

16.3 Environmental Process

1.0 PURPOSE

Recognizing environmental concerns and potential hazards and taking the necessary steps to control them is an important aspect of our safety program. NCSG Crane & Heavy Haul Services and its affiliated companies NCSG believes it is imperative to implement safeguards that will assist in the protection of the environment. We are committed to the development and implementation of effective waste management. Our purpose is to create an environment as free of waste as possible within our daily operations. We strive to set ourselves as leaders in the reduction, recycling and proper disposal of our waste.

In fulfilling this commitment to protect the environment, management will ensure all waste material is disposed of in compliance with legislative requirements. Management will ensure all employees understand and adhere to the required disposal procedures for all waste materials.

All employees are responsible for adhering to the requirements of waste management and are encouraged to provide further suggestions for the reduction, reuse and recycling of such.

To be successful, this program requires full participation of all management, supervisors and workers. Each individual must act responsibly when disposing of waste products.

Waste poses a real threat to our environment; therefore, ensuring proper measures are in place will assist in the preservation of the environment.

2.0 SCOPE AND APPLICATION

Proper disposal of waste material will assist in the preservation of our environment. While performing our duties, we shall be conscious of the appropriate protection of humans, animals, plant life, air, water and soil. All materials must be stored, handled and disposed of in such a manner that will provide appropriate protection to the environment. Wherever possible, it is encouraged to recycle and utilize recycled products.

Hazardous goods must be handled safely in accordance with government regulations including, but not limited to Occupational Health and Safety, Transportation of Dangerous Goods and WHMIS.

This process applies to all employees who are engaged in NCSG company business, including contractors.

3.0 DEFINITIONS

There are no definitions for this process.

4.0 EXPECTATIONS

NCSG strongly committed to the protection of the environment and insists that all its employees and contractors working on any worksite conduct all work activities in an environmentally friendly way and responsible manner.

5.0 ROLES AND RESPONSIBILITIES

5.1 Management

- Records the time of the report, source of information and details on location, size, type of spill and any other information available on the Loss Control Report (LCR).
- Ensures that the spill is reported to the proper authorities.
- Oversees the cleanup operations until it is satisfactorily completed.
- Together with the Supervisor decides if additional equipment is required to contain and cleanup spills.
- Maintain contact with Supervisor to ensure final inspection and sign-off on spill site.
- Notifies internal company departments.
- Initiates Mutual Aid Agreements if so required.
- Oversees completion and distribution of Loss Control Report (LCR).
- Ensures investigation identifies measures to prevent similar spills.
- Provides cleanup advice to the Supervisor.
- Assists with preparation of press releases.
- Provides advice on storage and disposal options.
- Ensures that there are follow up reports prepared on the spill event, clean up and environmental impacts.
- Liaise with government agencies (as required)
- Notifies and Liaise with Project Client or Owners (as required)

5.2 Supervisor

- Assist in initial and ongoing response efforts.
- Supervise the spill response team.
- With work crew, take initial action to seal off the source and contain spill.
- Decide with Management if mobilization of additional equipment is required.
- Assess whether burning is a viable cleanup measure. Consult with Regulatory Agency.
- Ensure co-ordination of equipment and manpower as needed (company and contractors)
- Ensure expeditious response and clean up of spill site and impacted area.

5.3 Spill Response Team (composed of various personnel)

- Conduct the cleanup of spills under the direction of the Supervisor.
- Deploy booms, sorbent and other equipment and materials as required.
- Take appropriate response measures.
- Continue the cleanup as directed by the Supervisor or until relieved.

5.5 First Responders

- Assess and verify the initial severity of the spill and safety concerns.
- Gather, collect and confirm information on the spill-source, type, size, cause, etc.
- Notify the Site Supervisor.
- Conduct the initial containment and cleanup operations.

6.0 METHOD

6.1 WASTE MANAGEMENT

Reduce

Wherever possible materials will be purchased in bulk form. This will minimize additional packaging and unnecessary waste.

Recycle

All employees are encouraged to recycle wherever possible. Labelled containers have been provided for the collection of returnable beverage containers. When the confidentiality of material does not pose an issue, the use of waste paper is encouraged.

Reuse

All empty drums and pallets are to be stored in the designated areas or removed from site. Arrangements will be made with suppliers and waste management companies to have items gathered for reuse.

Vehicle and Equipment

Vehicles and equipment will be inspected for excessive omissions and leaks prior to being put into service. Should any piece of equipment be found to be non-compliant, all necessary repairs will be performed before the equipment is utilized.

Disposal

All materials must be disposed of in the designated, appropriately labelled containers. Do not discard hazardous materials in the garbage dumpster, in drains, in sewers or on the ground. Containers filled with waste material, hazardous and otherwise, will be disposed of by an external source, licensed for the proper disposal of such items.

All spills will be cleaned immediately and the supplies used (i.e. rags) must be disposed of in the appropriate manner.

A successful spill cleanup is one in which no one gets exposed or injured during the clean up.

*Remember to check the MSDS (Material Safety Data Sheet).

A Minor Spill is one in which ALL of the following conditions are met:

- the responsible party is at the scene; and
- the material spilled is known; and
- the material spilled is not highly toxic; and
- the quantity spilled is small; and
- there is no fire hazard present; and
- the spill is completely contained inside the work area; and
- available & appropriate personnel protective equipment is used (i.e., gloves, eye protection and a half-face respirator)

A Major Spill is one in which ANY of the following conditions apply:

- the responsible party is unknown (it's an "orphan" spill); or
- the material spilled is unknown; or
- the material spilled is highly toxic; or
- a large (or undetermined) quantity was spilled; or
- a significant fire hazard may be present; or
- the spill is in a common area (e.g., hallway) or other area accessible to the general public; or
- advanced or unavailable personnel protective equipment (i.e. more than gloves, eye protection and a half-face respirator) is required to respond to the spill; or
- a responder is unsure whether the spill should be considered "Minor" or "Major".

6.2 SPILLS

Chemical Spills

Consult the Safety Data Sheets (SDS) for the spilled material to determine the health effects and the requirement for PPE. Refer to the Spill Cleanup Procedures in section 6.3.

Medical Facilities

A medical facility is established at every project site.

Emergency response procedures may vary from one jurisdiction to the next. The site manager must ensure that the emergency response procedure is in place prior to the start of the project.

Containment

All bulk fuel storage areas will include double walled storage tanks or have lined secondary containment dikes surrounding them. These dikes are constructed of either concrete or compacted earth with liners and have at least 110% containment capacity of the largest tank contained within them.

Inspections

A weekly inspection program is established at each site to inspect all bulk storage tanks and containment dikes.

Weather Conditions

Weather conditions have a significant impact when determining which environmental controls are required when developing an emergency spill response strategy.

Sub-zero temperatures and a constantly blowing wind make it difficult for employees to control and cleanup a hazardous spill especially on the ice surface.

WHMIS/GHS

All employees are trained in the Workplace Hazardous Material Information System (WHMIS)/Global Harmonized Systems (GHS) and understand the hazards associated with the products used in the workplace or transported.

Fuel Spills

The possibility of a fuel spill on project sites will vary depending on a number of factors: human error, mechanical failure, road conditions, weather conditions, etc.

Spill Response

When responding to any spill, the safety of all employees is paramount, therefore the following steps are part of the procedures:

- Identify the spilled material and follow the appropriate procedure.
- Monitor the area for Explosive gases and Oxygen (O₂) to ensure a safe atmosphere.
- Determine the potential for fire, and eliminate any hazards.
- Ensure that all personnel are equipped with the appropriate Personal Protective Equipment.

6.3 SPILL CLEANUP PROCEDURE

Warn personnel in the immediate area. If a volatile, flammable, or highly toxic material is spilled, have everybody extinguish flames (if trained to do so) and turn off spark-generating equipment and evacuate the area immediately.

If clothing is contaminated, remove it and use the emergency shower to rinse the affected areas. If contaminants are in your eyes rinse for at least 15 minutes at an eyewash station.

If there are medical emergencies contact controller on site for assistance and an ambulance if required. Provide the following information:

- Your name and phone extension.
- Exact location of spill.
- Name of material spilled.
- Quantity of material spilled.
- Information on injuries to personnel.

Obtain the required spill supplies, put on appropriate protective equipment.

Remove other materials from around the spill area to prevent cross contamination and tripping hazards.

Work in teams. One person cleans the spill; the other should remain outside of the contaminated area and hand supplies to person cleaning.

If non-toxic, non-volatile, non-flammable material is spilled, start to place absorbent materials at the edge of the spill.

Always pour the neutralizer or absorbent starting at the edges and moving toward the center of the spill site.

Neutralize any residue on the floor and work surfaces you are unable to pick up with appropriate absorbent.

Scoop up all absorbed material. Remember, if no neutralizer was used, the absorbed material is still hazardous.

Wash the affected area with an appropriate cleaning solution (soap and water).

Report the spill to your Supervisor.

Dispose of all cleanup materials as hazardous waste.

6.4 PRODUCT CATEGORIES

The materials in this Emergency Spill Response are generally divided into five categories:

- Flammable Immiscible Liquids
- Soluble Solids/Oxidizers
- Flammable Compressed Gases
- Soluble Liquids
- Toxic Solids

Flammable Immiscible Liquids

These substances are all hydrocarbon-based and will ignite under certain conditions.

Gasoline poses the greatest fire and safety hazard and is not recoverable when spilled on water.

Action Plan Steps

1. Confirm that a spill has occurred. It may not be obvious if a spill has occurred - look for:
 - pooled liquid.
 - damage to equipment/tanks.
 - smell of fuel or chemicals and
 - leaks from hatches, valves or other fixtures
2. Assess The Situation. Before initiating response actions, take the time to determine the nature of a spill and to collect some or all of the following facts:
 - potential risk of fire, explosion and environmental damage.
 - extent of injuries to co-workers or the public.
 - source and approximate size of the spill.
 - possible methods to stop the flow of product; and
 - proximity to water.
3. Take Action
 - Eliminate ignition source(s) if safe to do so.
 - Shut off spill source if safe to do so.
 - Attend to any injured persons.
 - Restrict personnel to the spill site using road barriers or marker tape.
 - Warn others in the area of the spill.
 - Use an explosion meter to monitor atmospheric gas concentrations.
 - Report spill to Advance Coating Solutions management.
 - Transport spill response kit to the spill site.
 - Control spreading and minimize impacts.

Spill Containment and Recovery

Special care should be taken to ensure that spilled material does not reach water bodies where recovery is more difficult.

Waste Disposal

- All combustibles are incinerated on a daily basis. This includes food scraps, office garbage etc.
- Non-hazardous solid “inert” waste generated (i.e. Scrap metal, pipe, wood, plastics, liners, Styrofoam) will be disposed of at approved landfills on site.
- All hazardous wastes and waste items that cannot be incinerated are securely packaged and disposed of in designated locations off-site.
- Prior to disposal, the hazardous waste will be properly packaged, labelled, stored and manifested in a Transportation of Dangerous Goods (TDG) approved shipping container.
- The container will have the appropriate hazardous waste labels.
- All Federal, State, Provincial and Territorial regulations will be adhered to.

Used Container Disposal

To ensure the proper disposal of used containers that have contacted, collected or contained a hazardous or regulated substance (e.g., paint cans, oil cans, acid containers, aerosol cans).

- Containers having contacted, collected or contained an acute hazardous material, corrosive or reactive substance must be triple washed with water prior to disposal.
- Metal containers can be disposed as scrap metal in the approved landfill after being triple washed and crushed.
- Any free liquid in the container must be disposed of properly, and the residual material allowed drying or solidifying.

Used Drum Disposal

During operations, drums will be used for storage of other “used” products (i.e. used glycol, used oil, cleaning of spills etc). These drums will have to be properly labelled and stored prior to acceptable removal and disposal usually off-site at an approved facility.

6.5 SPILL RESPONSE

Response Resources

A wide variety of spill control/recovery equipment and material exists for dealing with spills of petroleum products and chemical reagents. Heavy construction equipment is also available for use on demand.

Response Equipment

All equipment is stored in such a manner as to be readily available on short notice.

The Supervisor would immediately respond to a reported spill site by notifying his on-duty equipment operators to move equipment and material necessary to provide control and clean-up measures to the reported spill site.

Emergency spill containment and recovery materials and supplies are available for immediate mobilization at any time.

Planning & Logistics

The feasibility of containing and recovering a spill will largely be determined by its location and the rate of

release, spreading, transport and evaporation. These rates should be compared with the total time needed to deploy response equipment in order to evaluate whether or not containment, and/or sorbent and skimming operations can be effectively implemented. The pre- assembly of spill cleanup kits will expedite response and reduce the total deployment time needed, including:

- Equipment and support material mobilization time.
- Personnel Mobilization, transit and assembly at spill site time.
- Actual equipment set-up and deployment time.
- Determine Whether or not a spill has entered a waterway and whether or not access by land or water to control points is possible so that booms, sorbents and skimmers and vacuum trucks can be deployed. Check maps and consult with personnel familiar with the spill area.
- Establish priorities to optimize utilization of personnel and gear needed for all cleanup phases (containment, removal, storage, transfer and disposal) at selected sites.
- Allow additional time for adverse weather, flying or driving conditions.

Monitoring Spills

Monitor spills throughout the response to ensure safety and to direct cleanup efforts:

- Explosive gas concentrations in the atmosphere using an explosion meter.
- Spill movement and behaviour, in order to properly direct response efforts.
- All threats to the safety of people, property and the environment.

Spills On Land

Spills on land should be contained as close to the source as possible, if safety allows.

Every effort should be made to ensure that a spill does not reach water, where its containment and recovery are much more difficult and the potential environmental impacts are much greater. Containment can be achieved using:

- A berm or dyke around the spill source
- A trench or ditch down slope of the spill source

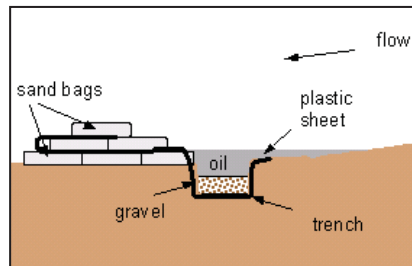
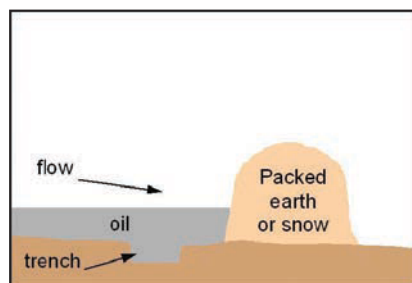
Earth Berm /Trench

If possible, locate the berm/trench sufficiently down slope of the release point to complete its construction before the spill arrives. Dig the trench along a natural drainage contour.

It should be approximately 0.5 m deep with a relatively flat bottom. The excavated material can then be combined with other available material to build the berm.

Sand Bag Berm/Trench

Sand bags can be used where available and if the earth is too hard or frozen and cannot be excavated or compacted. A plastic liner can be used to seal the trench and bags should be anchored with gravel or rocks and be woven between layers of bags.



Spills on Muskeg

Muskeg is generally poorly drained, wet and spongy. Internal drainage is usually slow and the depth of peat over mineral soil varies greatly. Muskeg is also highly acidic and low in nutrients, making biodegradation very slow, even during the summer months.

It is recommended that small oil spills in muskeg be mixed with peat moss and allowed to degrade during the summer months since more damage can be done by attempting cleanup using mechanical removal methods.

In the event of a small spill, it is important to weigh the advantages or cleanup versus the potential negative impacts on the terrain. Both personnel and equipment on wet or sensitive areas can cause considerable damage. In many cases, the best solution maybe to add nutrients to the contaminated area and monitor the site to ensure that the spill does not migrate to an adjacent sensitive area. In all cases appropriate environmental advisors and Regulatory Authorities should be consulted.

Spills in Water

Containing spills in water is often difficult because oil quickly spreads. In turbulent water, oil and chemicals are likely to mix into the water column, making recovery impractical. For these reasons, it is important that if the spill reaches water, that containment be attempted as close to the source as possible, and that the spill be prevented from reaching a flowing stream.

Spills in lakes should be contained, if possible, before reaching outlets where containment and recovery can be difficult and dangerous.

Efforts to contain spills in large streams should be limited to land based operations where the oil might pool in accessible back eddies. The recovery of water soluble chemicals is not possible.

In flowing streams, oil travels at the same speed as the surface current. On larger rivers or in open lake areas, slicks are also transported at 3.5% of the wind speed. Although a comparatively small effect, it can be an important factor if the wind is at right angles to the water flow and if the water surface is extensive. The wind can

force the spill to the sides of the river where flows are slower or the shore of a lake. Long reaches of the river may become contaminated although containment and recovery might also be possible.

In smaller streams, the wind will have less impact and the slick speed can be easily estimated. Placing a small stick in the middle of the stream and determine the length of time required to travel a given distance, (typically 10m). This information can be quickly be converted to speed ($36/\text{time (sec)} = \text{km/h}$) to determine the estimated travel time to a confluence or other sensitive area.

6.6 CONTAINMENT STRATEGIES

Determine the best possible strategy for containment will depend on a number of factors:

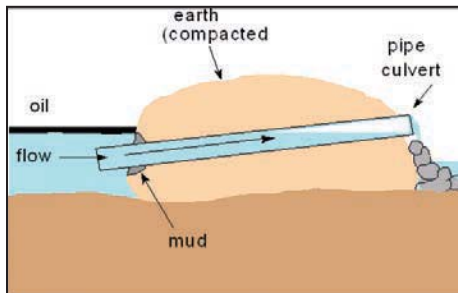
- Speed of slick travel
- Location of possible containment sites
- Availability of personnel and equipment
- Location of sensitive areas
- Safety of operations

Spills on water can be contained by using floating booms (sorbent or non-sorbent) or by constructing a temporary berm or inverted weir. The objective is to build a barrier against which the (normally floating) oil will pool while allowing the underflow of water.

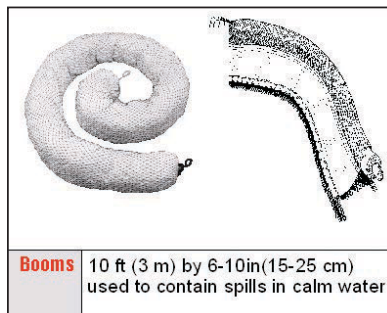
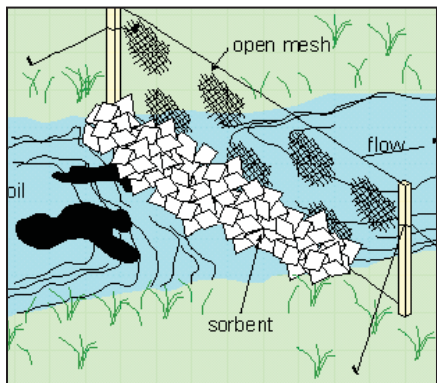
Booms

Booming with either sorbent or non-sorbent booms can also be an effective means of containing spills on slow-moving waters and in lakes. Effective containment using conventional booming techniques will be very difficult in streams or rivers where currents exceed 0.7 knots or 0.4m). At these speeds, oil will become entrained in the water flowing under the boom resulting in significant losses. Some improvements can be achieved in waters flowing at 1-2 (0.5-1 m/s) if the boom is deployed at an angle of less than 90 degrees to the direction of the flow.

Inverted Weir



Filter Fence



Sorbent booms or socks can also be used to provide a barrier to floating oil. These types of booms should be checked regularly to ensure that they do not become saturated with either water or oil since they will tend to float very low in the water or even sink and release oil downstream.

Booms 10 ft (3 m) by 6-10in(15-25 cm)
used to contain spills in calm water

Spills in Ice and Snow

Oil can remain relatively fresh, in an un-weathered state, under snow and ice for several months or more after a spill.

Evaporation rates will still be high when oil is ultimately exposed to the atmosphere except in very low temperatures. Oil can also move up and down small hills (several metres high) due to the capillary action of the snow.

Containment

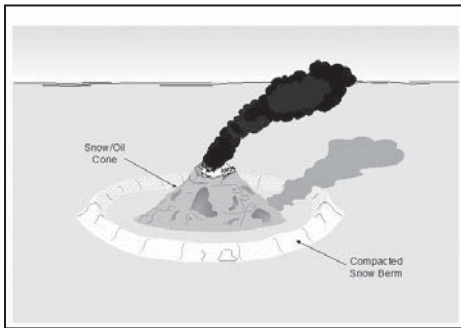
Snow and ice can be used to create berms to keep spills from spreading. In frozen rivers angled slots about 1 metre wide or holes can be cut in the ice, where safety permits, to allow possible spill recovery. The oil will rise up into the openings where it will be concentrated, and be available for recovery using skimmers or pumps.

Disposal

Oil spills in snow and ice can sometimes be burned if the spill can be isolated from the source. Although there is generally a reduced fire hazard, due attention to safety of operations is still required. If burning is

not effective, recovered contaminated material will need to be collected and transported to a designated disposal/treatment facility.

Burning Snow Cone



Recovery

When large volumes of oil have been contained either through natural or mechanical containment, it will be necessary to remove or recover the accumulated oil. This will generally occur in excavated trenches or adjacent to berms or natural barriers and occasionally in slow running streams or quiet ponds.

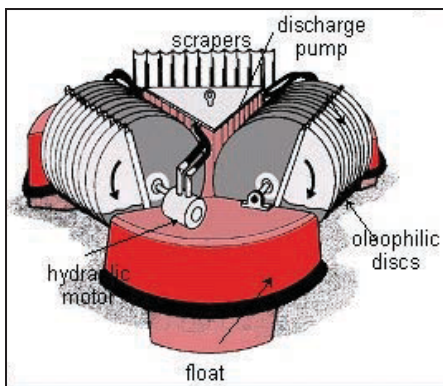
Vacuum trucks are ideal at cleanup sites accessible by road and where a large volume of oil has pooled that is generally free of water. The truck must be positioned at a safe distance so that there is no possibility of fire or explosion.

Oleophilic devices, such as disc or drum skimmers, can selectively recover oil in water, and are better suited to applications where the oil has formed a distinct layer on top of quiet water.

Accumulations adjacent to an inverted weir are an example. A vacuum truck would be largely ineffective in this instance since it would recover large amounts of water, particularly in a thin layer of oil with water flowing through the pipe or culvert.

When using disc or drum skimmers, ensure that small items of debris are periodically removed from the scrapers to ensure their efficient operation.

Disc Skimmer



7.0 TRAINING REQUIREMENTS AND MATERIALS

- Workplace Hazardous Materials Information System Training
- Transportation of Dangerous Goods Training
- Emergency Response Training

8.0 APPENDICIES

- Appendix A – Risk Assessment and Preventive Measures
- Appendix B – Spill Response Actions

APPENDIX A – Risk Assessment and Preventive Measures

POTENTIAL PROBLEM	IMPACT	PROBABILITY	PREVENTATIVE MEASURES
Diesel or Oil Major leak from storage tanks	High	Low	Daily inspections and monitoring will take place. Remote emergency shutoffs. Maintain additional fuel storage for emergencies.
A spill from a valve left open or a break in a pipe at the transfer facilities or at a pumping station	High	Moderate	Ensure all major valves are locked when not in use. Fuel transfer hoses will have a double locking mechanism. Concrete catchments basin at each station. Markers around all above ground fuel transfer pipelines.
A hydraulic hose breaking on a piece of heavy equipment	Low	High	Mechanics check all hoses and a nozzle for wear and leaks. Operators are required to complete daily equipment checklists for the mechanics; mechanics to service immediately or schedule downtime.
Pump Failure	Low	Low	Pumps are to be inspected weekly and -serviced monthly.
Power Outages	Low	Low	In case of long-term power outages, an emergency power supply
Chemical Spills	Low – High	Low	Chemicals will be stored in drums, bottles, canisters or packages. Chemicals will be stored in such a way as to protect from the weather Training in the handling of chemicals will take place to ensure safe handling. Regular inspections will take place of stored chemicals. Inventory controls in place. All chemicals used in explosive formulations are stored in designated areas
Flammables (paints, thinners, acetones, etc.)	Low to High	Low	Stored in fireproof storage facilities. All containers to be labelled.
Devran 201 K	Low to high	Low	Stored in designated site areas.

APPENDIX B – Spill Response Actions

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Straw-Yellow Liquid FLASH POINT: 215°C (Minimum)	
ODOUR: Petroleum POUR POINT: -25°C SOLUBILITY: Generally Insoluble	
VISCOSITY: Medium (265 x ST, 15°C) VAPOUR DENSITY: Few Vapours Emitted	
SPECIFIC GRAVITY: Floats on Water (0.9)	
SAFETY MEASURES	
WARNING	Vapours are heavier than air but are unlikely to form. Toxic gas can form in fire and at high temperatures. CO, CO ₂ , and dense smoke are produced upon combustion. Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.
PERSONAL PROTECTION	Always wear impervious, chemical -resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.
PRECAUTIONS	Avoid excessive heat, which can cause formation of vapours. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO ₂ , dry chemical, alcohol foam or water fog. NOTE: water or foam may cause frothing. Use water to cool containers, exposed to fire.

Lube Oil

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Amber Liquid FLASH POINT: 190°C to 2220°C	
ODOUR: Petroleum POUR POINT: -35°C to -40°C SOLUBILITY: Generally Insoluble	
VISCOSITY: Medium (255 xST, 15°C) VAPOUR DENSITY: Few Vapours Emitted	
SPECIFIC GRAVITY: Floats on Water (0.9)	
SAFETY MEASURES	
WARNING	Vapours are heavier than air but are unlikely to form. Toxic gas can form in fire and at high temperatures. CO, CO ₂ , and dense smoke are produced upon combustion. Oil mist or vapour from hot oil can cause irritation of the eyes, nose, throat and lungs.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton are suitable materials (DO NOT USE NATURAL RUBBER). Use of organic vapour cartridge respirator is highly unlikely.
PRECAUTIONS	Avoid excessive heat, which can cause formation of vapours. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA and eye protection when responding to lube oil fires. Shut off fuel supply. Extinguish fire with CO ₂ , dry chemical, alcohol foam or water fog. NOTE: water or foam may cause frothing. Use water to cool containers, exposed to fire.

SAFETY MEASURES	
ON LAND	<p>Prevent additional discharge of oil.</p> <p>Do not flush into ditch/drainage systems. Block entry into waterways.</p> <p>Contain spill by diking with earth, snow or other barrier. Remove minor spills with sorbent and/or peat moss.</p> <p>Remove large spills with pumps or vacuum equipment.</p> <p>Spill can also be mechanically removed if oil is too viscous to be pumped.</p>
ON WATER	<p>Use booms to contain and concentrate spill.</p> <p>Remove spill using sorbent, skimmer or vacuum truck. Protection booming can be considered for water intakes.</p>
STORAGE & TRANSFER	Store closed, labeled containers in cool, and ventilated areas away from incompatible materials.
DISPOSAL	<p>Segregate waste types.</p> <p>Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.</p>
FIRST AID	
EYES	<p>Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open.</p> <p>Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.</p>
SKIN	<p>Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention.</p> <p>Discard saturated leather articles.</p>
INHALATION	<p>Move victim to fresh air.</p> <p>Perform CPR if victim not breathing.</p> <p>Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.</p>
INGESTION	<p>DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration.</p> <p>Get prompt medical attention.</p>

Waste Oil

ON LAND	<p>Prevent additional discharge of oil.</p> <p>Do not flush into ditch/drainage systems. Block entry into waterways.</p> <p>Contain spill by diking with earth, snow or other barrier. Remove minor spills with sorbent pads and/or peat moss. Remove large spills with pumps or vacuum equipment.</p> <p>Spill can also be mechanically removed if oil is too viscous to be pumped.</p>
ON WATER	<p>Use booms to contain and concentrate spill.</p> <p>Remove spill using sorbent, skimmer or vacuum truck. Protection booming can be considered for water intakes.</p>
STORAGE & TRANSFER	Store closed, labeled containers in cool, ventilated areas away from incompatible materials.
DISPOSAL	<p>Segregate waste types.</p> <p>Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.</p>
FIRST AID	
EYES	<p>Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open.</p> <p>Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.</p>
SKIN	<p>Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention.</p> <p>Discard saturated leather articles.</p>

INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Gasoline

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colorless Liquid FLASH POINT: -50°C	
ODOUR: Gasoline/Petroleum POUR POINT: -60°C SOLUBILITY: Generally Insoluble	
VISCOSITY: Not Viscous (<1 cSt) VAPOUR DENSITY: Will Sink to Ground Level	
SPECIFIC GRAVITY: Floats on Water (0.7 - 0.8)	
SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air. Empty containers can contain explosive vapours. Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; PVC, Nitrile, and Viton and PVC are suitable materials (DO NOT USE NATURAL RUBBER or NEOPRENE). Wear full-face organic vapour cartridge respirator where oxygen is adequate; otherwise wear positive pressure SCBA, if circumstances warrant.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Shut off fuel supply. Extinguish fire with CO2, dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.
ON LAND	ELIMINATE IGNITION SOURCES. Do not flush into ditch/drainage systems. Block entry into waterways. Contain spill by diking with earth, snow or other barrier. Remove minor spills with peat moss and/or sorbent pads. Cover pools with foam to prevent vapour evolution if gasoline presents a fire hazard; otherwise allow vapours to dissipate.
ON WATER	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS. Protection booming can be considered for water intakes. Remove spill using sorbent, skimmer or vacuum truck. Protection booming can be considered for water intakes.
STORAGE & TRANSFER	Store closed, labeled container in cool, ventilated areas away from incompatible materials. Electrically ground containers and vehicles during transfer.
DISPOSAL	Place contaminated materials into segregated marked containers. Consult with environmental authorities during final disposal.
FIRST AID	

EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.
SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Propane

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colorless Gas FLASH POINT: -104°C	
ODOUR: Natural Gas Odour POUR POINT: -190°C SOLUBILITY: Generally Insoluble	
VISCOSITY: N/A VAPOUR DENSITY: Will Sink to Ground Level	
SPECIFIC GRAVITY: Liquid Floats on Water	
SAFETY MEASURES	
WARNING	Vapours form instantaneously, and are heavier than air . Vapours can travel to distant sources of ignition and flash back. Eye contact causes irritation. Material can accumulate static charges. Inhalation of vapours can cause irritation of the respiratory tract, headache, vomiting, and unconsciousness.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; Nitrile: and Viton are suitable protective materials (DO NOT USE NATURAL RUBBER, NEOPRENE, OR PVC). Avoid frostbite burn to skin and eyes from contact with propane. Wear full-face organic vapour cartridge respirator where oxygen is adequate, otherwise wear positive pressure SCBA.
PRECAUTIONS	Monitor for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO2, dry chemical, alcohol foam or water fog. Use water to cool containers, exposed to fire.
On Land	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
On Water	ELIMINATE IGNITION SOURCES. DO NOT ATTEMPT TO CONTAIN OR REMOVE SPILLS.
Storage & Transfer	It is not possible to collect released material.
Disposal	Consult with environmental authorities if the disposal of any contaminated materials is required.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.

SKIN	Remove and launder contaminated clothing. Wash skin thoroughly with soap and water. Get medical attention. Discard saturated leather articles.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing. Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	DO NOT INDUCE VOMITING; if victim is conscious; give milk or water to drink. If vomiting begins, keep victim's head below hips to prevent aspiration. Get prompt medical attention.

Antifreeze (Ethylene Glycol)

TYPICAL PHYSICAL AND CHEMICAL PROPERTIES	
APPEARANCE: Colorless Liquid FLASH POINT: 111°C	
ODOUR: Slight; Undetectable <25 ppm POUR POINT: -13°C (48% Solution)	
SOLUBILITY: Soluble in All Proportions VISCOSITY: Not Viscous (=22 cSt)	
VAPOUR DENSITY: Will Sink to Ground Level SPECIFIC GRAVITY: Same as Water (1.0)	
SAFETY MEASURES	
WARNING	Vapours are heavier than air. Ingestion of significant quantities can be lethal. Eye contact causes irritation. Skin contact can cause intoxication due to absorption. Inhalation of vapours can cause intoxication, headache, vomiting, unconsciousness with convulsions, and even death Avoid inhaling vapours, particularly in enclosed places.
PERSONAL PROTECTION	Always wear impervious, chemical-resistant clothing, gloves, footwear, and goggles; neoprene, nitrile, PVC are suitable protective materials.
PRECAUTIONS	Monitor empty containers for explosive atmosphere. Avoid contact with strong oxidizers, such as nitric acid, sulphuric acid, chlorine, ozone, peroxides. Eliminate ignition sources. Restrict access and work upwind of spill.
RESPONSE TO FIRES	
CONSIDER ACTION ONLY IF SAFETY PERMITS!	Wear SCBA in confined areas. Shut off fuel supply. Extinguish fire with CO ₂ , dry chemical, alcohol foam or water fog. (Note: Water or foam may cause frothing). Use water spray to cool containers exposed to fire.
On Land	Block entry into waterways. Do not flush into ditch/drainage systems. Contain spill by diking with earth, snow or other barrier. Remove minor spills with universal type sorbent. Remove large spills with pumps or vacuum equipment.
On Water	Ethylene glycol sinks and mixes with water; contain spill by isolating contaminated water through damming or diversion.
Storage & Transfer	Store closed, labelled containers in cool, ventilated areas away from incompatible materials
Disposal	Segregate waste types. Place contaminated materials into marked containers. Consult with environmental authorities during final disposal.
FIRST AID	
EYES	Flush eyes immediately with fresh, warm water (NOT HOT WATER) for 20 minutes, while holding the eyelids open. Remove contact lenses, if exposed to vapours or liquid. Get prompt medical attention.

SKIN	Remove contaminated clothing. Wash skin thoroughly soap and water. Get medical attention.
INHALATION	Move victim to fresh air. Perform CPR if victim not breathing Provide oxygen if victim is having difficulty breathing. Get prompt medical attention.
INGESTION	INDUCE VOMITING IMMEDIATELY if victim is conscious; Get prompt medical attention.