.

MISCELLANEOUS:
Please contact supplier for additional toxicological information.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:
Ecotoxicological Information: No specific aquatic data available for this product.

Gulf Harmony AW Hydraulic 22

Material Safety Data Sheet

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Do not flush to surface water or sanitary sewer system.

CONTAINER DISPOSAL:
Empty drums should be completely drained, properly bunged and promptly shipped to the supplier or a drum reconditioner.

All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....: Gulf Harmony AW Hydraulic 22
D.O.T. SHIPPING NAME ...: Not regulated by DOT

15. REGULATORY INFORMATION

MISCELLANEOUS INFORMATION:
This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

16. OTHER INFORMATION

REASON FOR ISSUE ...: NEW
APPROVAL DATE .....: May 9, 2011
SUPERCEDES DATE ....:
RTN NUMBER .....:

ADDITIONAL INFORMATION:
The data in this Material Safety Data Sheet relates only to the specific material designated herein.

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END OF MSDS

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Gulf Harmony AW Hydraulic 32

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: Gulf Harmony AW Hydraulic 32
Product Number: 334227
Synonyms: Antiwear Hydraulic Fluid, Petroleum Based Lubricant
Chemical Name: Hydrotreated heavy paraffinic distillate
Chemical Family: Petroleum Distillate
CAS Number: Blend

Company Identification

Gulf Oil LP/Nu-Tier Brands, Inc.
Tulsa, OK
TECHNICAL CONTACT NUMBER: 918-550-8026, Ext. 507
CHEMTREC: EMERGENCY CONTACT 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

Chemical Name	Amount	CAS Number
HYDROTREATED PARAFFINIC DISTILLATE, DEWAXED	> 98.0 %	64742-65-0
ADDITIVES	< 2.0 %	Blend

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

HAZARDS DISCLOSURE

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains no known hazardous materials.

3. HAZARDS IDENTIFICATION

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**********   EMERGENCY OVERVIEW   **********
*                                           *
*  Not expected to cause a severe emergency hazard.  *
*                                           *
*********************************************
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Gulf Harmony AW Hydraulic 32

Material Safety Data Sheet

HMIS Rating - Health: 1
Flammability: 1
Reactivity: 0

NFPA Rating - Health: 1
Flammability: 1
Reactivity: 0
Special Hazard: N/A

POTENTIAL HEALTH EFFECTS

EYE:
Contact may cause eye irritation and redness.

SKIN:
Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION:
Inhalation of vapors or mist may be mildly irritating to the nose, throat, and respiratory tract.

INGESTION:
Small amounts swallowed during normal handling operations are not likely to cause injury.

CHRONIC EFFECTS:
No adverse effects have been documented in humans as a result of chronic exposure.

CARCINOGENICITY INFORMATION:
Based on OSHA 1910.1200 and IARC study requirements, this product does not require labeling.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:
Flush eye with water for 15 minutes.

Get medical attention if irritation develops or persists.

SKIN CONTACT FIRST AID:
Wash skin with soap and water.

Thoroughly wash (or discard) clothing and shoes before reuse.

Gulf Harmony AW Hydraulic 32

Material Safety Data Sheet

INHALATION FIRST AID:
Remove to fresh air.

If not breathing, give artificial respiration.

INGESTION FIRST AID:
If vomiting should occur spontaneously, keep airway clear.

NOTES TO PHYSICIAN:
Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
COC Flash Point: 215.8° C (420.5° F)
Autoignition Temperature: > 315.6° C (> 600.1° F)

FLAMMABLE LIMITS IN AIR
LEL: N/A
UEL: N/A

EXTINGUISHING MEDIA:
Carbon dioxide, foam, or dry powder. Water may be used to cool below flash point.

FIRE FIGHTING INSTRUCTIONS:
As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

COMBUSTION PRODUCTS:
Fumes, smoke and carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):
Wear appropriate personal protective equipment.

INITIAL CONTAINMENT:
Absorb spills with inert material.

LARGE SPILLS PROCEDURE:
Contain spilled material.

Large spillage should be dammed-off and pumped into containers.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Gulf Harmony AW Hydraulic 32

Material Safety Data Sheet

SMALL SPILLS PROCEDURE:
Clean up area by absorbent material.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):
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.

Wash hands thoroughly after handling.

HANDLING (PHYSICAL ASPECTS):
Store in a cool dry area.

Keep container closed to avoid contamination.

STORAGE PRECAUTIONS:
Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical ventilation to maintain exposure below PEL/TLV (s).

EYE / FACE PROTECTION REQUIREMENTS:
Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:
When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

RESPIRATORY PROTECTION REQUIREMENTS:
When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EXPOSURE GUIDELINES:
No Information Available.

Gulf Harmony AW Hydraulic 32

Material Safety Data Sheet

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM	Liquid
COLOR	Amber
ODOR	Characteristic
BOILING POINT	>425 F
VAPOR PRESSURE	Nil mm Hg
VAPOR DENSITY	>1 (Air = 1)
SOLUBILITY IN WATER	Nil
SPECIFIC GRAVITY	0.861 at 60 deg F (Water = 1)
BULK DENSITY	7.17 Pounds per Gallon at 60 Deg F
MELTING/FREEZING POINT	N/A F
% VOLATILES	Nil %
VISCOSITY	32 cSt at 40 Deg C

10. STABILITY AND REACTIVITY

STABILITY:
Stable.

POLYMERIZATION:
Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS:
Avoid contact with strong oxidizing agents.

DECOMPOSITION:
In the case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
Minimal irritation on contact.

SKIN EFFECTS:
Practically non-toxic if absorbed. May cause mild irritation with prolonged and repeated exposure.

ACUTE ORAL EFFECTS:
Tests on similar materials indicate low order of acute oral toxicity.

ACUTE INHALATION EFFECTS:
Low acute toxicity expected on inhalation.

MISCELLANEOUS:
Please contact supplier for additional toxicological information.

Gulf Harmony AW Hydraulic 32

Material Safety Data Sheet

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:
Ecotoxicological Information: No specific aquatic data available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Do not flush to surface water or sanitary sewer system.

CONTAINER DISPOSAL:
Empty drums should be completely drained, properly bunged and promptly shipped to the supplier or a drum reconditioner.

All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....: Gulf Harmony AW Hydraulic 32
D.O.T. SHIPPING NAME ...: Not regulated by DOT

15. REGULATORY INFORMATION

MISCELLANEOUS INFORMATION:
This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

16. OTHER INFORMATION

REASON FOR ISSUE ...: NEW
APPROVAL DATE .....: May 9, 2011
SUPERCEDES DATE ....:
RTN NUMBER .....:
ADDITIONAL INFORMATION:
The data in this Material Safety Data Sheet relates only to the specific material designated herein.

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END OF MSDS

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Gulf Harmony AW Hydraulic 46

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: Gulf Harmony AW Hydraulic 46
Product Number: 334229
Synonyms: Antiwear Hydraulic Fluid, Petroleum Based Lubricant
Chemical Name: Hydrotreated heavy paraffinic distillate
Chemical Family: Petroleum Distillate
CAS Number: Blend

Company Identification

Gulf Oil LP/Nu-Tier Brands, Inc.
Tulsa, OK
TECHNICAL CONTACT NUMBER: 918-550-8026, Ext. 507
CHEMTREC: EMERGENCY CONTACT 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

Chemical Name	Amount	CAS Number
HYDROTREATED PARAFFINIC DISTILLATE, DEWAXED	> 98.0 %	64742-65-0
ADDITIVES	< 2.0 %	Blend

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

HAZARDS DISCLOSURE

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains no known hazardous materials.

3. HAZARDS IDENTIFICATION

********** EMERGENCY OVERVIEW **********
*
* Not expected to cause a severe emergency hazard.
*
****

Gulf Harmony AW Hydraulic 46

Material Safety Data Sheet

HMIS Rating - Health: 1
Flammability: 1
Reactivity: 0

NFPA Rating - Health: 1
Flammability: 1
Reactivity: 0
Special Hazard: N/A

POTENTIAL HEALTH EFFECTS

EYE:
Contact may cause eye irritation and redness.

SKIN:
Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION:
Inhalation of vapors or mist may be mildly irritating to the nose, throat, and respiratory tract.

INGESTION:
Small amounts swallowed during normal handling operations are not likely to cause injury.

CHRONIC EFFECTS:
No adverse effects have been documented in humans as a result of chronic exposure.

CARCINOGENICITY INFORMATION:
Based on OSHA 1910.1200 and IARC study requirements, this product does not require labeling.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:
Flush eye with water for 15 minutes.

Get medical attention if irritation develops or persists.

SKIN CONTACT FIRST AID:
Wash skin with soap and water.

Thoroughly wash (or discard) clothing and shoes before reuse.

Gulf Harmony AW Hydraulic 46

Material Safety Data Sheet

INHALATION FIRST AID:
Remove to fresh air.

If not breathing, give artificial respiration.

INGESTION FIRST AID:
If vomiting should occur spontaneously, keep airway clear.

NOTES TO PHYSICIAN:
Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
COC Flash Point: 221° C (430° F)
Autoignition Temperature: > 315.6° C (> 600.1° F)

FLAMMABLE LIMITS IN AIR
LEL: N/A
UEL: N/A

EXTINGUISHING MEDIA:
Carbon dioxide, foam, or dry powder. Water may be used to cool below flash point.

FIRE FIGHTING INSTRUCTIONS:
As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

COMBUSTION PRODUCTS:
Fumes, smoke and carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):
Wear appropriate personal protective equipment.

INITIAL CONTAINMENT:
Absorb spills with inert material.

LARGE SPILLS PROCEDURE:
Contain spilled material.

Large spillage should be dammed-off and pumped into containers.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Gulf Harmony AW Hydraulic 46

Material Safety Data Sheet

SMALL SPILLS PROCEDURE:
Clean up area by absorbent material.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):
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.

Wash hands thoroughly after handling.

HANDLING (PHYSICAL ASPECTS):
Store in a cool dry area.

Keep container closed to avoid contamination.

STORAGE PRECAUTIONS:
Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical ventilation to maintain exposure below PEL/TLV (s).

EYE / FACE PROTECTION REQUIREMENTS:
Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:
When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

RESPIRATORY PROTECTION REQUIREMENTS:
When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EXPOSURE GUIDELINES:
No Information Available.

Gulf Harmony AW Hydraulic 46

Material Safety Data Sheet

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM	Liquid
COLOR	Amber
ODOR	Characteristic
BOILING POINT	>425° F
VAPOR PRESSURE	Nil mm Hg
VAPOR DENSITY	>1 (Air = 1)
SOLUBILITY IN WATER	Nil
SPECIFIC GRAVITY	Not Determined (Water = 1)
MELTING/FREEZING POINT ...	N/A °F
% VOLATILES	Nil %
VISCOSITY	46 cSt at 40 Deg C

10. STABILITY AND REACTIVITY

STABILITY:
Stable.

POLYMERIZATION:
Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS:
Avoid contact with strong oxidizing agents.

DECOMPOSITION:
In the case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
Minimal irritation on contact.

SKIN EFFECTS:
Practically non-toxic if absorbed. May cause mild irritation with prolonged and repeated exposure.

ACUTE ORAL EFFECTS:
Tests on similar materials indicate low order of acute oral toxicity.

ACUTE INHALATION EFFECTS:
Low acute toxicity expected on inhalation.

MISCELLANEOUS:
Please contact supplier for additional toxicological information.

Gulf Harmony AW Hydraulic 46

Material Safety Data Sheet

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:
Ecotoxicological Information: No specific aquatic data available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Do not flush to surface water or sanitary sewer system.

CONTAINER DISPOSAL:
Empty drums should be completely drained, properly bunged and promptly shipped to the supplier or a drum reconditioner.

All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....: Gulf Harmony AW Hydraulic 46
D.O.T. SHIPPING NAME ...: Not regulated by DOT

15. REGULATORY INFORMATION

MISCELLANEOUS INFORMATION:
This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

16. OTHER INFORMATION

REASON FOR ISSUE ...: NEW
APPROVAL DATE .....: May 9, 2011
SUPERCEDES DATE ....:
RTN NUMBER .....:

ADDITIONAL INFORMATION:
The data in this Material Safety Data Sheet relates only to the specific material designated herein.

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END OF MSDS

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Gulf Harmony AW Hydraulic 68

Material Safety Data Sheet

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identification

Product Name: Gulf Harmony AW Hydraulic 68
Product Number: 334231
Synonyms: Antiwear Hydraulic Fluid, Petroleum Based Lubricant
Chemical Name: Hydrotreated heavy paraffinic distillate
Chemical Family: Petroleum Distillate
CAS Number: Blend

Company Identification

Gulf Oil LP/Nu-Tier Brands, Inc.
Tulsa, OK
TECHNICAL CONTACT NUMBER: 918-550-8026, Ext. 507
CHEMTREC: EMERGENCY CONTACT 1-800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT LISTING:

Chemical Name	Amount	CAS Number
HYDROTREATED PARAFFINIC DISTILLATE, DEWAXED	> 98.0 %	64742-65-0
ADDITIVES	< 2.0 %	Blend

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

HAZARDS DISCLOSURE

This product contains no known hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.

As defined under Sara 311 and 312, this product contains no known hazardous materials.

3. HAZARDS IDENTIFICATION

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**********   EMERGENCY OVERVIEW   **********
*                                           *
*  Not expected to cause a severe emergency hazard.  *
*                                           *
*********************************************
```

Gulf Harmony AW Hydraulic 68

Material Safety Data Sheet

HMIS Rating - Health: 1
Flammability: 1
Reactivity: 0

NFPA Rating - Health: 1
Flammability: 1
Reactivity: 0
Special Hazard: N/A

POTENTIAL HEALTH EFFECTS

EYE:
Contact may cause eye irritation and redness.

SKIN:
Prolonged or repeated contact can result in defatting and drying of the skin which may result in skin irritation and dermatitis (rash).

INHALATION:
Inhalation of vapors or mist may be mildly irritating to the nose, throat, and respiratory tract.

INGESTION:
Small amounts swallowed during normal handling operations are not likely to cause injury.

CHRONIC EFFECTS:
No adverse effects have been documented in humans as a result of chronic exposure.

CARCINOGENICITY INFORMATION:
Based on OSHA 1910.1200 and IARC study requirements, this product does not require labeling.

4. FIRST AID MEASURES

EYE CONTACT FIRST AID:
Flush eye with water for 15 minutes.

Get medical attention if irritation develops or persists.

SKIN CONTACT FIRST AID:
Wash skin with soap and water.

Thoroughly wash (or discard) clothing and shoes before reuse.

Gulf Harmony AW Hydraulic 68

Material Safety Data Sheet

INHALATION FIRST AID:
Remove to fresh air.

If not breathing, give artificial respiration.

INGESTION FIRST AID:
If vomiting should occur spontaneously, keep airway clear.

NOTES TO PHYSICIAN:
Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES
COC Flash Point: 232° C (450° F)
Autoignition Temperature: > 315.6° C (> 600.1° F)

FLAMMABLE LIMITS IN AIR
LEL: N/A
UEL: N/A

EXTINGUISHING MEDIA:
Carbon dioxide, foam, or dry powder. Water may be used to cool below flash point.

FIRE FIGHTING INSTRUCTIONS:
As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

COMBUSTION PRODUCTS:
Fumes, smoke and carbon monoxide.

6. ACCIDENTAL RELEASE MEASURES

SAFEGUARDS (PERSONNEL):
Wear appropriate personal protective equipment.

INITIAL CONTAINMENT:
Absorb spills with inert material.

LARGE SPILLS PROCEDURE:
Contain spilled material.

Large spillage should be dammed-off and pumped into containers.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Gulf Harmony AW Hydraulic 68

Material Safety Data Sheet

SMALL SPILLS PROCEDURE:
Clean up area by absorbent material.

Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

7. HANDLING AND STORAGE

HANDLING (PERSONNEL):
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.

Wash hands thoroughly after handling.

HANDLING (PHYSICAL ASPECTS):
Store in a cool dry area.

Keep container closed to avoid contamination.

STORAGE PRECAUTIONS:
Keep container closed when not in use.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS:
Not required under normal conditions of use. However, if unusual operating conditions exist, then provide sufficient mechanical ventilation to maintain exposure below PEL/TLV (s).

EYE / FACE PROTECTION REQUIREMENTS:
Where contact with this material is likely, eye protection is recommended.

SKIN PROTECTION REQUIREMENTS:
When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material.

RESPIRATORY PROTECTION REQUIREMENTS:
When there is potential for airborne exposures in excess of applicable limits, wear NIOSH/MSHA approved respiratory protection.

EXPOSURE GUIDELINES:
No Information Available.

Gulf Harmony AW Hydraulic 68

Material Safety Data Sheet

9. PHYSICAL AND CHEMICAL PROPERTIES

FORM	Liquid
COLOR	Amber
ODOR	Characteristic
BOILING POINT	>425° F
VAPOR PRESSURE	Nil mm Hg
VAPOR DENSITY	>1 (Air = 1)
SOLUBILITY IN WATER	Nil
SPECIFIC GRAVITY	Not Determined (Water = 1)
MELTING/FREEZING POINT ...	N/A °F
% VOLATILES	Nil %
VISCOSITY	68 cSt at 40 Deg C

10. STABILITY AND REACTIVITY

STABILITY:
Stable.

POLYMERIZATION:
Hazardous polymerization will not occur.

INCOMPATIBILITY WITH OTHER MATERIALS:
Avoid contact with strong oxidizing agents.

DECOMPOSITION:
In the case of a fire, oxides of carbon, hydrocarbons, fumes, and smoke may be produced.

11. TOXICOLOGICAL INFORMATION

EYE EFFECTS:
Minimal irritation on contact.

SKIN EFFECTS:
Practically non-toxic if absorbed. May cause mild irritation with prolonged and repeated exposure.

ACUTE ORAL EFFECTS:
Tests on similar materials indicate low order of acute oral toxicity.

ACUTE INHALATION EFFECTS:
Low acute toxicity expected on inhalation.

MISCELLANEOUS:
Please contact supplier for additional toxicological information.

Gulf Harmony AW Hydraulic 68

Material Safety Data Sheet

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL HAZARDS:
Ecotoxicological Information: No specific aquatic data available for this product.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:
Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements.

Do not flush to surface water or sanitary sewer system.

CONTAINER DISPOSAL:
Empty drums should be completely drained, properly bunged and promptly shipped to the supplier or a drum reconditioner.

All other containers should be disposed of in an environmentally safe manner.

14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....: Gulf Harmony AW Hydraulic 68
D.O.T. SHIPPING NAME ...: Not regulated by DOT

15. REGULATORY INFORMATION

MISCELLANEOUS INFORMATION:
This material or all of its components are listed on the Inventory of Existing Chemical Substances under the Toxic Substance Control Act (TSCA).

16. OTHER INFORMATION

REASON FOR ISSUE ...: NEW
APPROVAL DATE .....: May 9, 2011
SUPERCEDES DATE ....:
RTN NUMBER .....:

ADDITIONAL INFORMATION:
The data in this Material Safety Data Sheet relates only to the specific material designated herein.

****

This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Gulf Oil LP. The data on this sheet are related only to the specific material designated herein. Gulf Oil LP assumes no legal responsibility for use or reliance upon these data.

****

END OF MSDS

****

Material Safety Data Sheet

JET A/A-1 AVIATION TURBINE FUEL

PETRO-CANADA

1 . Product and company identification

Product name	:	JET A/A-1 AVIATION TURBINE FUEL
Synonym	:	Jet A-1; Jet A-1-DI; Aviation Turbine Kerosene (ATK); JP-8; NATO F-34; Jet F-34; Turbine Fuel, Aviation, Kerosene Type (CAN/CGSB-3.32)
Code	:	W213, SAP: 149
Material uses	:	Used as aviation turbine fuel. May contain a fuel system icing inhibitor. In the arctic, Jet A-1 may also be used as diesel fuel (if it contains a lubricity additive) and heating oil.
Manufacturer	:	PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
In case of emergency	:	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state	:	Clear liquid.
Odour	:	Kerosene-like.
WHMIS (Canada)	:	 Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F). Class D-2A: Material causing other toxic effects (Very toxic). **The WHMIS classification of Jet A/A-1 is B3.** **The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.**
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	:	CAUTION! COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA. Combustible liquid. Slightly irritating to the eyes and skin. Keep away from heat, sparks and flame. Avoid exposure - obtain special instructions before use. Do not breathe vapour or mist. Avoid contact with eyes, skin and clothing. Contains material which may cause birth defects, based on animal data. Avoid exposure during pregnancy. Use only with adequate ventilation. Wash thoroughly after handling.
Routes of entry	:	Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Inhalation	:	Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
Ingestion	:	Ingestion of this product may cause gastro-intestinal irritation. Aspiration of this product may result in severe irritation or burns to the respiratory tract.
Skin	:	Slightly irritating to the skin.
Eyes	:	Slightly irritating to the eyes.

Potential chronic health effects

Chronic effects	:	No known significant effects or critical hazards.

2. Hazards identification

Carcinogenicity	: No known significant effects or critical hazards.
Mutagenicity	: No known significant effects or critical hazards.
Teratogenicity	: Contains material which may cause birth defects, based on animal data.
Developmental effects	: No known significant effects or critical hazards.
Fertility effects	: No known significant effects or critical hazards.
Medical conditions aggravated by over-exposure	: Repeated skin exposure can produce local skin destruction or dermatitis.

See toxicological information (Section 11)

3. Composition/information on ingredients

Name	CAS number	%
Complex mixture of petroleum hydrocarbons (C9-C16)*(Kerosene)	8008-20-6	99.9
Fuel System Icing Inhibitor (FSII) (if added**): (Diethylene Glycol Monomethyl Ether)	111-77-3	0.1 - 0.15
Anti-static, antioxidant and metal deactivator additives	Not applicable	<0.1

*Aromatic content is 25% maximum (benzene: nil).
**Please note that Jet A-1-DI, JP-8, Jet F-34 and NATO F-34 all contain Fuel System Icing Inhibitor.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First-aid measures

Eye contact	: Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.
Skin contact	: In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognised skin cleanser. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.
Inhalation	: Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.
Ingestion	: Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Protection of first-aiders	: No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
Notes to physician	: No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product	: Class II - combustible liquid (NFPA).
Extinguishing media	
Suitable	: Use dry chemical, CO_2, water spray (fog) or foam.
Not suitable	: Do not use water jet.
Special exposure hazards	: Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

5 . Fire-fighting measures

Products of combustion : Carbon oxides (CO, CO2), nitrogen oxides (NOx), sulphur oxides (SOx), smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Special remarks on fire hazards : Flammable in presence of open flames, sparks and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. This product can accumulate static charge and ignite. May accumulate in confined spaces.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire.

6 . Accidental release measures

Personal precautions : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Use spark-proof tools and explosion-proof equipment. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Avoid exposure during pregnancy. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

7 . Handling and storage

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Kerosene	**ACGIH TLV (United States). Absorbed through skin.** TWA: 200 mg/m³ 8 hour(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: A NIOSH-approved air-purifying respirator with an organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: polyvinyl alcohol (PVA), Viton®. Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

8 . Exposure controls/personal protection

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Clear liquid.

Flash point : Closed cup: ≥38°C (≥100.4°F) [Tag. Closed Cup]

Auto-ignition temperature : 210°C (410°F)

Flammable limits : Lower: 0.7%
Upper: 5%

Colour : Clear and colourless.

Odour : Kerosene-like.

Odour threshold : Not available.

pH : Not available.

Boiling/condensation point : 140 to 300°C (284 to 572°F)

Melting/freezing point : Not available.

Relative density : 0.775 to 0.84 (Water=1)

Vapour pressure : 0.7 kPa (5.25 mm Hg) @ 20°C (68°F).

Vapour density : 4.5 [Air = 1]

Volatility : Volatile.

Evaporation rate : Not available.

Viscosity : 1.0 - 1.9 cSt @ 40°C (104°F)

Pour point : <-51°C (<-60°F)

Solubility : Insoluble in water. Partially miscible in some alcohols. Miscible with other petroleum solvents.

10 . Stability and reactivity

Chemical stability : The product is stable.

Hazardous polymerisation : Under normal conditions of storage and use, hazardous polymerisation will not occur.

Materials to avoid : Reactive with oxidising agents, acids and alkalis.

Hazardous decomposition products : May release COx, NOx, SOx, aldehydes, acids, ketones, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Kerosene	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LC50 Inhalation Vapour	Rat	>5000 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

11 . Toxicological information

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Kerosene	A3	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1863	FUEL, AVIATION, TURBINE ENGINE	3	III		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Combustible liquid

Canada

WHMIS (Canada) : Class B-3: Combustible liquid with a flash point between 37.8°C (100°F) and 93.3°C (200°F).
Class D-2A: Material causing other toxic effects (Very toxic).

The WHMIS classification of Jet A/A-1 is B3.
The WHMIS classification of Jet A/A-1-DI, JP-8, Jet F-34 and NATO F-34, which all contain FSII (Diethylene Glycol Monomethyl Ether), is B3, D2A.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : COMBUSTIBLE LIQUID AND VAPOUR. MAY CAUSE EYE AND SKIN IRRITATION. POSSIBLE BIRTH DEFECT HAZARD - CONTAINS MATERIAL WHICH MAY CAUSE BIRTH DEFECTS, BASED ON ANIMAL DATA.

Hazardous Material Information System (U.S.A.) :

National Fire Protection Association (U.S.A.) :

References : Available upon request.
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Date of printing : **5/24/2012.**

Date of issue : 24 May 2012

Date of previous issue : 5/24/2012.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

16 . Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

DICORP
DOWN TO EARTH BUSINESS

MATERIAL SAFETY DATA SHEET

LINSEED SOAP

SECTION I: IDENTIFICATION OF PRODUCT

COMPANY:	**Diversity Technologies Corp.** **8750 – 53rd Ave.** **Edmonton, AB T6E 5G2**	DATE: PHONE: FAX:	**November 22, 2011** **780-440-4923** **780-469-1899**

PRODUCT NAME: **LINSEED SOAP**

PRODUCT USE: **Lubricant.**
CHEMICAL FAMILY: Fatty acids. CAS#: Not available

WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS)

WHMIS CLASSIFICATION: Not WHMIS controlled.
WORKPLACE HAZARD: Not applicable

TRANSPORTATION OF DANGEROUS GOODS (TDG)

PROPER SHIPPING NAME: Not regulated under TDG
TDG CLASSIFICATION: Not applicable
UN NUMBER (PIN): Not applicable
PACKING GROUP: Not applicable

SECTION II: HAZARDOUS INGREDIENTS

INGREDIENT	PERCENT	CAS NUMBER	LD_{50} Oral-Rat	LC_{50} Inhal-Mouse	ACGIH-TLV
No hazardous ingredients available.					

SECTION III: HEALTH HAZARDS

ROUTE OF ENTRY:	[ ] EYE CONTACT [ ] SKIN [ ] INHALATION [ ] INGESTION
EYE CONTACT:	May cause slight irritation.
SKIN CONTACT:	May cause slight irritation.
INGESTION:	No information available. Not considered toxic based on information available for similar materials.
INHALATION:	Not a likely source of contact during normal use.
CARCINOGENICITY:	No information available.
TERATOGENICITY:	No information available.
REPRODUCTIVE TOXICITY:	No information available.
MUTAGENICITY:	No information available.
SYNERGISTIC PRODUCTS:	No information available.

DICORP
DOWN TO EARTH BUSINESS

MATERIAL SAFETY DATA SHEET

LINSEED SOAP

SECTION IV: FIRST AID MEASURES

SKIN CONTACT:	Wipe away excess. Remove contaminated clothing and wash affected area thoroughly with soap and water. If irritation develops or persists, obtain medical attention.
EYE CONTACT:	Immediately flush with gently flowing warm water until material is removed and irritation ceases. If irritation persists, obtain medical attention.
INGESTION:	If conscious give 1 to 2 glasses of water and induce vomiting; keep head below hips to prevent aspiration of vomitus. Obtain medical attention. Never give anything by mouth if patient is unconscious, rapidly losing consciousness or convulsing.
INHALATION:	Move to fresh air. Apply oxygen or artificial respiration if required. If breathing difficulties, or distress, continue obtain medical attention.

SECTION V: PHYSICAL DATA

APPEARANCE AND ODOUR:	Brown paste; slight soapy odour	
SPECIFIC GRAVITY:	Not applicable	
BOILING POINT (°C):	100	
MELTING POINT (°C):	0	
SOLUBILITY IN WATER:	Soluble	pH: 9.5 – 11.5
PERCENT VOLATILE BY VOLUME:	Not applicable	
EVAPORATION RATE:	Not applicable	
VAPOUR PRESSURE (mmHg):	Not applicable	
VAPOUR DENSITY (air = 1):	Not applicable	
BULK DENSITY	Not applicable	

SECTION VI: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:	Not flammable
FLAMMABLE LIMITS:	Not applicable
EXTINGUISHING MEDIA:	Use media suitable for packaging and surrounding materials.
SPECIAL FIRE FIGHTING PROCEDURES:	Self-contained breathing apparatus required for fire fighting personnel.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	None known.

SECTION VII: REACTIVITY DATA

STABILITY:	STABLE [XX]	UNSTABLE [ ]

INCOMPATIBILITY (CONDITIONS TO AVOID):	None known.	
CONDITIONS OF REACTIVITY:	None known.	
HAZARDOUS DECOMPOSITION PRODUCTS:	Not determined.	
HAZARDOUS POLYMERIZATION:	WILL NOT OCCUR [XX]	MAY OCCUR [ ]

SECTION VIII: PREVENTATIVE MEASURES

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION:	Not applicable.
VENTILATION:	Not applicable.
PROTECTIVE GLOVES:	Personal preference.
EYE PROTECTION:	Safety glasses with side-shields recommended.
OTHER PROTECTIVE EQUIPMENT (Specify):	Wear clothing adequate to protect against exposure. Ensure eye-wash station and emergency shower are available.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING

Wash thoroughly after handling. Avoid contact with eyes, skin or clothing. Launder contaminated clothing before reuse. No specific storage requirements.

STEPS TO BE TAKEN IN CASE THE MATERIAL IS SPILLED OR RELEASED

Use appropriate safety equipment. Scoop up excess material. Collect uncontaminated material for repackaging. Collect contaminated material in approved containers for disposal. Wipe up remaining spill with absorbent compound to prevent slipping hazard.

WASTE DISPOSAL METHOD

Dispose in accordance with federal, provincial and local regulations. This material can be landfilled in most areas; check with local operator. It is the responsibility of the end-user to determine if material meets the criteria of hazardous waste at the time of disposal.

SECTION IX: PREPARATION

The information contains herein is given in good faith, but no warranty, expressed or implied, is made.

DATE ISSUED:	Nov. 22, 2011
SUPERSEDES:	Dec. 9, 2008
BY:	780-440-4923
PHONE:	Regulatory Affairs

Material Safety Data Sheet

PROPANE

PETRO-CANADA

1 . Product and company identification

Product name	:	PROPANE
Synonym	:	Propane HD-5, Propane commercial, Liquified Petroleum Gas (LPG), C3H8, CGSB Propane Grade 1, CGSB Propane Grade 2, odourized propane, stenched propane, automotive propane.
Code	:	W222
Material uses	:	Propane is used as a fuel gas, refrigerant and as a raw material for organic synthesis. It is also used as a laboratory gas. The grade determines the propane content. It is supplied as pressurized liquid in tanks.
Manufacturer	:	PETRO-CANADA P.O. Box 2844 150 – 6th Avenue South-West Calgary, Alberta T2P 3E3
In case of emergency	:	Petro-Canada: 403-296-3000 Canutec Transportation: 613-996-6666 Poison Control Centre: Consult local telephone directory for emergency number(s).

2 . Hazards identification

Physical state	:	Gas at room temperature; liquid when stored under pressure.
Odour	:	Propane is an odourless gas. Odourized propane will contain up to 28 g Ethyl Mercaptan per 1000 L of propane.
WHMIS (Canada)	:	 Class A: Compressed gas. Class B-1: Flammable gas.
OSHA/HCS status	:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Emergency overview	:	CAUTION! EXTREMELY FLAMMABLE GAS. MAY CAUSE FLASH FIRE. HIGH PRESSURE GAS. Contains gas under pressure. Extremely flammable gas. In a fire or if heated, a pressure increase will occur and the container may burst or explode. Keep away from heat, sparks and flame. Do not puncture or incinerate container. Avoid breathing gas. Avoid contact with skin and clothing. Use only with adequate ventilation. Keep container tightly closed and sealed until ready for use. At high concentrations, this product can displace oxygen and cause asphyxiation therefore a minimum requirement of 19.5 % oxygen at sea level is recommended.
Routes of entry	:	Dermal contact. Eye contact. Inhalation.

Potential acute health effects

Inhalation	:	Inhalation of this product may cause respiratory tract irritation and Central Nervous System (CNS) Depression, symptoms of which may include; weakness, dizziness, slurred speech, drowsiness, unconsciousness and in cases of severe overexposure; coma and death.
Ingestion	:	As this product is a gas, refer to the inhalation section.
Skin	:	Contact with rapidly expanding gas may cause burns or frostbite.
Eyes	:	Contact with rapidly expanding gas may cause burns or frostbite.

Potential chronic health effects

Chronic effects	:	No known significant effects or critical hazards.
Carcinogenicity	:	Not listed as carcinogenic by OSHA, NTP or IARC.
Mutagenicity	:	No known significant effects or critical hazards.
Teratogenicity	:	No known significant effects or critical hazards.

2 . Hazards identification

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Medical conditions aggravated by over-exposure : Overexposure may lead to cardiac sensitization.

See toxicological information (Section 11)

3 . Composition/information on ingredients

Name	CAS number	%
Propane	74-98-6	90 - 100
Propene	115-07-1	1 - 5
Butane	106-97-8	1 - 5
Ethane	74-84-0	1 - 2.5

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4 . First-aid measures

Eye contact : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention immediately.

Skin contact : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. To avoid the risk of static discharges and gas ignition, soak contaminated clothing thoroughly with water before removing it. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention immediately.

Inhalation : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Ingestion : As this product is a gas, refer to the inhalation section.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

Notes to physician : No specific treatment. Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5 . Fire-fighting measures

Flammability of the product : Class I - flammable gas (NFPA).

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. If involved in fire, shut off flow immediately if it can be done without risk. If this is impossible, withdraw from area and allow fire to burn. Fight fire from protected location or maximum possible distance.

Products of combustion : Carbon oxides (CO, CO2), smoke and irritating vapours as products of incomplete combustion.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

5 . Fire-fighting measures

Special remarks on fire hazards : Extremely flammable in presence of open flames, sparks, and heat. Vapours are heavier than air and may travel considerable distance to sources of ignition and flash back. Rapid escape of vapour may generate static charge causing ignition. May accumulate in confined spaces.

Special remarks on explosion hazards : Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Containers may explode in heat of fire. Vapour explosion hazard indoors, outdoors or in sewers. Propane may form explosive mixtures with air.

6 . Accidental release measures

Personal precautions : Accidental releases pose a serious fire or explosion hazard. Immediately contact emergency personnel. No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods for cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment. Note: see section 1 for emergency contact information and section 13 for waste disposal.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use non-sparking tools. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Ensure all equipment is grounded/bonded.

SPECIAL PRECAUTIONS: Sludges and tank scale from petroleum storage tanks, trucks, rail cars, and filters/screens may contain naturally occurring radioactive material ("NORM") in the form of radon 226 and it's progeny including lead 210. Similarly, equipment used for the transfer of petroleum product such as pipelines, pumps and compressors, may have detectable levels of radioactive lead on inner surfaces. Workers involved in cleaning, descaling, repair or other maintenance on inner surfaces of such equipment should avoid breathing and ingesting of dust generated from such activities. Similarly, gas freeing of pipelines, pumps, vessels and compressors may put workers are risk of inhalation of radon gas. Suitable codes of practice should be developed for these activities, detailing appropriate occupational hygiene, personal protective equipment and disposal practices.

Storage : Store in accordance with local regulations. Store in a segregated and approved area. Store in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Keep container tightly closed and sealed until ready for use. Ensure the storage containers are grounded/bonded.

8 . Exposure controls/personal protection

Ingredient	Exposure limits
Propane	**ACGIH TLV (United States).** TWA: 1000 ppm 8 hour(s).
Propene	**ACGIH TLV (United States).** TWA: 500 ppm 8 hour(s).
Butane	**ACGIH TLV (United States).** TWA: 1000 ppm 8 hour(s).
Ethane	**ACGIH TLV (United States).** TWA: 1000 ppm 8 hour(s).

Consult local authorities for acceptable exposure limits.

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Engineering measures : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Respiratory : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator. Recommended: NIOSH-approved self-contained breathing apparatus.

Hands : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Recommended: Wear insulated gloves to prevent frostbite.

Eyes : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.

Skin : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state : Gas at room temperature; liquid when stored under pressure.

Flash point : Closed cup: -104°C (-155.2°F)

Auto-ignition temperature : 450°C (842°F) (NFPA)

Flammable limits : Lower: 2.1% (NFPA)
Upper: 9.5% (NFPA)

Colour : Colourless.

Odour : Propane is an odourless gas. Odourized propane will contain up to 28 g Ethyl Mercaptan per 1000 L of propane.

Odour threshold : Not available.

9 . Physical and chemical properties

pH	:	Not available.
Boiling/condensation point	:	-42°C (-43.6°F)
Melting/freezing point	:	Not available.
Relative density	:	Not available.
Vapour pressure	:	1434.9 kPa (10763 mm Hg) @ 38°C (100°F)
Vapour density	:	1.56 [Air = 1]
Volatility	:	Volatile.
Evaporation rate	:	Not available.
Viscosity	:	Not available.
Pour point	:	Not available.
Solubility	:	Not available.

10 . Stability and reactivity

Chemical stability	:	The product is stable.
Hazardous polymerisation	:	Under normal conditions of storage and use, hazardous polymerisation will not occur.
Materials to avoid	:	Reactive with oxidising agents and halogenated compounds.
Hazardous decomposition products	:	May release COx, smoke and irritating vapours when heated to decomposition.

11 . Toxicological information

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Butane	LC50 Inhalation Gas.	Rat	658000 mg/m³	4 hours

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : Not available.

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
Propene	A4	3	-	-	-	-

Mutagenicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Aquatic ecotoxicity

Conclusion/Summary : Not available.

Biodegradability

Conclusion/Summary : Not available.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimised wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Empty pressure vessels should be returned to the supplier. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

14 . Transport information

Regulatory information	UN number	Proper shipping name	Classes	PG*	Label	Additional information
TDG Classification	UN1978	PROPANE	2.1	-		-
DOT Classification	Not available.	Not available.	Not available.	-		-

PG* : Packing group

15 . Regulatory information

United States

HCS Classification : Compressed gas
Flammable gas

Canada

WHMIS (Canada) : Class A: Compressed gas.
Class B-1: Flammable gas.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

International regulations

Canada inventory : All components are listed or exempted.

United States inventory (TSCA 8b) : All components are listed or exempted.

Europe inventory : All components are listed or exempted.

16 . Other information

Label requirements : EXTREMELY FLAMMABLE GAS. MAY CAUSE FLASH FIRE. HIGH PRESSURE GAS.

Hazardous Material Information System (U.S.A.) :

Health	2
Flammability	4
Physical hazards	2
Personal protection	K

National Fire Protection Association (U.S.A.) :

References : Available upon request.
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Date of printing : **10/24/2013.**

Date of issue : 30 March 2012

Date of previous issue : 3/31/2009.

Responsible name : **Product Safety - DSR**

Indicates information that has changed from previously issued version.

For Copy of (M)SDS : Internet: www.petro-canada.ca/msds

Canada-wide: telephone: 1-800-668-0220; fax: 1-800-837-1228

For Product Safety Information: (905) 804-4752

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

USED OIL

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **USED OIL**

SYNONYMS: Waste oil; Used lubricating oil; Oil and water mixture

PRODUCT PART NUMBER(S): Not applicable.

PRODUCT USE: Oil or water mixture for re-refining or reprocessing.
If this product is used in combination with other products, refer to the Material Safety Data Sheets for those products.

These numbers are for emergency use only. If you desire non-emergency product information, please call a phone number listed below.

24-HOUR EMERGENCY PHONE NUMBERS
MEDICAL AND TRANSPORTATION (SPILL):

1-800-468-1760

MANUFACTURER/ SUPPLIER: Safety-Kleen Systems, Inc.
5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
1-800-669-5740
www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then 1 then Extension 7500

MSDS FORM NUMBER: 81451 **ISSUE:** September 20, 2007

ORIGINAL ISSUE: January 15, 1990 **SUPERSEDES:** June 11, 2007

PREPARED BY: Product MSDS Coordinator **APPROVED BY:** MSDS Task Force

USED OIL
MATERIAL SAFETY DATA SHEET

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL TWA	OSHA PEL STEL	ACGIH TLV® TWA	ACGIH TLV® STEL	LD[a]	LC[b]
80 to 100	Lubricating oils, used	Used oil	70514-12-4	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.
0 to 20*	Water/solids	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.
0 to 10*	Hydrocarbon solvents. May include gasoline, diesel fuel, jet fuel, mineral spirits, etc.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.
0 to 1.5*	Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel, and others: each below 1.0 WT%.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.
0 to 1.0*	Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3 WT%.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.
0 to 0.5*	Chlorinated solvents.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.	N. Av.

N.Av. = Not Available *Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product. [a]Oral-Rat LD_{50} (mg/kg) [b]Inhalation-Rat LC_{50}

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE
Liquid, black and viscous (thick), petroleum odor.

WARNING!
PHYSICAL HAZARDS
Combustible liquid.

HEALTH HAZARDS
May be harmful if inhaled.
May be harmful if absorbed through skin.
May be harmful or fatal if swallowed.
May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.
Suspect cancer hazard. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.
Contains material which can cause birth defects.
Contains material which can cause central nervous system damage.

ENVIRONMENTAL HAZARDS
Product may be toxic to fish, plants, wildlife, and/or domestic animals.

USED OIL
MATERIAL SAFETY DATA SHEET

POTENTIAL HEALTH EFFECTS

Effects may vary depending on material composition. Typical effects may include:

INHALATION (BREATHING): High concentrations of vapor or mist may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

EYES: May cause irritation.

SKIN: May cause irritation. Product may be absorbed through the skin and cause harm as noted under **INHALATION (BREATHING)**.

INGESTION (SWALLOWING): May be harmful or fatal if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Individuals with pre-existing cardiovascular, liver, kidney, respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC: Prolonged or repeated inhalation may cause oil pneumonia, lung tissue inflammation, fibrous tissue formation, and/or toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

CANCER INFORMATION: This product contains mineral oils, untreated or mildly treated, which can cause cancer. This product may contain hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics which can cause cancer. Risk of cancer depends on duration and level of exposure. For more information, see **SECTION 11: CARCINOGENICITY**.

POTENTIAL ENVIRONMENTAL EFFECTS

Product may be toxic to fish, plants, wildlife, and/or domestic animals.
Also see **SECTION 12: ECOLOGICAL INFORMATION**.

USED OIL
MATERIAL SAFETY DATA SHEET

SECTION 4: FIRST AID MEASURES

INHALATION: (BREATHING)	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.
EYES:	If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.
SKIN:	Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.
INGESTION: (SWALLOWING)	Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything to an unconscious person by mouth.
NOTE TO PHYSICIANS:	Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT:	>200°F (93°C) (minimum) Pensky-Martens Closed Cup
FLAMMABLE LIMITS IN AIR:	Not available.
AUTOIGNITION TEMPERATURE:	Not available.
HAZARDOUS COMBUSTION PRODUCTS:	Decomposition and combustion materials may be toxic. Burning may produce phosgene gas, nitrogen oxides, carbon monoxide, and unidentified organic compounds.
CONDITIONS OF FLAMMABILITY:	Heat, sparks, or flame. Product may burn but does not ignite readily.
EXTINGUISHING MEDIA:	Use carbon dioxide, regular foam, dry chemical, water spray, or water fog.

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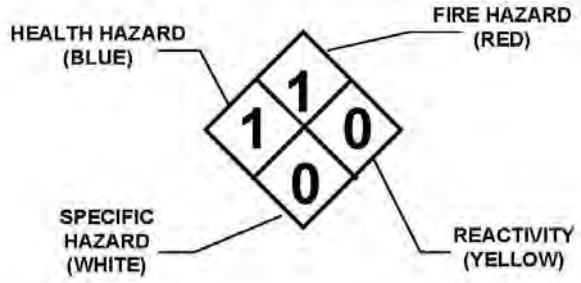
USED OIL
MATERIAL SAFETY DATA SHEET

NFPA 704 HAZARD IDENTIFICATION:

This information is intended solely for the use by individuals trained in this system.



FIRE FIGHTING INSTRUCTIONS:

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

FIRE AND EXPLOSION HAZARDS:

Heated containers may rupture. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact. Product may be sensitive to static discharge, which could result in fire or explosion.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface waters and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

There may be specific federal regulatory reporting requirements associated with spills, leaks, or releases of this product. Also see **SECTION 15: REGULATORY INFORMATION.**

USED OIL
MATERIAL SAFETY DATA SHEET

SECTION 7: HANDLING AND STORAGE

HANDLING: Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, storage tanks, tanker trucks, and rail tank cars should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

SHIPPING AND STORING: Keep container tightly closed when not in use and during transport. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORT INFORMATION** for Packing Group information.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Use general ventilation, process enclosures, local exhaust ventilation, or other engineering controls to control air-borne levels. Where explosive mixtures may be present, equipment safe for such locations should be used.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: A respiratory protection program which meets USA's OSHA General Industry Standard 29 CFR 1910.134 or Canada's CSA Standard Z94.4-M1982 requirements must be followed whenever workplace conditions warrant a respirator's use. Consult a qualified Industrial Hygienist or Safety Professional for respirator selection guidance.

EYE PROTECTION: Wearing chemical goggles is recommended. Contact lens may be worn with eye protection.

SKIN PROTECTION: Where prolonged or repeated skin contact is likely, wear neoprene, nitrile (4 mil minimum), PVC (polyvinyl chloride), or equivalent protective gloves; wearing natural rubber or equivalent gloves is not recommended.

When product is heated and skin contact is likely, wear heat-insulating gloves, boots, and other protective clothing.

To avoid prolonged or repeated contact with product where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

USED OIL
MATERIAL SAFETY DATA SHEET

PERSONAL HYGIENE:	Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with the product.
OTHER PROTECTIVE EQUIPMENT:	Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR:	Liquid, black and viscous (thick), petroleum odor.
ODOR THRESHOLD:	Not available.
MOLECULAR WEIGHT:	Not applicable.
SPECIFIC GRAVITY:	0.8 to 1.0 at 60°F (15.6°C) (water = 1)
DENSITY:	6.7 to 8.3 LB/US gal (800 to 1000 g/l) (approximately)
VAPOR DENSITY:	greater than 1 (air = 1) (based on kerosene)
VAPOR PRESSURE:	Not available.
BOILING POINT:	Not available.
FREEZING/MELTING POINT:	Not available.
pH:	Not applicable.
EVAPORATION RATE:	less than 1 (butyl acetate = 1)
SOLUBILITY IN WATER:	Slight.
FLASH POINT:	>200°F (93°C) (minimum) Pensky-Martens Closed Cup
FLAMMABLE LIMITS IN AIR:	Not available.
AUTOIGNITION TEMPERATURE:	Not available.

USED OIL
MATERIAL SAFETY DATA SHEET

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal temperatures and pressures. Avoid heat, sparks, or flame.
INCOMPATIBILITY:	Avoid acids, alkalies, oxidizing agents, reducing agents, reactive halogens, or reactive metals.
REACTIVITY:	Polymerization is not known to occur under normal temperatures and pressures. Not reactive with water.
HAZARDOUS DECOMPOSITION PRODUCTS:	None under normal temperatures and pressures. Also see **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS**.

SECTION 11: TOXICOLOGICAL INFORMATION

SENSITIZATION:	Based on best current information, there may be known human sensitization associated with this product.
MUTAGENICITY:	Based on best current information, there may be mutagenicity associated with this product.
CARCINOGENICITY:	Mineral oils, untreated or mildly treated are listed by IARC as a known carcinogen. Mineral oils, untreated or mildly treated are classified by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are listed by OSHA as known carcinogens. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are listed by IARC as known, probable, or possible carcinogens. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are classified by NTP as known carcinogens or as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents; metals, and polynuclear aromatics present in this product which are recognized by ACGIH as confirmed or suspected human carcinogens. Also see **SECTION 3: CANCER INFORMATION**.

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USED OIL
MATERIAL SAFETY DATA SHEET

REPRODUCTIVE TOXICITY:	Based on best current information, there may be reproductive toxicity associated with this product.
TERATOGENICITY:	Based on best current information, there may be teratogenicity associated with this product.
TOXICOLOGICALLY SYNERGISTIC PRODUCT(S):	Based on best current information, there may be toxicologically synergistic products associated with this product.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:	Not available.
OCTANOL/WATER PARTITION COEFFICIENT:	Not available.
VOLATILE ORGANIC COMPOUNDS:	Not available. As per 40 CFR Part 51.100(s).

SECTION 13: DISPOSAL CONSIDERATIONS

Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

SECTION 14: TRANSPORT INFORMATION

DOT:	Not regulated.
TDG:	Not regulated.
EMERGENCY RESPONSE GUIDE NUMBER:	Not applicable. Reference *North American Emergency Response Guidebook*

SECTION 15: REGULATORY INFORMATION

USA REGULATIONS SARA SECTIONS 302 AND 304:	Based on the ingredient(s) listed in **SECTION 2**, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

USED OIL
MATERIAL SAFETY DATA SHEET

SARA SECTIONS 311 AND 312:	This product poses the following physical and health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA): Immediate (Acute) Health Hazard Delayed (Chronic) Health Hazard
SARA SECTION 313:	This product may contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.
CERCLA:	This product may contain "hazardous substances" listed pursuant to Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.
TSCA:	Not available.
CALIFORNIA:	This product is not for sale or use in the State of California.
CANADIAN REGULATIONS WHMIS:	Not regulated
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA):	Not available.

SECTION 16: OTHER INFORMATION

REVISION INFORMATION:	Change from MSIS to MSDS.
LABEL/OTHER INFORMATION:	Not available.

Imperial Oil

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: Z-50 PIPE DOPE
Product Description: Base Oil and Additives
MSDS Number: 8503
Product Code: 2015A020X010
Intended Use: Sealant

COMPANY IDENTIFICATION

Supplier: **Imperial Oil Products Division**
240 4th Avenue
Calgary, ALBERTA. T2P 3M9 Canada

24 Hour Environmental / Health Emergency Telephone	1-866-232-9563
Transportation Emergency Phone Number	1-866-232-9563
Product Technical Information	1-800-268-3183
Supplier General Contact	1-800-567-3776

SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

No Reportable Hazardous Substance(s) or Complex Substance(s).

SECTION 3 HAZARDS IDENTIFICATION

This material is not considered to be hazardous according to regulatory guidelines see Section 15.

HEALTH EFFECTS

Low order of toxicity. Excessive exposure may result in eye, skin, or respiratory irritation. High-pressure injection under skin may cause serious damage.

NFPA Hazard ID:	Health:	1	Flammability:	1	Reactivity:	1
HMIS Hazard ID:	Health:	1	Flammability:	1	Reactivity:	1

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Under normal conditions of intended use, this material is not expected to be an inhalation hazard.

SKIN CONTACT

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

First aid is normally not required. Seek medical attention if discomfort occurs.

SECTION 5 FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO_2) to extinguish flames.

Inappropriate Extinguishing Media: Straight streams of water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. Fire-fighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Hazardous Combustion Products: Smoke, Fume, Aldehydes, Sulphur oxides, Incomplete combustion products, Oxides of carbon, Metal Oxides

FLAMMABILITY PROPERTIES

Flash Point [Method]: >221°C (430°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: >260°C (500°F)

SECTION 6 ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

PROTECTIVE MEASURES

Avoid contact with spilled material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

SPILL MANAGEMENT

Land Spill: Scrape up spilled material with shovels into a suitable container for recycle or disposal.

Water Spill: Stop leak if you can do so without risk. Warn other shipping. Material will sink. Consult an expert. No immediate action required.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7 HANDLING AND STORAGE

HANDLING

Prevent small spills and leakage to avoid slip hazard.

Static Accumulator: This material is not a static accumulator.

STORAGE

Do not store in open or unlabelled containers.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Substance Name	Form	Limit/Standard			Note	Source
MICA	Respirable fraction.	TWA	3 mg/m3			ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapour warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

No protection is ordinarily required under normal conditions of use.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practise good housekeeping.

ENVIRONMENTAL CONTROLS

Comply with applicable environmental regulations limiting discharge to air, water and soil. Protect the environment by applying appropriate control measures to prevent or limit emissions.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

GENERAL INFORMATION

Physical State: Solid
Form: Semi-fluid
Colour: Grey
Odour: Characteristic
Odour Threshold: N/D

IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 °C): 1.59
Flash Point [Method]: >221°C (430°F) [ASTM D-92]
Flammable Limits (Approximate volume % in air): LEL: 0.9 UEL: 7.0
Autoignition Temperature: >260°C (500°F)
Boiling Point / Range: < 316°C (601°F) [Estimated]
Vapour Density (Air = 1): N/D
Vapour Pressure: < 0.013 kPa (0.1 mm Hg) at 20°C [Estimated]
Evaporation Rate (n-butyl acetate = 1): < 0.01
pH: N/D

Log Pow (n-Octanol/Water Partition Coefficient): N/A
Solubility in Water: Negligible
Viscosity: [N/D at 40°C]
Oxidizing Properties: See Hazards Identification Section.

OTHER INFORMATION

Freezing Point: N/D
Melting Point: 196°C (385°F)
Decomposition Temperature: N/D

NOTE: Most physical properties above are for the oil component in the material.

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Excessive heat. High energy sources of ignition.

MATERIALS TO AVOID: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity: No end point data for material.	Minimally Toxic. Based on assessment of the components.
Irritation: No end point data for material.	Negligible hazard at ambient/normal handling temperatures. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 5000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on assessment of the components.
Eye	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on assessment of the components.

CHRONIC/OTHER EFFECTS

Contains:

Base oil severely refined: Not carcinogenic in animal studies. Representative material passes IP-346, Modified Ames test, and/or other screening tests. Dermal and inhalation studies showed minimal effects; lung non-specific infiltration of immune cells, oil deposition and minimal granuloma formation. Not sensitising in test

animals.

Additional information is available by request.

CMR Status: None.

Chemical Name	CAS Number	List Citations
MICA	12001-26-2	4.

--REGULATORY LISTS SEARCHED--

1 = IARC 1
2 = IARC 2A
3 = IARC 2B
4 = ACGIH ALL
5 = ACGIH A1
6 = ACGIH A2

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Not expected to be harmful to aquatic organisms.

MOBILITY

Base oil component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Base oil component -- Expected to be inherently biodegradable

BIOACCUMULATION POTENTIAL

Base oil component -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain

residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, 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.

SECTION 14 TRANSPORT INFORMATION

LAND (TDG): Not Regulated for Land Transport

LAND (DOT): Not Regulated for Land Transport

SEA (IMDG): Not Regulated for Sea Transport according to IMDG-Code

AIR (IATA): Not Regulated for Air Transport

SECTION 15 REGULATORY INFORMATION

WHMIS Classification: Not controlled

This product has been classified in accordance with hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations.

CEPA: All components of this material are either on the Canadian Domestic Substances List (DSL), exempt, or have been notified under CEPA.

Complies with the following national/regional chemical inventory requirements: AICS, DSL, IECSC, KECI, PICCS

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
ZINC	7440-66-6	6

--REGULATORY LISTS SEARCHED--

1 = TSCA 4
2 = TSCA 5a2
3 = TSCA 5e
4 = TSCA 6
5 = TSCA 12b
6 = NPRI

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

Revision Changes:
Section 06: Notification Procedures - Header was modified.
Section 10: Materials To Avoid - Header was modified.
Section 11: Acute Toxicity Table Header was modified.
Section 09: Phys/Chem Properties Note was modified.
Section 09: Colour was modified.
Section 11: Ingestion Acute Lethality - Header was modified.
Section 11: Inhalation - Header was modified.
Section 09: Boiling Point C(F) was modified.
Section 09: Evaporation Rate - Header was modified.
Section 08: Personal Protection - Header was modified.
Section 08: Comply with applicable regulations phrase was modified.
Section 09: Vapour Pressure - Header was modified.
Section 09: Vapour Pressure was modified.
Section 11: Inhalation Lethality Test Data was modified.
Section 11: Inhalation Irritation Test Data was modified.
Section 05: Hazardous Combustion Products was modified.
Section 06: Accidental Release- Spill Management- Water was modified.
Section 09: Relative Density - Header was modified.
Section 09: Flash Point C(F) was modified.
Section 14: Sea (IMDG) - Header was modified.
Section 14: Air (IATA) - Header was modified.
Section 14: LAND (TDG) - Header was modified.
Section 14: LAND (DOT) - Header was modified.
Section 14: LAND (DOT) - Default was modified.
Section 14: LAND (TDG) Default was modified.
Section 14: Sea (IMDG) - Default was modified.
Section 14: Air (IATA) - Default was modified.
Section 15: National Chemical Inventory Listing - Header was modified.
Section 15: National Chemical Inventory Listing was modified.
Hazard Identification: Hazards Note was modified.
Section 16: CA Prepared by - Header was modified.
Section 09: Section 9 Footnotes was modified.
Section 09: Oxidizing Properties was modified.
Section 15: Canadian List Citations Table was modified
Section 01: Company Contact Methods Sorted by Priority was modified.
Section 06: Protective Measures was added.
Section 06: Accidental Release - Protective Measures - Header was added.
Section 09: Form - Header was added.
Section 09: Physical State was added.
Section 09: Decomposition Temperature was added.
Section 09: Decomposition Temp - Header was added.
Section 09: Vapour Pressure was added.
Section 01: Product Code was added.
Section 01: Product Code - Header was added.
Section 09: Form - Header was deleted.
Section 09: Physical State was deleted.

WHMIS Classification: Not controlled

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DGN: 5007465 (1015931)

Prepared by: Imperial Oil Limited, IH and Product Safety

Appendix C: Daily Fuel Inspection Record

Aston Bay Property
Daily Fuel Inspection Record

Date	Main Cache	Generator Shack	Refueling Station	Tent Drums	Drill Site	Insta-Berm	Bungs & Rims	Corrosion	Hoses/Valves/Fittings	Spill Kit/Fire Extinguisher	Signs	Comments
12-Jul-15	x					no tears, damage, or leaks; rain drain functioning properly	all bungs and rims sealed properly; no leaks detected	minor corrosion on diesel drums of batch B - should be used before batch C	all fuel transfer equipment functioning properly; no leakage detected	spill kit is fully stocked; fire extinguisher inspection up to date	all signs are posted and undamaged	Example

Appendix D: NT-NU Spill Report Form

Northwest Territories Nunavut Canada

NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE
TEL: (867) 920-8130
FAX: (867) 873-6924
EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR	REPORT TIME	☐ ORIGINAL SPILL REPORT, OR ☐ UPDATE # _____ TO THE ORIGINAL SPILL REPORT	REPORT NUMBER ____-_____
B	OCCURRENCE DATE: MONTH – DAY – YEAR	OCCURRENCE TIME		
C	LAND USE PERMIT NUMBER (IF APPLICABLE)	WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION	REGION ☐ NWT ☐ NUNAVUT ☐ ADJACENT JURISDICTION OR OCEAN		
E	LATITUDE DEGREES MINUTES SECONDS	LONGITUDE DEGREES MINUTES SECONDS		
F	RESPONSIBLE PARTY OR VESSEL NAME	RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION		
G	ANY CONTRACTOR INVOLVED	CONTRACTOR ADDRESS OR OFFICE LOCATION		
H	PRODUCT SPILLED	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
	SECOND PRODUCT SPILLED (IF APPLICABLE)	QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER	
I	SPILL SOURCE	SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES	
J	FACTORS AFFECTING SPILL OR RECOVERY	DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT	
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS			

L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE

REPORT LINE USE ONLY

N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130

LEAD AGENCY ☐ EC ☐ CCG ☐ GNWT ☐ GN ☐ ILA ☐ INAC ☐ NEB ☐ TC | SIGNIFICANCE ☐ MINOR ☐ MAJOR ☐ UNKNOWN | FILE STATUS ☐ OPEN ☐ CLOSED

AGENCY	CONTACT NAME	CONTACT TIME	REMARKS
LEAD AGENCY			
FIRST SUPPORT AGENCY			
SECOND SUPPORT AGENCY			
THIRD SUPPORT AGENCY			

PAGE 1 OF _____

Instructions for Completing the NT-NU Spill Report Form

This form can be filled out electronically and e-mailed as an attachment to spills@gov.nt.ca. Until further notice, please verify receipt of e-mail transmissions with a follow-up telephone call to the spill line. Forms can also be printed and faxed to the spill line at 867-873-6924. Spills can still be phoned in by calling collect at 867-920-8130.

A. Report Date/Time	The actual date and time that the spill was reported to the spill line. If the spill is phoned in, the Spill Line will fill this out. **Please do not fill in the Report Number**: the spill line will assign a number after the spill is reported.
B. Occurrence Date/Time	Indicate, to the best of your knowledge, the exact date and time that the spill occurred. Not to be confused with the report date and time (see above).
C. Land Use Permit Number /Water Licence Number	This only needs to be filled in if the activity has been licenced by the Nunavut Water Board and/or if a Land Use Permit has been issued. Applies primarily to mines and mineral exploration sites.
D. Geographic Place Name	In most cases, this will be the name of the city or town in which the spill occurred. For remote locations – outside of human habitations – identify the most prominent geographic feature, such as a lake or mountain and/or the distance and direction from the nearest population center. **You must include the geographic coordinates** (Refer to Section E).
E. Geographic Coordinates	This only needs to be filled out if the spill occurred outside of an established community such as a mine site. Please note that the location should be stated in degrees, minutes and seconds of Latitude and Longitude.
F. Responsible Party Or Vessel Name	This is the person who was in management/control/ownership of the substance at the time that it was spilled. In the case of a spill from a ship/vessel, include the name of the ship/vessel. Please include full address, telephone number and e-mail. Use box K if there is insufficient space. **Please note that, the owner of the spilled substance is ultimately responsible for any spills of that substance, regardless of who may have actually caused the spill.**
G. Contractor involved?	Were there any other parties/contractors involved? An example would be a construction company who is undertaking work on behalf of the owner of the spilled substance and who may have contributed to, or directly caused the spill and/or is responding to the spill.
H. Product Spilled	Identify the product spilled; most commonly, it is gasoline, diesel fuel or sewage. For other substances, avoid trade names. Wherever possible, use the chemical name of the substance and further, identify the product using the four digit UN number (eg: UN1203 for gasoline; UN1202 for diesel fuel; UN1863 for Jet A & B)
I. Spill Source	Identify the source of the spill: truck, ship, home heating fuel tank and, if known, the cause (eg: fuel tank overfill, leaking tank; ship ran aground; traffic accident, vandalism, storm, etc.). Provide an estimate of the extent of the contaminated/impacted area (eg: 10 m^2)
J. Factors Affecting Spill	Any factors which might make it difficult to clean up the spill: rough terrain, bad weather, remote location, lack of equipment. Do you require advice and/or assistance with the cleanup operation? Identify any hazards to persons, property or environment: for example, a gasoline spill beside a daycare centre would pose a safety hazard to children. Use box K if there is insufficient space.
K. Additional Information	Provide any additional, pertinent details about the spill, such as any peculiar/unique hazards associated with the spilled material. State what action is being taken towards cleaning up the spill; disposal of spilled material; notification of affected parties. If necessary, append additional sheets to the spill report. Number the pages in the same format found in the lower right hand corner of the spill form: eg. "Page 1 of 2", "Page 2 of 2" etc. **Please number the pages to ensure that recipients can be certain that they received all pertinent documents.** If only the spill report form was filled out, number the form as "Page 1 of 1".
L. Reported to Spill Line by	Include your full name, employer, contact number and the location from which you are reporting the spill. Use box K if there is insufficient space.
M. Alternate Contact	Identify any alternate contacts. This information assists regulatory agencies to obtain additional information if they cannot reach the individual who reported the spill.
N. Report Line Use Only	**Leave Blank**. This box is for the **Spill Line's use only**.